

From: Sarah Wishingrad <sarah.wishingrad@americanoversight.org>
Sent: Wednesday, January 27, 2021 10:05 AM EST
To: AO Records <records@americanoversight.org>
Subject: FW: [Records Center] General Records Request :: G000492-053020

From: King County Public Records <kingcountyexec@govqa.us>
Date: Tuesday, January 26, 2021 at 3:50 PM
To: Sarah Wishingrad <sarah.wishingrad@americanoversight.org>
Subject: [Records Center] General Records Request :: G000492-053020

EXTERNAL SENDER

--- Please respond above this line ---

January 26, 2021

Re: G000492-053020

Dear Ms. Sarah Wishingrad:

Thank you again for the public records request which the King County Executive Branch received from you on March 05, 2020. We understand you are seeking the following records:

"All email communications between (1) Public Health Director Patty Hayes and/or Health Officer Jeff Duchin, and (2) anyone communicating from an email address ending in cdc.gov, eop.gov, or hhs.gov."

Multiple installments of records responsive to your request are available to you now in the King County Public Records Center. Click the link below to retrieve the records. Please note that the link works best with the Google Chrome browser, and any pop-up blockers need to be turned off.

[General Records Request - G000492-053020](#)

In addition, I have placed the new installments in your shared OneDrive folder.

[Wishingrad OneDrive](#)

We continue to gather and review responsive records, and we anticipate that we will be able to make another another installment of responsive records, should they exist, available to you in approximately 6-8 weeks.

Please let me know if you have any questions.

Sincerely,

Jonathan Bibler, Public Records Officer
Health Information, Release and Records Management
Public Health – Seattle & King County
206-263-3032

[COVID19 Data Dashboard](#)

[Public Health Insider Blog](#)

[COVID19 PRR Index](#)

To monitor the progress or update this request please log into the

Disclaimer:

The Centers for Disease Control and Prevention (CDC), an agency of the Department of Health and Human Services, is authorized to collect this information, including the Social Security number (if applicable), under provisions of the Public Health Service Act, Section 301 (42 U.S.C. 241). Supplying the information is voluntary and there is no penalty for not providing it. The data will be used to increase understanding of disease patterns, develop prevention and control programs, and communicate new knowledge to the health community. Data will become part of CDC Privacy Act system 09-20-0106, "Specimen Handling for Testing and Related Data" and may be disclosed: to appropriate State or local public health departments and cooperating medical authorities to deal with conditions of public health significance; to private contractors assisting CDC in analyzing and refining records; to researchers under certain limited circumstances to conduct further investigations; to organizations to carry out audits and reviews on behalf of HHS; to the Department of Justice in the event of litigation, and to a congressional office assisting individuals in obtaining their records. An accounting of the disclosures that have been made by CDC will be made available to the subject individual upon request. Except for permissible disclosures expressly authorized by the Privacy Act, no other disclosure may be made without the subject individual's written consent.

Please refer to the CDC Infectious Diseases Laboratories Test Directory for information on specimen requirements. CDC must maintain and document specific acceptance criteria to perform laboratory tests on samples obtained from humans pursuant to the Clinical Laboratory Improvement Amendments of 1988 (CLIA) and accompanying regulations. 42 U.S.C. § 263a; 42 C.F.R. § 493.1241.

Samples transferred to the CDC for testing or any other purpose will become the legal property of the agency unless otherwise agreed upon in writing. Samples will not be returned to the submitting entity.

	A	B	C	D	E	F	G
					☐ Short List	☐ Short List	
1	Package ID	CSID	CUID	Origin (This field is required)	Test Order Name	Suspected Agent	Date Sent to CDC
2	CENTRALRECEIVING	CENTRALRECEIVING	SAMPLECONTAINER	CENTRALRECEIVING	CENTRALRECEIVING.METADATA_REPOSITORY	CENTRALRECEIVING.METADATA	CENTRALRECEIVING.CENTRAL
3				Human	Respiratory Virus (Non-Influenza) Special Study		

	H	J	K	L	M	N	O	P
1	At CDC, bring to the attention of:	CDC Local Patient ID	Patient name, Last	Patient name, First	Patient name, Middle Initial	Patient name, Suffix	Patient Birthdate	Patient Age
2	CENTRALRECEIVING.N	PATIENTS_DEPTID.PA	CENTRALRECEIVING.CEN	CENTRALRECEIVING.CEN	CENTRALRECEIVING	CENTRALRECEIV	CENTRALRECEIVIN	CENTRALREC
3								

	Q	R	S	T	U	V	W	X	Y	Z
				☐ Short List						☐ Short List
1	Age units	Patient Sex	Pregnant	Clinical Diagnosis	Date of onset	Fatal	Date of Death	Specimen collected date	Specimen collected time	Material submitted
2	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING
3										

	AA	AB	AC	AD	AE	AF
	☐ Short List	☐ Short List	☐ Short List	☐ Short List	☐ Short List	☐ Short List
1	Specimen source (Type)	Specimen source site	Specimen source site modifier	Collection method	Treatment of specimen	
2	ORDERS.METADATA_REPOS	CENTRALRECEIVING.ME	CENTRALRECEIVING.METADATA	CENTRALRECEIVING	ORDERS.METADATA_REPO	
3						

	AG	AH	AI	AJ	AK
	Short List				
1	Transport medium/Specimen preservative	Specimen handling	SPHL Submitter ID	SPHL Submitter Institution Name	SPHL Contact ID
2	ORDERS.METADATA_REPOSITORY.FIELD_VARC	ORDERS.METADATA_	CENTRALRECEIVIN	SPHL.DUMMY.DUMMY.	VING.CENTRALRECEIVI
3					

	AL	AM	AN	AO	AP	AQ	AR
1	SPHL Submitter Point of Contact Name, Prefix	SPHL Submitter Point of Contact Name, Last	SPHL Submitter Point of Contact Name, First	SPHL Submitter Point of Contact Name, Middle Initial	SPHL Submitter Point of Contact Name, Suffix	SPHL Submitter Point of Contact Name, Degree	SPHL Submitter Point of Contact Phone, Country Code
2	SPHL-POC.RASCLIENT	SPHL-POC.RASCLIENTCON	SPHL-POC.RASCLIENTCON	SPHL-POC.RASCLIENTCONT	SPHL-POC.RASCL	SPHL-POC.RASCLIENTC	SPHL-POC.RASCLIENTC
3							

	AS	AT	AU	AV	AW	AX	AY	AZ
1	SPHL Submitter Point of Contact Phone, Area Code	SPHL Submitter Point of Contact Phone, Local Number	SPHL Submitter Point of Contact Phone, Extension	SPHL Submitter Point of Contact Email	SPHL Submitter Patient ID	SPHL Submitter Alternative Patient ID	SPHL Submitter Specimen ID	SPHL Submitter Alternative Specimen ID
2	SPHL-POC.RASCLIENTC	SPHL-POC.RASCLIENTC	SPHL-POC.RASCLIENTC	SPHL-POC.RASCLIENTC	CENTRALRECE	CENTRALRECEIVIN	CENTRALRECEIV	CENTRALRECEIVING.
3								

	BA	BB	BC	BD	BE	BF	BG	BH
	☐ Private List							
1	Original Submitter ID	Original Submitter Lab Director or Designee Name, Prefix	Original Submitter Lab Director or Designee Name, Last	Original Submitter Lab Director or Designee Name, First	Original Submitter Lab Director or Designee Name, Middle Initial	Original Submitter Lab Director or Designee Name, Suffix	Original Submitter Lab Director or Designee Name, Degree	Original Submitter Institution Name
2	CENTRALRECEIVING.CE	ORIG-DES.RASCLIEN'	ORIG-DES.RASCLIEN'	ORIG-DES.RASCLIEN'	ORIG-DES.RASCLIEN'	ORIG-DES.RASCLIEN'	ORIG-DES.RASCLIEN'	ORIG.RASCLIEN'
3								

	BI	BJ	BK	BL	BM	BN	BO	BP
1	Original Submitter Address, Street Address Line 1	Original Submitter Address, Street Address Line 2	Original Submitter Address, City	Original Submitter Address, Zip/Postal Code	Original Submitter Address, State	Original Submitter Address, Country	Original Submitter Fax, Country Code	Original Submitter Fax, Area Code
2	ORIG.RASCLIENTS.	ORIG.RASCLIENTS.	ORIG.RASCLIENTS.	ORIG.RASCLIENTS.ZIP	ORIG.RASCLIENTS.	ORIG.RASCLIENTS.C	ORIG.RASCLIENTS.FAXC	ORIG.RASCLIENTS.FAXAR
3								

	BQ	BR	BS	BT	BU	BV	BW
1	Original Submitter Fax, Local Number	Original Submitter Email	Original Submitter Contact ID	Original Submitter Point of Contact Name, Prefix	Original Submitter Point of Contact Name, Last	Original Submitter Point of Contact Name, First	Original Submitter Point of Contact Name, Middle Initial
2	ORIG.RASCLIENTS.FAXLOCAL	ORIG.RASCLIENTS.EMAIL	ORIG.RASCLIENTS.ID	ORIG-POC.RASCLIENTPREFIX	ORIG-POC.RASCLIENTLAST	ORIG-POC.RASCLIENTFIRST	ORIG-POC.RASCLIENTMID
3							

	BX	BY	BZ	CA	CB	CC
1	Original Submitter Point of Contact Name, Suffix	Original Submitter Point of Contact Name, Degree	Original Submitter Point of Contact Phone, Country Code	Original Submitter Point of Contact Phone, Area Code	Original Submitter Point of Contact Phone, Local Number	Original Submitter Point of Contact Phone, Extension
2	ORIG-POC.RASCLIEN	ORIG-POC.RASCLIEN	ORIG-POC.RASCLIEN	ORIG-POC.RASCLIEN	ORIG-POC.RASCLIEN	ORIG-POC.RASCLIEN
3						

	CD	CE	CF	CG	CH	CI	CJ	CK
						☐ Private List		
1	Original Submitter Point of Contact Email	Original Submitter Patient ID	Original Submitter Alternative Patient ID	Original Submitter Specimen ID	Original Submitter Alternative Specimen ID	Intermediate Submitter ID	Intermediate Submitter Lab Director or Designee Name, Prefix	Intermediate Submitter Lab Director or Designee Name, Last
2	ORIG-POC.RASCLIENTC	CENTRALRECE	CENTRALRECEIVIN	CENTRALRECEIV	CENTRALRECEIVING	CENTRALRECEIVING.CE	INTER-DES.RASCLIENT	INTER-DES.RASCLIENTC
3								

	CL	CM	CN	CO	CP	CQ	CR	CS	CT
1	Intermediate Submitter Lab Director or Designee Name, First	Intermediate Submitter Lab Director or Designee Name, Middle Initial	Intermediate Submitter Lab Director or Designee Name, Suffix	Intermediate Submitter Lab Director or Designee Name, Degree	Intermediate Submitter Address, Street Address Line 1	Intermediate Submitter Address, Street Address Line 2	Intermediate Submitter Address, City	Intermediate Submitter Address, Zip/Postal Code	
2	INTER-DES.RASCLIENTC	INTER-DES.RASCLIENTC	INTER-DES.RASCLIENTC	INTER-DES.RASCLIENTC	INTER.RASCLIENT	INTER.RASCLIENT	INTER.RASCLIE	INTER.RASCLIENT	
3									

	CU	CV	CW	CX	CY	CZ
1	Intermediate Submitter Address, State	Intermediate Submitter Address, Country	Intermediate Submitter Fax, Country Code	Intermediate Submitter Fax, Area Code	Intermediate Submitter Fax, Local Number	Intermediate Submitter Email
2	INTER.RASCLIENTS.STA	INTER.RASCLIENTS.C	INTER.RASCLIENTS.FAXCOU	INTER.RASCLIENTS.FAXAR	INTER.RASCLIENTS.FAXLOCAL	INTER.RASCLIENT
3						

	DA	DB	DC	DD	DE	DF
1	Intermediate Submitter Contact ID	Intermediate Submitter Point of Contact Name, Prefix	Intermediate Submitter Point of Contact Name, Last	Intermediate Submitter Point of Contact Name, First	Intermediate Submitter Point of Contact Name, Middle Initial	Intermediate Submitter Point of Contact Name, Suffix
2	ING.CENTRALRECEIVING	INTER-POC.RASCLIENTCON	INTER-POC.RASCLIENTCON	INTER-POC.RASCLIENTCON	INTER-POC.RASCLIENTCONT	INTER-POC.RASCLIENTC
3						

	DG	DH	DI	DJ	DK	DL
1	Intermediate Submitter Point of Contact Name, Degree	Intermediate Submitter Point of Contact Phone, Country Code	Intermediate Submitter Point of Contact Phone, Area Code	Intermediate Submitter Point of Contact Phone, Local Number	Intermediate Submitter Point of Contact Phone, Extension	Intermediate Submitter Point of Contact Email
2	INTER-POC.RASCLIENTCC	INTER-POC.RASCLIENTCON	INTER-POC.RASCLIENTCONT	INTER-POC.RASCLIENTCONTACT	INTER-POC.RASCLIENTCONT	INTER-POC.RASCLIENTCC
3						

	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV
1	Intermediate Submitter Patient ID	Intermediate Submitter Alternative Patient ID	Intermediate Submitter Specimen ID	Intermediate Submitter Alternative Specimen ID	Brief Clinical Summary	State of Illness, Symptomatic	State of Illness, Asymptomatic	State of Illness, Acute	State of Illness, Chronic	State of Illness, Convalescent
2	CENTRALRECEI	CENTRALRECEIVING	CENTRALRECEIV	CENTRALRECEIVING.	CENTRALRECEIVI	CENTRALRECEB	CENTRALRECE	CENTRALRI	CENTRALR	CENTRALRECI
3										

	DW	DX	DY	DZ	EA	EB	EC	ED
1	State of Illness, Recovered	Type of Infection, Upper respiratory	Type of Infection, Lower respiratory	Type of Infection, Cardiovascular	Type of Infection, Gastrointestinal	Type of Infection, Genital	Type of Infection, Urinary tract	Type of Infection, Sepsis
2	CENTRALRE	CENTRALRECEIVING.METAL	CENTRALRECEIVING.M	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING
3								

	EE	EF	EG	EH	EI	EJ	EK	EL
								☐ Short List
1	Type of Infection, Central nervous system	Type of Infection, Skin/soft tissue	Type of Infection, Joint/bone	Type of Infection, Disseminated	Type of Infection, Other	Type of Infection, Other (specify)	Therapeutic Agent(s) During Illness, Agent 1	
2	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	
3								

	EM	EN	EO	EP	EQ	ER	ES	ET
			☐ Short List			☐ Short List		
1	Therapeutic Agent(s) During Illness, Agent 1 Start Date		Therapeutic Agent(s) During Illness, Agent 2	Therapeutic Agent(s) During Illness, Agent 2 Start Date	Therapeutic Agent(s) During Illness, Agent 2 End Date	Therapeutic Agent(s) During Illness, Agent 3	Therapeutic Agent(s) During Illness, Agent 3 Start Date	Therapeutic Agent(s) During Illness, Agent 3 End Date
2	CENTRALRECEIVING.		CENTRALRECEIVING.MET	CENTRALRECEIVING.	CENTRALRECEIVING.	CENTRALRECEIVING.MET	CENTRALRECEIVING.	CENTRALRECEIVING
3								

	EU	EV	EW	EX	EY	EZ	FA	FB	FC	FD
1	Extent, Isolated Case	Extent, Carrier	Extent, Contact	Extent, Outbreak	Extent, Outbreak Text	Extent, Family	Extent, Community	Extent, Healthcare-associated	Extent, Epidemic	Travel
2	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECEI	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECEIVIN	CENTRALRECE
3										

	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN	FO
1	Travel, Start Date	Travel, End Date	Travel: Foreign (Countries) 1	Travel: Foreign (Countries) 2	Travel: Foreign (Countries) 3	Foreign Residence (Country)	Travel: United States (States) 1	Travel: United States (States) 2	Travel: United States (States) 3	United States Residence (State)	Exposure
2	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE
3											

	FP	FQ	FR	FS	FT	FU	FV	FW
				☐ Short List	☐ Short List			☐ Short List
1	Date of Exposure	Animal Exposure	Animal Type of Exposure	Animal Common Name	Animal Scientific Name	Arthropod Exposure	Arthropod Type of Exposure	Arthropod Common Name
2	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECEIVING.METADAT	CENTRALRECEIVING.METADATA_REP	CENTRALRECE	CENTRALREC	CENTRALRECEIVING.MET
3								

	FX	FY	FZ	GA	GB	GC	GD	GE	GF
	☐ Short List	☐ Short List		☐ Short List		☐ Short List		☐ Short List	
1	Arthropod Scientific Name	Immunization 1	Immunization 1, Date Received	Immunization 2	Immunization 2, Date Received	Immunization 3	Immunization 3, Date Received	Immunization 4	Immunization 4, Date Received
2	CENTRALRECEIVING.ME	CENTRALRECEIV	CENTRALRECEIV	CENTRALRECEIV	CENTRALRECEIV	CENTRALRECEIV	CENTRALRECEIV	CENTRALRECEIV	CENTRALRECEIV
3									

	GG	GH	GI	GJ	GK	GL	GM	GN
1	Previous Laboratory Results	Comments	Delivered to Unit #	Date received at CDC	Specimen Received at STAT Date (STAT only)	Condition, Outer Package, STAT Laboratory (STAT only)	Condition, Specimen, STAT Laboratory (STAT only)	
2	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	ORDERS.METADATA_REF	PACKAGES.PACKAGES.DA	CENTRALRECEIVING.CEN	CENTRALRECEIVING	CENTRALRECEIVING.M	
3								

	GO	GP	GQ	GR	GS	GT	GU
							☐ Short List
1	CDC Local Aliquot ID	Specimen Received in Lab Date (Unit only)	Condition, Outer Package, Testing Laboratory (Unit only)	Condition, Specimen container, Testing Laboratory (Unit only)	Condition, Specimen, Testing Laboratory (Unit only)	Additional ID 1	Additional Type 1
2	SAMPLECONTAINERS_DE	CENTRALRECEIVING	ORDERS.METADATA_RE	SAMPLECONTAINERS.MET	ORDERS.METADATA_RIC	CENTRALRECEIV	CENTRALRECEIVIN
3							

	GV	GW	GX	GY	GZ	HA	HB	HC
		☐ Short List						
1	Additional ID 2	Additional Type 2	Suspected Agent Category		Date 01	Date 02	Numeric 01	Numeric 02
2	CENTRALRECEIV	CENTRALRECEIVING	CENTRALRECEIVING.MET	CENTRALRECEIVING.MET	CENTRALRECEIVING.MET	CENTRALRECEIVING.MET	CENTRALRECEIVING.MET	CENTRALRECEIVING.MET
3								

	HD	HE	HF	HG	HH	HI	HJ
1	Decimal 01	Alpha Numeric 01	Alpha Numeric 02	Alpha Numeric 03	Alpha Numeric 04	Alpha Numeric 05	Volume
2	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	SAMPLECONTA
3							

	HK	HL	HM	HN	HO	HP	HQ	HR
			Help On Storage Fields					
1	Unit of Measure	Container Type	Storage Locations - Location	Storage Locations - Building	Storage Locations - Room	Storage Locations - Storage Unit	Storage Locations - Shelf	Storage Locations - Rack
2	SAMPLECONTAS	SAMPLECONTAINERS.S	STORAGELOCATION.STORAGELOC	STORAGELOCATIC	STORAGELOCATION.S	STORAGELOCA	STORAGELOCA	STORAGELOCA
3								

	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB	IC
						Help Using Event					
1	Storage Locations - Box	Storage Locations - Absolute Position	Storage Locations - Custodian (User ID)		CDC EVENT ID	Event Name (Only displays for 1 event ID)	CDC CASE ID	Date Subsample Received in Lab	Subsample Comment	Date Aliquot Received in Lab	Aliquot Comment
2	STORAGELOCA	STORAGELOCA	STORAGELOCA	EVENTS_ACCE	EVENTS_ACCESSIONS.DUM	CASE_ACCESSIO	ORDERS.META	ORDERS.META	SAMPLECONTA	SAMPLECONTA	
3											

	A	B	C
1	Origin	Lab Examination Requested	Specific agent
2	ORIGIN	TEST_ORDER_NAME	SPECIFIC_AGENT
3	G001	A282	A160
4	Human	Acanthamoeba Molecular Detection	Abiotrophia adiacens
5	Animal	Adenovirus Molecular Detection and Typing	Abiotrophia defectiva
6	Food	Aerobic Actinomycetes - Identification	Abiotrophia species
7	Environmental	Aerobic Actinomycetes - Identification and Antimicrobial Susceptibility Testing	Acanthamoeba species
8	Medical Device	Alkhurma Hemorrhagic Fever Serology and Molecular Detection	Achromobacter species
9	Biologic	Ameba Identification (Acanthamoeba, Balamuthia, Naegleria)	Acidovorax species
10		Ameba Serology (Acanthamoeba, Balamuthia, Naegleria)	Acinetobacter baumannii
11		Ameba Special Study	Acinetobacter calcoaceticus
12		Anaerobic Bacteria Identification	Acinetobacter calcoaceticus-Acinetobacter baumannii complex
13		Anaplasma Molecular Detection	Acinetobacter haemolyticus
14		Anaplasma Serology	Acinetobacter lwoffii
15		Anaplasma Special Study	Acinetobacter species
16		Angiostrongylus cantonensis Molecular Detection	Acremonium species
17		Antimicrobial Resistant Bacteria - Colonization Screening	Actinobacillus species
18		Antimicrobial Susceptibility Testing (AST) - Bacteria	Actinobaculum species
19		Arbovirus Isolation and Identification	Actinomadura nitritigenes
20		Arbovirus Molecular Detection	Actinomadura species
21		Arbovirus Neutralization Antibody	Actinomyces catuli
22		Arbovirus Serology	Actinomyces dentocariosus
23		Arbovirus Special Study	Actinomyces species
24		Arenavirus (New World) Testing	Actinomycetes (Subclass)
25		Arenavirus (Old World) Testing	Adenovirus
26		Atypical Bacterial Pneumonia Agents (Chlamydia pneumoniae, Mycoplasma pneumoniae)	Aerobic actinomycetes
27		Babesia Molecular Detection	Aerococcus urinae
28		Babesiosis Serology	Aerococcus viridans
29		Bacillus anthracis Detection in Clinical Specimens	Aeromonas hydrophila
30		Bacillus anthracis Genotyping and AST	Aeromonas punctata
31		Bacillus anthracis Serology	Aeromonas species
32		Bacillus anthracis Study	Aeromonas trota
33		Bacillus cereus Detection - Foodborne Outbreak	Aggregatibacter actinomycetemcomitans
34		Bacillus cereus Genotyping	Aggregatibacter segnis
35		Bacillus species Identification (Not B. anthracis)	Agrobacterium species
36		Bacterial Identification from Clinical Specimens (16S rRNA Polymerase Chain Reaction)	Alcaligenes species
37		Bacterial Identification of Unknown Isolate (Not Strict Anaerobe)	Alloicoccus otitis
38		Balamuthia Molecular Detection	Alternaria species
39		Bartonella henselae/B. quintana Indirect Fluorescent Antibody (IFA) test	Amycolatopsis species
40		Bartonella Special Study	Anaerobe
41		Baylisascariasis Serology	Anaerobic Gram positive coccobacillus
42		Biodefense R&D Study	Anaerobic Gram-negative bacillus
43		Bio-Rad avidity-based incidence (BRAI) assay	Anaerobic Gram-negative coccobacillus
44		Biothreat Event	Anaerobic Gram-negative coccus
45		Blood Disorders Coagulation Study	Anaerobic Gram-positive bacillus
46		Bordetella pertussis and Related Species Detection and Identification	Anaerobic Gram-positive coccus
47		Bordetella pertussis Serology	Anaerobic non-sporing Gram-positive bacillus

WA KINGCO 20-0492-G-000032

	D	E	F	G	H	I	J
1	Age type	Sex - Human	Sex - Animal	Clinical diagnosis	Prefix	Suffix	Material submitted (Submitted as)
2	AGE_TYPE	SEX	SEX	DIAGNOSIS	Multiple	Multiple	SUBMITTED_AS
3	B03W	A278	A278	A279	X120	X121	G002
4	Year	Female	Female	Abdominal pain	Dr	Jr	Bacteria
5	Month	Male	Male	Actinomycosis	Mr	Sr	Concentrate
6	Week	Ambiguous	Multiple genders	Acute bacterial endocarditis	Mrs	II	Data_Sequence
7	Day	Not applicable	Neutered female	Acute hemorrhagic conjunctivitis	Ms	III	DNA-Deoxyribonucleic acid
8	Hour	Other	Neutered male	Acute hemorrhagic cystitis		IV	Grid (Electron Microscopy)
9	Minute	Unknown	Not applicable	Adiaspiromycosis		V	Image
10	Second			African Tick Bite Fever		VI	Isolate
11	Unknown			African trypanosomiasis			Original material
12	Gestational-Month			AIDS			Plasmid
13	Gestational-Week			Amebiasis			Protein
14				Anaplasmosis			RNA-Ribonucleic acid
15				Anthrax			Slide
16				Aplastic anemia			TC Supernatant
17				Arthropathy			TNA-Nucleic acid (Total)
18				Ascariasis			
19				Aseptic meningitis			
20				Aspergillosis			
21				Asthma			
22				Asymptomatic			
23				Atypical pneumonia			
24				Babesiosis			
25				Bacteremia			
26				Basidiobolomycosis			
27				Blastomycosis			
28				Bloody Diarrhea			
29				Botulism			
30				Botulism toxoid recipient			
31				Brain lesion			
32				Bronchiolitis			
33				Bronchiolitis obliterans			
34				Bronchitis			
35				Brucellosis			
36				Campylobacteriosis			
37				Cancer			
38				Candidemia			
39				Candidiasis			
40				Cat-Scratch fever			
41				Central nervous system disease			
42				Cerebral hemorrhage			
43				Chagas disease			
44				Chancroid			
45				Cholera			
46				Chromoblastomycosis			
47				Chronic infectious disease			

WA KINGCO 20-0492-G-000033

	K	L	M	N
1	Specimen type - All	Specimen type - Human and Animal	Specimen type - FEMB	Serology information
2	CLASS_NAME	CLASS_NAME	CLASS_NAME	Specimen type modifier
3	X107			SPECIMEN_TAKEN_AT
4	Abscess	Abscess	Aerator	X111
5	Aerator	Arthropod	Aerosol	Acute
6	Aerosol	Aspirate	Air (environmental sample)	Aneurysm
7	Air (environmental sample)	Bile	Bedding_Animal	Baseline
8	Arthropod	Biopsy specimen	Bedding_Animal, Wood shavings	Bloody
9	Aspirate	Blood	Blood product	Boil (Furuncle)
10	Bedding_Animal	Blood clot specimen	Building Product	Branchial cleft
11	Bedding_Animal, Wood shavings	Blood_whole	Burrow swab	Calcification_Pathologic
12	Bile	Bone marrow	Catheter	Control
13	Biopsy specimen	Bone specimen	Cell line	Convalescent
14	Blood	Brain	Central line	Mycotic aneurysm
15	Blood clot specimen	Brain biopsy	Chili	Necrotic debris
16	Blood product	Breast Milk	Commercial Products (usually drugs)	Pseudomembrane
17	Blood_whole	Bronchial washings	Condiment	Purpura
18	Bone marrow	Buccal swab	Condiment_Salsa	Rash
19	Bone specimen	Buffy coat	Contraceptive devices	s1
20	Brain	Bullae	Dairy	S10
21	Brain biopsy	Capillary blood specimen	Dairy_Butter	s2
22	Breast Milk	Carcass specimen	Dairy_Cheese	s3
23	Bronchial washings	CD4- leukocytes	Dairy_Ice cream	s4
24	Buccal swab	CD4+ lymphocytes	Dairy_Milk	s5
25	Buffy coat	Cell line	Dairy_Yogurt	s6
26	Building Product	Colonic polyp sample	DNA-Deoxyribonucleic acid	S7
27	Bullae	Contraceptive devices	Dust	S8
28	Burrow swab	Corneal impression	Dust_wood	S9
29	Capillary blood specimen	Crust	Egg	Seroma
30	Carcass specimen	Cyto-Chex	Endoscope	Unknown
31	Catheter	Cytologic material	Environmental swab	
32	CD4- leukocytes	Dialysate	Faucet component	
33	CD4+ lymphocytes	DNA-Deoxyribonucleic acid	Feed, Animal	
34	Cell line	Dried blood spot (DBS)	Feed_Avian	
35	Central line	Dried plasma spot	Filter	
36	Chili	Dried tube specimen (DTS)	Food	
37	Colonic polyp sample	Egg	Foreign object (body)	
38	Commercial Products (usually drugs)	Endoscope	Formula, Infant	
39	Condiment	Eschar	Formula, Infant_ Liquid	
40	Condiment_Salsa	Eschar swab	Formula, Infant_Powdered	
41	Contraceptive devices	Esophageal brushings sample	Formula, Infant_Soy	
42	Corneal impression	Exhaled breath condensate	Fruit, Papaya	
43	Crust	Exudate	Grain	
44	Cyto-Chex	Eye (Lacrimal) secretions	Grain, Bread	
45	Cytologic material	Eye swab	Grain, Cereal	
46	Dairy	Fistula	Grain, Rice	
47	Dairy_Butter	Flea	HEPA-sock	

WA KINGCO 20-0492-G-000034

	O	P	Q
1	Anatomic site	Anatomic site modifier	Collection method - All
2	SPECIMEN_SITE	ANATOM_SITE_MOD	COLLECTION_PROC
3	X100	X101	B1W9
4	Abdomen	Anterior	Abdominal hysterectomy
5	Abdominal cavity	Apical	Aptima™ Collection Kit
6	Abdominal wall	Axillary	Aspiration
7	Achilles tendon	Basal	Autopsy examination
8	Acromioclavicular joint	Bilateral (Right and left)	Biopsy
9	Adenoid	Central	Biopsy_brush
10	Amniotic sac	Deep	Biopsy_Fine needle
11	Amputation stump	Distal	Biopsy_Punch
12	Anal region	Dorsal	Biopsy_Punch, Skin
13	Ankle	Exterior	Biopsy_Shave
14	Anterior chamber of eye	Fragmented	Biopsy_skin
15	Anterior descending branch of left coronary artery	Great	Blood collection
16	Anterior longitudinal ligament	Inferior	Bronchial washing
17	Anterior stomach wall	Interior	Bronchoalveolar lavage
18	Anterior tibial muscle tendon	Left	Bronchoscopy
19	Aorta	Left anterior	Carbon dioxide (dry ice) trap
20	Aortic valve	Left dorsal	Catch-All™
21	Aortic valve leaflet	Left frontal	Catheterization
22	Appendix	Left inner	Cesarean section
23	Appendix epiploica	Left lateral	Clipping nails of patient
24	Arm	Left lower	Colonoscopy
25	Arm_Forearm	Left medial	Colonoscopy and biopsy of colon
26	Arm_Upper	Left outer	Composite
27	Axilla	Left posterior	Corneal transplant
28	Axilla and Groin	Left upper	Debridement
29	Back	Left ventral	Endoscopy
30	Basal ganglion	Lower	Enema
31	Bile duct	Mesenteric	Environmental
32	Bladder	Mid left dorsal	Finger-prick (stick)
33	Bone	Mid left ventral	Grab-sample
34	Bone_Acetabulum	Mid right dorsal	Irrigation
35	Bone_Clavicle	Mid right ventral	Knee arthroplasty (replacement)
36	Bone_Coccyx	Middle	Lavage
37	Bone_Ethmoid process	Peripheral	Lavage_cervical
38	Bone_Femur	Posterior	Magnetic resonance imaging
39	Bone_Mandible	Proximal	PAP smear preparation
40	Bone_Mastoid	Right	Resection (Excision)
41	Bone_Metacarpal	Right anterior	Resection (Excision)_Partial
42	Bone_Metatarsal	Right dorsal	Right hemicolectomy
43	Bone_Rib	Right frontal	Rinse
44	Bone_Sacrum	Right inner	Scraping
45	Bone_Scapula	Right lateral	Slide
46	Bone_sphenoid	Right lower	Sternotomy
47	Bone_Sternum	Right medial	Swab

WAKINGCO-20-0492-G-000035

	R	S
1	Collection method - Human and Animal	Collection method - FEMB
2	COLLECTION_PROC	COLLECTION_PROC
3	B1W9	B1W9
4	Abdominal hysterectomy	Aptima™ Collection Kit
5	Aptima™ Collection Kit	Aspiration
6	Aspiration	Autopsy examination
7	Autopsy examination	Carbon dioxide (dry ice) trap
8	Biopsy	Composite
9	Biopsy_brush	Environmental
10	Biopsy_Fine needle	Grab-sample
11	Biopsy_Punch	Irrigation
12	Biopsy_Punch, Skin	Rinse
13	Biopsy_Shave	Scraping
14	Biopsy_skin	Swab
15	Blood collection	Tick drag/flag
16	Bronchial washing	Unknown
17	Bronchoalveolar lavage	Vacuum
18	Bronchoscopy	WECK-CEL
19	Catch-All™	Wipe
20	Catheterization	
21	Cesarean section	
22	Clipping nails of patient	
23	Colonoscopy	
24	Colonoscopy and biopsy of colon	
25	Composite	
26	Corneal transplant	
27	Debridement	
28	Endoscopy	
29	Enema	
30	Finger-prick (stick)	
31	Irrigation	
32	Knee arthroplasty (replacement)	
33	Lavage	
34	Lavage_cervical	
35	Magnetic resonance imaging	
36	PAP smear preparation	
37	Resection (Excision)	
38	Resection (Excision)_Partial	
39	Right hemicolectomy	
40	Rinse	
41	Scraping	
42	Slide	
43	Sternotomy	
44	Swab	
45	TearFlo strip	
46	Thoracentesis	
47	Tick drag/flag	

	T	U	V
1	Transport medium/Additive	Processing	Specimen Handling
2	SUBMITTED_ON	PROCESSING	SPECIMEN_HANDLING
3	A291	X105	X122
4	Acid Citrate Dextrose (ACD)	Centrifugation	Ambient temperature
5	Amies Charcoal Transport medium	Concentration	Cold (Ice Pack)
6	Amies Transport Medium	Culture	Freeze dried (Lyophilized)
7	Aptima specimen transport medium	Decontamination	Frozen (Dry Ice)
8	BacT/ALERT Broth	Dilution	Silica Gel pack
9	BacT/ALERT MP	DNA extraction	
10	Blood agar_Horse	Elution	
11	Blood agar_Rabbit	Enrichment	
12	Blood agar_Sheep	Filtration_bagmediated	
13	Bold's Basal (BB) Medium	Filtration_cafe	
14	Bordet Gengou agar	Formalin-Fixation	
15	Brain-Heart Infusion agar (BHIA)	Homogenization	
16	Brain-Heart Infusion broth (BHIB)	Lyophilization	
17	Brilliant Green (BG) Agar	Lysate	
18	Bromo Thymol Blue (BTB) Lactose Agar	Membrane Filtration	
19	Buffered Charcoal Yeast Extract (BCYE) Agar	Methanol	
20	Buffered Glycerol Saline (BGS)	Neutralization	
21	Buffered salt solution (BSS)	Nucleic_acid_extraction	
22	Campy CVA agar	Paraffin embedding	
23	Campy-BAP agar	RNA extraction	
24	Campy-Thio broth	Stain_DFA	
25	Cary-Blair Transport Medium	Stain_H&E	
26	Chloroform	Staining method	
27	Chocolate agar	TNA extraction	
28	Chopped Meat Glucose Broth with Vitamin K and Hemin	Two-phase	
29	Citrate, theophylline, adenosine, dipyridamole (CTAD)	Ultrafilter Backflush	
30	Cooked (Chopped) Meat agar	Ultrafiltration	
31	Cooked (Chopped) Meat broth	Unknown	
32	Dextrose starch agar		
33	Ecofix, Unifix, Protifix, or Totalfix		
34	Egg_Embryonated Chicken		
35	Enteric Plus medium		
36	Enteric Transport Medium (ETM)		
37	Ethanol (70%)		
38	Ethylenediaminetetraacetic acid (EDTA)		
39	Formalin		
40	Formalin (10%)_Physiological saline solution		
41	Formalin_Buffered Neutral (10%)		
42	FTA card		
43	Fusobacterium egg yolk agar		
44	Glycerol (20%) - Trypticase Soy broth		
45	Glycerol saline solution		
46	Gram Negative Broth (GN)		
47	Heart Infusion Agar (HIA)		

	W	X	Y	Z
1	State, USA Travel (1) (2) (3), USA residence	Country, Foreign Travel (1) (2) (3), Foreign residence	Treatments (1) (2) (3)	Yes/No/Unknown
2	Multiple	Multiple	Multiple	Multiple
3	B02T	B02P	B026	X113
4	Alabama	United States	Acyclovir	Yes
5	Alaska	Afghanistan	Amantadine	No
6	American Samoa	Aland Islands	Amikacin	Unknown
7	Arizona	Albania	Amoxicillin	
8	Arkansas	Algeria	Amoxicillin+Clavulanic Acid	
9	Baker Island	American Samoa	Amphotericin	
10	California	Andorra	Ampicillin	
11	Colorado	Angola	Ampicillin+sulbactam	
12	Connecticut	Anguilla	Antibiotic	
13	Delaware	Antarctica	Azithromycin	
14	District of Columbia	Antigua and Barbuda	Azlocillin	
15	Federated States of Micronesia	Argentina	Bacitracin	
16	Florida	Armenia	Benzylpenicillin (penicillin G)	
17	Georgia	Aruba	Botulinum antitoxin	
18	Guam	Australia	Cadmium	
19	Hawaii	Austria	Capreomycin	
20	Howland Island	Azerbaijan	Carbenicillin	
21	Idaho	Bahamas	Cefaclor	
22	Illinois	Bahrain	Cefaloridine	
23	Indiana	Bangladesh	Cefamandole	
24	Iowa	Barbados	Cefatrizine	
25	Jarvis Island	Belarus	Cefixime	
26	Johnston Atoll	Belgium	Cefonicid	
27	Kansas	Belize	Cefoperazone	
28	Kentucky	Benin	Ceforanide	
29	Kingman Reef	Bermuda	Cefotaxime	
30	Louisiana	Bhutan	Cefotetan	
31	Maine	Bolivia	Cefoxitin	
32	Marshall Islands	Bosnia and Herzegovina	Cefpodoxime	
33	Maryland	Botswana	Cefsulodin	
34	Massachusetts	Bouvet Island	Ceftazidime	
35	Michigan	Brazil	Ceftizoxime	
36	Midway Islands	British Indian Ocean Territory	Ceftriaxone	
37	Minnesota	Brunei Darussalam	Cefuroxime	
38	Mississippi	Bulgaria	Cephalexin	
39	Missouri	Burkina Faso	Cephapirin	
40	Montana	Burundi	Cephazolin	
41	Navassa Island	Cambodia	Cephradine	
42	Nebraska	Cameroon	Chloramphenicol	
43	Nevada	Canada	Cidofovir	
44	New Hampshire	Cape Verde	Cinoxacin	
45	New Jersey	Cayman Islands	Ciprofloxacin	
46	New Mexico	Central African Republic	Clavulanic acid	
47	New York	Chad	Clindamycin	

WA KINGCO 20-0492-G-000038

	AA	AB	AC	AD
1	Type of exposure	Animal - Common name	Animal -Scientific name	Animal category
2	Multiple	Multiple	Multiple	Multiple
3	R002	B08F	SPC1	X106
4	Bite	Alpaca	[Bearded dragon]	Breeding stock
5	No known exposure	Amphibian (Class Amphibia)	[Coyote-dog hybrid]	Circus
6	Nonbite (contact only)	Antelope_Pronghorn	[Deer]	Companion (Pet)
7	Nonbite (scratch)	Antelope_Roan	[Donkey]	Competition
8	Unknown	Antelope_Sable	[Duck]	Domestic animal (livestock) - Dairy
9		Antelope_Sable (Genus Hippotragus)	[Elephant]	Domestic animal (livestock) - Draft
10		Armadillo_Nine-banded	[Ferret]	Domestic animal (livestock) - Fiber
11		Baboon (Genus Papio)	[Fox]	Feral
12		Badger_American	[Frog]	Game
13		Bandicoot_Rat, Lesser	[Frog_Toad]	Layer (Poultry)
14		Bat (Order Chiroptera)	[Gecko]	Livestock, Meat
15		Bat_Allen's Big-eared	[Gerbil]	Multipurpose
16		Bat_Antillean Ghost-faced	[Goldfinch]	Petting Zoo Animal
17		Bat_Arizona Myotis	[Goose_Domestic]	Rescue
18		Bat_Big brown	[Hamster]	Research
19		Bat_Big Free-tailed	[Hawk]	Service
20		Bat_Black mastiff	[Iguana]	Unknown
21		Bat_Brazilian (Mexican) Free-Tailed	[Kangaroo]	Wild (Domesticated)
22		Bat_California Leaf-nosed	[Lizard]	Wildlife
23		Bat_California Myotis	[Lorikeet]	Zoo Animal
24		Bat_Cave Myotis	[Monkey]	
25		Bat_Eastern Pipistrelle	[Mouse]	
26		Bat_Eastern Red	[Mouse_Neonatal]	
27		Bat_Eastern Small-footed Myotis	[Owl]	
28		Bat_Egyptian Rousette	[Oyster]	
29		Bat_Evening	[Pigeon]	
30		Bat_Fishing	[Primate_Nonhuman]	
31		Bat_Fishing (Genus Noctilio)	[Quail]	
32		Bat_Flying foxes (Genus Pteropus)	[Rabbit]	
33		Bat_Free-tailed (Family Molossidae)	[Seal]	
34		Bat_Free-tailed (Genus Tadarida)	[Turkey]	
35		Bat_Fringed Myotis	[Turtle]	
36		Bat_Ghost-Faced	[Vole]	
37		Bat_Gray	[Wallaby]	
38		Bat_Hoary	Acinonyx jubatus	
39		Bat_Indian Flying Fox	Ailuropoda melanoleucus	
40		Bat_Indiana	Ailurus fulgens	
41		Bat_Jamaican Fruit-eating	Alces alces	
42		Bat_Keen's Myotis	Ammospermophilus harrisi	
43		Bat_Little Brown Bat	Ammospermophilus insularis	
44		Bat_Long-Eared Myotis	Ammospermophilus interpres	
45		Bat_Long-Haired Rousette	Ammospermophilus leucurus	
46		Bat_Long-Legged Myotis	Ammospermophilus nelsoni	
47		Bat_Long-nosed, Southern	Amphibia (Class)	

WA KINGCO 20-0492-G-000039

	AE	AF	AG	AH
1	Arthropod - Common name	Arthropod - Scientific name	Immunization #1, #2, #3, #4 - Human	Immunization #1, #2, #3, #4 - Animal
2	Multiple	Multiple	Multiple	Multiple
3	B0ZV	SPC3	B0Z0	B0Z0
4	Arachnids (Class)	[Blow fly]	Adenovirus	Adenovirus
5	Black fly (Family Simuliidae)	[Fly]	Anthrax vaccination	Avian encephalomyelitis
6	Black fly (Simulium nigricoxum)	[Hornet]	BCG vaccination	Avian infectious bursal disease antibodies
7	Blow fly	[Maggot]	Botulism antitoxin vaccine	Avian infectious laryngotracheitis
8	Bot fly (Family Oestridae)	Actenopsylla suavis	DPT vaccination	Avian pox
9	Crustacean (Subphylum Crustacea)	Adoratopsylla intermedia	Haemophilus influenzae type b vaccination	Blackleg
10	Deer fly (Genus Chrysops)	Aetheca thamba	Influenza - Pan. H1N1 Inactivated	Bordetella ("kennel cough")
11	Flea (Actenopsylla suavis)	Aetheca wagneri	Influenza - Pan. H1N1 Live	Bordetella bronchiseptica
12	Flea (Adoratopsylla intermedia)	Amaradix bitterrootensis	Influenza - PrePan. H5N1 Inactivated	Canine coronavirus
13	Flea (Aetheca thamba)	Amaradix euphorbi	Influenza - PrePan. H5N1 Live	Canine distemper virus (CDV)
14	Flea (Aetheca wagneri)	Amblyomma americanum	Influenza vaccination	Canine leptospirosis
15	Flea (Amaradix bitterrootensis)	Amblyomma dubitatum	Influenza - Seasonal Inactivated	Canine parainfluenza virus
16	Flea (Amaradix euphorbi)	Amblyomma imitator	Influenza - Seasonal Live	Canine parvovirus (CPV)
17	Flea (Amphipsylla sibirica pollionis)	Amblyomma inornatum	Inactivated Influenza Vaccination	Chlamydiosis
18	Flea (Amphipsylla sibirica washingtona)	Amblyomma interandinum	Lyme disease	Dermatophytosis (ringworm)
19	Flea (Amphipsylla sibirica)	Amblyomma maculatum	Measles vaccine	Duck plague
20	Flea (Anomiopsyllus amphibolus)	Amblyomma mixtum	Meningococcus vaccination	Egg drop syndrome
21	Flea (Anomiopsyllus durangoensis)	Amblyomma ovale	MMR	Enterotoxemia
22	Flea (Anomiopsyllus falsicalifornicus)	Amblyomma patinoi	MMR vaccination	Feline calicivirus (FCV)
23	Flea (Anomiopsyllus martini)	Amblyomma sculptum	MR vaccine (measles and rubella)	Feline infectious peritonitis (FIP)
24	Flea (Anomiopsyllus montanus)	Amblyomma spp.	Mumps vaccination	Feline leukemia virus (FeLV)
25	Flea (Anomiopsyllus nidiophilus)	Amblyomma tonelliae	Mumps vaccine	Feline panleukopenia (FPL)
26	Flea (Anomiopsyllus novomexicanensis)	Amblyomma triste	Plague vaccination	Feline viral rhinotracheitis (FVR)
27	Flea (Anomiopsyllus nudatus)	Amblyomma tuberculatum	Pneumococcal vaccination	Foot-and-Mouth Disease
28	Flea (Anomiopsyllus oaxacae)	Amblyomma variegatum	Poliomyelitis vaccination	Haemophilus paragallinarum (HPG)
29	Flea (Anomiopsyllus sinuatus)	Amphipsylla sibirica	Q Fever Vaccination	Infectious Bronchitis
30	Flea (Anomiopsyllus sp (Genus))	Amphipsylla sibirica pollionis	Rabies vaccination	Infectious necrotic hepatitis
31	Flea (Anomiopsyllus traubi)	Amphipsylla sibirica washingtona	Rocky Mountain spotted fever vaccination	Influenza
32	Flea (Anomiopsyllus walkeri)	Anomiopsyllus amphibolus	Rubella vaccination	Influenza_Avian
33	Flea (Atheropsylla cochisei)	Anomiopsyllus durangoensis	Rubeola vaccination	Lyme disease
34	Flea (Athyphloceras bishopi)	Anomiopsyllus falsicalifornicus	Smallpox vaccination	Mycoplasma gallisepticum
35	Flea (Athyphloceras echis)	Anomiopsyllus martini	Tetanus vaccination	Newcastle Disease
36	Flea (Athyphloceras multidentatus)	Anomiopsyllus montanus	Tularaemia vaccination	Rabies
37	Flea (Athyphloceras tancitari)	Anomiopsyllus nidiophilus	Typhoid vaccination	Rattlesnake
38	Flea (Baculomeris altmani)	Anomiopsyllus novomexicanensis	Unknown	Swine fever
39	Flea (Baculomeris schmidt)	Anomiopsyllus nudatus	Varicella vaccination	Swine Pasteurella multocida
40	Flea (Callistopsyllus terinus campestris)	Anomiopsyllus oaxacae	Yellow fever vaccination	Swine Streptococcal Septicemia
41	Flea (Callistopsyllus terinus deuterus)	Anomiopsyllus sinuatus	Zoster vaccination	Unknown
42	Flea (Callistopsyllus terinus terinus)	Anomiopsyllus sp (Genus)	Unknown	
43	Flea (Carteretta carteri)	Anomiopsyllus traubi		
44	Flea (Carteretta clavata)	Anomiopsyllus walkeri		
45	Flea (Catallagia arizonae)	Atheropsylla cochisei		
46	Flea (Catallagia borealis)	Athyphloceras bishopi		
47	Flea (Catallagia calisher)	Athyphloceras echis		

WA KINGCO 20-0492-G-000040

	AI	AJ	AK	AL
1	Conditions	Local Types	Suspected Agent Category	STAT Package Condition
2	Multiple	Multiple	Multiple	Multiple
3	X104	A297	A283	CND1
4	Ambient temperature	ABC Accession Number	Babesia species	Damaged
5	Bloody	ABC Number	Bacteria	Good
6	Cold	ABC State ID	Chemical or external agent	Wet
7	Fixed	Aliquot No.	Free-living amoeba	
8	Fresh	APHL	Fungi	
9	Frozen	ARL Clinical #	Fusobacterium species	
10	Good	Battelle Memorial Institute	Mycobacterium	
11	Inadequate volume	BRRAT Batch	Non-infectious	
12	Inappropriate specimen	BT Number	Other	
13	Insufficient sample	Bureau of Labs	Parasite	
14	Lipemic	Campylobacter Ref Lab ID	Prion	
15	Lyophilized	Campylobacter Reference Lab ID	Rabies	
16	Missing submission data	Case Number	Rabies-confirmed	
17	Mixed	CDC	Rabies-rule out	
18	Primary	CDC Outbreak ID:	Rickettsia	
19	Pure	City Health Department	Toxin	
20	Refrigerated	Clinic	Unknown	
21	Sample broken	Collaborating Lab	Virus	
22	Sample clotted	Commercial lab		
23	Sample Cloudy	Correctional Institution		
24	Sample contaminated	Country		
25	Sample hemolyzed	Country Health Department		
26	Sample icteric	County Health Department		
27	Sample incorrectly labelled	County ID		
28	Sample leaked	Culture Collection #		
29	Sample missing	Date Of Birth		
30	Sample turbid	Dept of Health & Senior Services		
31	Sample undocumented	Dept of HRS		
32	Sample unlabelled	District Health Department		
33	Sample with noticeable liquid content	Drug Resistance Lab ID		
34	Secondary	Dx Lab		
35	Specimen rejected / not processed	EIS Officer		
36	Specimen unsatisfactory for evaluation	Emory Yerkes Primate Center		
37	Thawed	EPA		
38	Warm	Epi-Aid Number:		
39		FDA		
40		Federal Bureau of Prisons		
41		Federal Agency/Institution		
42		Federal Hospital		
43		Foreign National Public Health Lab		
44		Hospital		
45		International Institution		
46		International Submitter		
47		Journal of Infectious Disease		

WA KINGCO 20-0492-G-000041

	AM	AN	AO	AP
1	STAT Container Condition	STAT Specimen Condition	Combined Common Name	Combined Scientific Name
2	Multiple	Multiple	Multiple	Multiple
3	CND2	CND3	B08F/B0ZV	SPC1/SPC3
4	Ambient temperature	Bloody	Alpaca	Lama pacos
5	Cold	Fixed	Amphibian (Class Amphibia)	Amphibia (Class)
6	Frozen	Fresh	Antelope_Pronghorn	Antilocapra americana
7	Thawed	Good	Antelope_Roan	Hippotragus equinus
8	Warm	Inadequate volume	Antelope_Sable	Hippotragus niger
9		Inappropriate specimen	Antelope_Sable (Genus Hippotragus)	Hippotragus (Genus)
10		Insufficient sample	Arachnids (Class)	Class Arachnida
11		Lipemic	Armadillo_Nine-banded	Dasypus novemcinctus
12		Lyophilized	Baboon (Genus Papio)	Papio (Genus)
13		Refrigerated	Badger_American	Taxidea taxus
14		Sample broken	Bandicoot_Rat, Lesser	Bandicota bengalensis
15		Sample clotted	Bat (Order Chiroptera)	Chiroptera (Order)
16		Sample cloudy	Bat_Allen's Big-eared	Idionycteris phyllotis
17		Sample contaminated	Bat_Antillean Ghost-faced	Mormoops blainvillii
18		Sample hemolyzed	Bat_Arizona Myotis	Myotis occultus
19		Sample icteric	Bat_Big brown	Eptesicus fuscus
20		Sample incorrectly labelled	Bat_Big Free-tailed	Nyctinomops macrotis
21		Sample leaked	Bat_Black mastiff	Molossus ater
22		Sample missing	Bat_Brazilian (Mexican) Free-Tailed	Tadarida brasiliensis
23		Sample turbid	Bat_California Leaf-nosed	Macrotus californicus
24		Sample undocumented	Bat_California Myotis	Myotis californicus
25		Sample unlabelled	Bat_Cave Myotis	Myotis velifer
26		Sample with noticeable liquid co	Bat_Eastern Pipistrelle	Pipistrellus subflavus
27		Secondary	Bat_Eastern Red	Lasiurus borealis
28		Specimen rejected / not processe	Bat_Eastern Small-footed Myotis	Myotis leibii
29		Specimen unsatisfactory for eval	Bat_Egyptian Rousette	Rousettus aegyptiacus
30		Thawed	Bat_Evening	Nycticeius humeralis
31			Bat_Fishing	Noctilio leporinus
32			Bat_Fishing (Genus Noctilio)	Noctilio (Genus)
33			Bat_Flying foxes (Genus Pteropus)	Pteropus (Genus)
34			Bat_Free-tailed (Family Molossidae)	Molossidae (Family)
35			Bat_Free-tailed (Genus Tadarida)	Tadarida (Genus)
36			Bat_Fringed Myotis	Myotis thysanodes
37			Bat_Ghost-Faced	Mormoops megalophylla
38			Bat_Gray	Myotis grisescens
39			Bat_Hoary	Lasiurus cinereus
40			Bat_Indian Flying Fox	Pteropus giganteus
41			Bat_Indiana	Myotis sodalis
42			Bat_Jamaican Fruit-eating	Artibeus jamaicensis
43			Bat_Keen's Myotis	Myotis keenii
44			Bat_Little Brown Bat	Myotis lucifugus
45			Bat_Long-Eared Myotis	Myotis evotis
46			Bat_Long-Haired Rousette	Rousettus lanosus
47			Bat_Long-Legged Myotis	Myotis volans

WA KINGCO 20-0492-G-000042

	AQ	AR	AS	AT	AU	AV
1	Storage Locations	Absolute Position	Storage Location Building	Combined Scientific Name	Checkbox	Pregnant
2	LOCATION	Position	Building	[Bearded dragon]	Y	Yes
3	None	None	None	[Blow fly]		No
4	Anchorage	Auto Assign	BLD 10	[Coyote-dog hybrid]		Unknown
5	Atlanta - Roybal	A , 1	BLD 14	[Deer]		NA
6	Atlanta - Chamblee	A , 2	BLD 15	[Donkey]		
7	San Juan	A , 3	BLD 16	[Duck]		
8	Fort Collins	A , 4	BLD 17	[Elephant]		
9		A , 5	BLD 18	[Ferret]		
10		A , 6	BLD 19	[Fly]		
11		A , 7	BLD 20	[Fox]		
12		A , 8	BLD 21	[Frog]		
13		A , 9	BLD 23	[Frog_Toad]		
14		A , 10	BLD 24	[Gecko]		
15		A , 11	BLD 34	[Gerbil]		
16		A , 12	BLD 43	[Goldfinch]		
17		A , 13	BLD 45	[Goose_Domestic]		
18		A , 14	BLD 47	[Hamster]		
19		A , 15	BLD 48	[Hawk]		
20		B , 1	BLD 52	[Hornet]		
21		B , 2	BLD 54	[Iguana]		
22		B , 3		[Kangaroo]		
23		B , 4		[Lizard]		
24		B , 5		[Lorikeet]		
25		B , 6		[Maggot]		
26		B , 7		[Monkey]		
27		B , 8		[Mouse]		
28		B , 9		[Mouse_Neonatal]		
29		B , 10		[Owl]		
30		B , 11		[Oyster]		
31		B , 12		[Pigeon]		
32		B , 13		[Primate_Nonhuman]		
33		B , 14		[Quail]		
34		B , 15		[Rabbit]		
35		C , 1		[Seal]		
36		C , 2		[Turkey]		
37		C , 3		[Turtle]		
38		C , 4		[Vole]		
39		C , 5		[Wallaby]		
40		C , 6		Acinonyx jubatus		
41		C , 7		Actenopsylla suavis		
42		C , 8		Adoratopsylla intermedia		
43		C , 9		Aetheca thamba		
44		C , 10		Aetheca wagneri		
45		C , 11		Ailuropoda melanoleucus		
46		C , 12		Ailurus fulgens		
47		C , 13		Alces alces		

	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG
1	Container	Units	SPHL Name								
2	Cell Preparation Tube (CPT)	%	AK State Public Health Lab, State Health Department								
3	Centrifuge tube	% v/v	AL Dept. of Public Health Bureau of Clinical Laboratories								
4	Citrate tubes (Yellow top)	% w/w	AR Dept. of Health-PHL, Clinical Micro Lab								
5	Cyto-Chex BCT	%Label Cl	AR Dept. of Health-PHL, Molecular Diagnostics								
6	DBS Card	/100ml	AR Dept. of Health-PHL, TB/Mycology Lab								
7	Matrix tube	/ml	AR Dept. of Health-PHL, Zoonotic Disease Section								
8	Microcentrifuge Tube	API	AR Dept. of Health-PHL/Chemical Terrorism								
9	PaxGene Blood DNA tubes	Atm	AR Dept. of Health-Pub. Health Lab, Immunology Lab								
10	Plasma Preparation Tube (PPT)	C	AR Dept. of Health-Public Health Lab								
11	Red top tube	cc	AUS-Centre for ID and Microbiology Lab Services								
12	Screw Cap Tube	Cells	AZ SPHL, Arizona Department of Health Services								
13	Serum Separation Tube (SST)	CFU/g	CA-LAC+USC Medical Center								
14	Specimen Transport Tube	CFU/kg	CA-Los Angeles County Public Health Laboratory								
15	Swab sleeve	CFU/m3	CAN-British Columbia PH Micro and Ref. Lab, PHSA, Parasitology Sec								
16	Tempus Blood RNA	CFU/mg	CAN-British Columbia PH Microbiology and Ref. Laboratory								
17	Thin Prep	CFU/mL	CAN-Cadham Provincial Lab								
18		cm	CAN-Natl Reference Centre for Parasitology (NRCP)								
19		COL/GM	CAN-PH Agency of Canada, National Microbiology Lab								
20		Copies/mL	CAN-Public Health Agency of Canada, Zoonotic and Special Pathogens Division								
21		CT	CAN-The Toronto Hospital, Tropical Disease Unit								
22		day	CAP-College of American Pathologists								
23		deg rot	CA-Placer County Public Health Laboratory								
24		each	CA-Santa Clara County Public Health Laboratory								
25		F	CA-Veterans Affairs Palo Alto Healthcare System								
26		Fiber/cc	CDC Occupational Health Clinic								
27		g	CDPH, Microbial Diseases Laboratory								
28		g/L	CDPH, Viral and Rickettsial Disease Laboratory								
29		g/mL	CDPH-Vector-Borne Disease Section								
30		gallon	CDPH-Vector-Borne Disease Section - Ontario								
31		gm/dL	CO Dept. of Public Health and Environment, Lab Services Division								
32		hm/cell	COL-Instituto Nacional de Salud								
33		hr	CO-United States Olympic Committee								
34		Index Value	CSTOR Public Health Lab								
35		ISR	CT-Dr. Katherine A. Kelley State Public Health Lab								
36		iu/L	DC - Peace Corps Headquarters								
37		IU/mL	DC -Bureau of Medical Services , US Dept. of State								
38		K	DC Public Health Lab/ Dept. of Forensic Sciences								
39		kg	DC-The Parasitology Laboratory of Washington								
40		Kit	DE Public Health Laboratory								
41		km	DNK-Tech. University of Denmark, Natl Food Institute								
42		L	ETH-Public Health Institute/Virology Research Team								
43		lb	FDA-Arkansas Regional Laboratory-Denver Analyst								
44		m	FDA-Natl Center for Toxicological Research								
45		mcg/mg cre	FDA-Northeast Regional Laboratory, U.S. FDA								
46		mEq/L	FL Bur. of Public Health Laboratories-Jacksonville								
47		mg	FL Bureau of Public Health Laboratories-Miami								

	A	B	C
48		Bordetella species Study	Anaerobic spore-forming Gram-positive bacillus
49		Bordetella spp. Identification (not B. pertussis/parapertussis)	Anaerobiospirillum species
50		Borrelia burgdorferi (Lyme Disease) Serology	Anaplasma phagocytophilum
51		Borrelia Culture and Identification	Anaplasma species
52		Borrelia hermsii (Tick-borne Relapsing Fever) Serology	Angiostrongylus cantonensis
53		Borrelia Molecular Detection — Relapsing Fever	Angiostrongylus species
54		Borrelia Special Study	Apophysomyces elegans
55		Botulism Laboratory Confirmation	Arcanobacterium species
56		Botulism Special Study	Arthrobacter species
57		Brucella species Identification, Genotyping and Antimicrobial Susceptibility Testing	Arthrographis species
58		Brucella species Molecular Detection	Ascaris lumbricoides
59		Brucella species Serology	Ascaris species
60		Brucella species Study	Aspergillus calidoustus
61		Burkholderia mallei/pseudomallei Identification, Genotyping and AST	Aspergillus flavus group
62		Burkholderia mallei/pseudomallei Molecular Detection	Aspergillus fumigatus
63		Burkholderia mallei/pseudomallei Study	Aspergillus niger
64		Burkholderia pseudomallei Serology	Aspergillus species
65		Burkholderia spp. Identification (not B. mallei/pseudomallei)	Aspergillus sydowii
66		Campylobacter and Helicobacter Study	Aspergillus terreus complex
67		Campylobacter, Helicobacter, and Related Organisms Identification	Aspergillus versicolor Group
68		Campylobacter, Helicobacter, and Related Organisms Identification and Subtyping	Aureobacterium species
69		Campylobacter species Serology	Aureobasidium pullulans
70		Chagas Disease Molecular Detection	Averyella dalhousiensis
71		Chagas Disease Serology	Babesia microti
72		Chlamydia pneumoniae Molecular Detection	Babesia species
73		Chlamydia psittaci Molecular Detection	Bacillus anthracis
74		Chlamydia Species (Respiratory) Molecular Detection	Bacillus cereus
75		Chlamydia trachomatis / Neisseria gonorrhoeae - Molecular Detection Nucleic Acid	Bacillus cereus group
76		Chlamydia trachomatis LGV Molecular Detection	Bacillus megaterium
77		Chlamydia trachomatis, Genital - Study	Bacillus simplex
78		Clostridioides (Clostridium) difficile - Outbreak Strain Typing	Bacillus species
79		Clostridium perfringens Detection - Foodborne Outbreak	Bacillus subtilis
80		Corynebacterium diphtheriae Study	Bacillus thuringiensis
81		Corynebacterium diphtheriae/ulcerans/pseudotuberculosis Detection, Identification, and	Bacillus tusciae
82		Corynebacterium species Identification (not C. diphtheriae)	Bacillus vedderi
83		Coxiella burnetii Molecular Detection	Bacterium
84		Coxiella burnetii Serology	Bacteroides fragilis
85		Coxiella Special Study	Balamuthia species
86		Crimean-Congo Hemorrhagic Fever Testing	Balantidium coli
87		Cryptosporidium Special Study	Bartonella (Rochalimaea) species
88		Cyclospora Molecular Detection	Bartonella bacilliformis
89		Cysticercosis Serology	Bartonella henselae
90		Cytomegalovirus (CMV) Detection	Bartonella koehlerae
91		Cytomegalovirus (CMV) Serology	Bartonella quintana
92		Dengue Virus Detection and Serology	Basidiobolus species
93		Detection of Mycoplasma genitalium Antimicrobial Resistance Markers Study	Bifidobacterium species
94		Ebola Hemorrhagic Fever Serology and Molecular Detection	Bipolaris spicifera

	D	E	F	G	H	I	J
48				Chronic obstructive pulmonary disease			
49				Cladosporiosis			
50				Clonorchiasis			
51				Coccidioidomycosis			
52				Coccidiosis			
53				Colorado tick fever			
54				Congenital toxoplasmosis			
55				Conidiobolomycosis			
56				Conjunctivitis			
57				Croup			
58				Cryptococcosis			
59				Cryptosporidiosis			
60				Cutaneous dermatophilosis			
61				Cystic fibrosis			
62				Cysticercosis			
63				Cystitis			
64				Dehydration			
65				Dementia			
66				Dengue			
67				Dermatophytosis			
68				Diabetes			
69				Diarrhea			
70				Diphtheria			
71				Drug abuse			
72				Dysentery			
73				Ear infection			
74				Echinococcosis			
75				Ehrlichiosis			
76				Empyema			
77				Encephalitis			
78				Eosinophilia			
79				Epidemic keratoconjunctivitis (EKC)			
80				Epiglottitis			
81				Erysipelas			
82				Erythema Infectiosum			
83				Failure to thrive			
84				Fever			
85				Filariasis			
86				Food poisoning			
87				Gangrene			
88				Gastritis			
89				Gastroenteritis			
90				Geotrichosis			
91				Giardiasis			
92				Glanders			
93				Gonococcal meningitis			
94				Gonorrhea			

	K	L	M	N
48	Dairy_Cheese	Fluid_Amniotic	Honey	
49	Dairy_Ice cream	Fluid_Ascitic	Isolate	
50	Dairy_Milk	Fluid_Body	IV Medications	
51	Dairy_Yogurt	Fluid_Bronchial	IV Tubing	
52	Dialysate	Fluid_Bronchoalveolar lavage (BAL)	Jelly	
53	DNA-Deoxyribonucleic acid	Fluid_Bursa	Juice	
54	Dried blood spot (DBS)	Fluid_Cerebrospinal (CSF)	Juice, Apple	
55	Dried plasma spot	Fluid_Cyst fluid sample	Juice, Carrot	
56	Dried tube specimen (DTS)	Fluid_Drainage	Juice, Vegetable	
57	Dust	Fluid_Empyema	Meat	
58	Dust_wood	Fluid_lesion	Meat, Bear	
59	Egg	Fluid_Pericardial	Meat, Beef	
60	Endoscope	Fluid_Peritoneal	Meat, Beef, Ground_cooked	
61	Environmental swab	Fluid_Pleural	Meat, Beef, Ground_raw	
62	Eschar	Fluid_Pustule (pus)	Meat, Chicken	
63	Eschar swab	Fluid_Synovial	Meat, Ham	
64	Esophageal brushings sample	Fluid_Thoracentesis	Meat, Pork	
65	Exhaled breath condensate	Fluid_Tracheal aspirate	Meat, Sausage	
66	Exudate	Fluid_Unknown origin	Meat, Turkey	
67	Eye (Lacrimal) secretions	Fluid_Vesicle (blister)	Meat, Turkey, Ground_cooked	
68	Eye swab	Fluid_Vitreous Humor	Meat, Turkey, Ground_raw	
69	Faucet component	Fly	Meat, Veal	
70	Feed, Animal	Foreign object (body)	Meat, Venison	
71	Feed_Avian	Formalin-fixed paraffin-embedded tissue	Medical Equipment	
72	Filter	Gastric contents	Moonshine (Pruno brew)	
73	Fistula	Graft specimen from patient	Nest material	
74	Flea	Granulocyte	Nuts	
75	Fluid_Amniotic	Hair specimen	Nuts, Peanuts	
76	Fluid_Ascitic	Head	Oil	
77	Fluid_Body	Incision Site	Pellet_wood	
78	Fluid_Bronchial	Internal nose swab	Plant matter	
79	Fluid_Bronchoalveolar lavage (BAL)	Isolate	Plasmid	
80	Fluid_Bursa	Lavage cervical supernatant	P-trap	
81	Fluid_Cerebrospinal (CSF)	Lavage_cervical	Reference Strain	
82	Fluid_Cyst fluid sample	Lavage_rectal	RNA-Ribonucleic acid	
83	Fluid_Drainage	Lesion	Sample Tanker	
84	Fluid_Empyema	Louse	Sand	
85	Fluid_lesion	Lymph Node	Seafood	
86	Fluid_Pericardial	Lymph Node aspirate	Seafood, Clams	
87	Fluid_Peritoneal	Macule	Seafood, Crab	
88	Fluid_Pleural	Monocyte	Seafood, Fish	
89	Fluid_Pustule (pus)	Mucosa specimen	Seafood, Shellfish	
90	Fluid_Synovial	Mucus	Seafood, Shrimp	
91	Fluid_Thoracentesis	Nail specimen (specimen)	Seafood, Squid	
92	Fluid_Tracheal aspirate	Nasal secretions	Sediment_Water	
93	Fluid_Unknown origin	Nasal wash	Sewage	
94	Fluid_Vesicle (blister)	Nasogastric aspirate	Shower component	

	O	P	Q
48	Bone_Tibia	Right outer	TearFlo strip
49	Bone_Tibial tarsal bone (Talus)	Right posterior	Thoracentesis
50	Bone_Trochanter of femur	Right upper	Tick drag/flag
51	Brachial plexus	Right ventral	Transbronchial biopsy
52	Brain	Superficial	Transparent (Scotch) tape method (Fungi)
53	Brain fornix	Superior	Transthoracic echocardiography
54	Brain_Cerebellum	Unknown	Unknown
55	Brain_Dura mater	Upper	Vacuum
56	Brain_Frontal lobe		Venipuncture
57	Brain_Meninges		WECK-CEL
58	Brain_Occipital cortex region		Wick
59	Brain_Occipital lobe		Wipe
60	Brain_Parietal lobe		
61	Brain_Parietal lobe cortex		
62	Brain_Pons		
63	Brainstem		
64	Breast		
65	Bronchus		
66	Buccal mucosa		
67	Bursa		
68	Buttock		
69	Cardiac valve		
70	Cardiac ventricle		
71	Cardioesophageal junction		
72	Carpal canal		
73	Cecum		
74	Central nervous system		
75	Cerebellopontine angle		
76	Cerebral structure		
77	Cervical lymph node		
78	Cervix		
79	Chest		
80	Chest wall		
81	Chin		
82	Cisterna magna		
83	Colon		
84	Colon_Sigmoid		
85	Colonic epiploicae		
86	Common bile duct		
87	Conjunctiva		
88	Cornea		
89	Coronary artery		
90	Duodenal mucous membrane		
91	Duodenum		
92	Ear		
93	Ear_canal		
94	Ear_External		

AMERICAN
OVERSIGHT

	R	S
48	Transbronchial biopsy	
49	Transparent (Scotch) tape method (Fungi)	
50	Transthoracic echocardiography	
51	Unknown	
52	Vacuum	
53	Venipuncture	
54	WECK-CEL	
55	Wick	
56	Wipe	
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		
76		
77		
78		
79		
80		
81		
82		
83		
84		
85		
86		
87		
88		
89		
90		
91		
92		
93		
94		

AMERICAN
OVERSIGHT

	T	U	V
48	Heart Infusion agar with 5% rabbit blood		
49	Heart Infusion Broth (HIB)		
50	Hektoen Enteric Agar		
51	Heparin		
52	K2 EDTA		
53	K3 EDTA		
54	King B broth		
55	Lithium Heparin		
56	Liver Veal agar		
57	Loeffler's agar		
58	Low Viscosity polyvinyl Alcohol (LV-PVA)		
59	Low Viscosity polyvinyl Alcohol with 10% Formalin (LV-PVA 10% Formalin)		
60	Lowenstein-Jensen (LJ) medium		
61	Lowenstein-Jensen (LJ) w/Fe		
62	Lowenstein-Jensen (LJ) w/NaCl		
63	Lysis buffer		
64	MacConkey Broth (MAC)		
65	MacConkey Sorbitol broth		
66	Martin Lewis (ML) agar		
67	MGIT Broth		
68	Middlebrook 7H10 agar		
69	Middlebrook 7H11 agar		
70	Middlebrook 7H9 broth		
71	Minimal Essential Medium + 10% Fetal Calf Serum (MEM-10)		
72	Modified Cary Blair medium		
73	Modified Thayer Martin (MTM) agar		
74	Motility medium		
75	Mycobacteria Growth Indicator Tube (MGIT)		
76	Mycoplasma SP4 Broth Medium		
77	Mycosel Agar		
78	Neopeptone agar		
79	No additive		
80	Nutrient Agar		
81	Paraffin		
82	Polyvinyl alcohol_Copper (CU-PVA)		
83	Polyvinyl alcohol_Copper (mod) & 10% formalin.		
84	Polyvinyl alcohol_Zinc sulphate (Zn-PVA)		
85	Polyvinyl alcohol_Zinc sulphate (Zn-PVA) + 10% Formalin		
86	Potassium hydroxide (KOH)		
87	Potassium hydroxide (KOH) + chloroform		
88	Potassium oxalate/sodium fluoride		
89	Potato Dextrose Agar (PDA)		
90	PreservCyt		
91	Regan-Lowe Transport medium		
92	Sabouraud Brain Heart Infusion Agar (SBHIA)		
93	Sabouraud Brain Heart Infusion Agar with Blood (SBHIBA)		
94	Sabouraud dextrose agar		

	W	X	Y	Z
48	North Carolina	Chile	Clofazimine	
49	North Dakota	China	Cloxacillin	
50	Northern Mariana Islands	Christmas Island	Colistin	
51	Ohio	Cocos (Keeling) Islands	Corticosteroids	
52	Oklahoma	Colombia	Co-trimoxazole (Sulfamethoxazole-trimethoprim)	
53	Oregon	Comoros	Cycloserine	
54	Palau	Congo	Dapsone	
55	Palmyra Atoll	Congo, The Democratic Republic of the	Dicloxacillin	
56	Pennsylvania	Cook Islands	Doxycycline	
57	Puerto Rico	Costa Rica	Enoxacin	
58	Rhode Island	Cote D'Ivoire	Erythromycin	
59	South Carolina	Croatia	Ethambutol	
60	South Dakota	Cuba	Ethionamide	
61	Tennessee	Cyprus	Fusidic acid	
62	Texas	Czech Republic	Gentamicin	
63	Utah	Denmark	Imipenem	
64	Vermont	Djibouti	Immune globulin immunization	
65	Virgin Islands of the U.S.	Dominica	Isoniazid	
66	Virginia	Dominican Republic	Kanamycin	
67	Wake Island	Ecuador	Levofloxacin	
68	Washington	Egypt	Lincomycin	
69	West Virginia	El Salvador	Lysostaphin	
70	Wisconsin	Equatorial Guinea	Lysostaphin (Glycyl-glycine endopeptidase)	
71	Wyoming	Eritrea	Mecillinam	
72		Estonia	Mercury	
73		Ethiopia	Methicillin	
74		Falkland Islands (Malvinas)	Metronidazole	
75		Faroe Islands	Mezlocillin	
76		Federated States of Micronesia	Minocycline	
77		Fiji	Moxalactam	
78		Finland	Moxifloxacin	
79		France	Nafcillin	
80		French Guiana	Nalidixic acid	
81		French Polynesia	Natural penicillin	
82		French Southern Territories	Neomycin	
83		Gabon	Netilmicin	
84		Gambia	Nitrofurantoin	
85		Georgia	Norfloxacin	
86		Germany	Novobiocin	
87		Ghana	Nystatin	
88		Gibraltar	Oleandomycin	
89		Greece	Oseltamivir phosphate (Tamiflu)	
90		Greenland	Other	
91		Grenada	Oxacillin	
92		Guadeloupe	Oxytetracycline	
93		Guam	Palivizumab (Synagis)	
94		Guatemala	Piperacillin	

	AA	AB	AC	AD
48		Bat_Long-tongued (Genus Choeronycteris)	Antilocapra americana	
49		Bat_Macleay's Moustached	Antrozous pallidus	
50		Bat_Mexican Long-nosed	Aotus (Genus)	
51		Bat_Mexican Long-tongued	Aplodontia rufa	
52		Bat_Mexican Myotis	Ara (Genus)	
53		Bat_Myotis (Genus Myotis)	Arborimus albipes	
54		Bat_Northern Yellow	Arborimus longicaudus	
55		Bat_Pallid (Desert)	Arctictis binturong	
56		Bat_Parnell's Moustached	Artibeus jamaicensis	
57		Bat_Pocketed Free-tailed	Arvicola terrestris	
58		Bat_Rodriguez Flying Fox	Atelerix albiventris	
59		Bat_Seminole	Aves (Class)	
60		Bat_Silver-haired	Bandicota bengalensis	
61		Bat_Sooty Moustached	Bassariscus astutus	
62		Bat_Southeastern Myotis	Bassariscus sumichrasti	
63		Bat_Southern Yellow	Bison bison	
64		Bat_Southwestern Myotis	Blarina (Genus)	
65		Bat_Spear-nosed (Genus Phyllostomus)	Boa constrictor subsp constrictor	
66		Bat_Spear-nosed, Greater	Bolomys lasiurus	
67		Bat_Spotted	Bos (Genus)	
68		Bat_Townsend's Big-eared	Bos taurus	
69		Bat_Underwoods Mastiff	Brachylagus idahoensis	
70		Bat_Vampire	Bubo virginianus	
71		Bat_Wagner's Mastiff	Callithrix (Genus)	
72		Bat_Waterhouses Leaf-nosed	Callithrix kuhlii	
73		Bat_Western Mastiff	Camelus (Genus)	
74		Bat_Western Pipistrelle	Camelus bactrianus	
75		Bat_Western Red	Camelus dromedarius	
76		Bat_Western Small Footed	Canis latrans	
77		Bat_Yuma Myotis	Canis lupus	
78		Bear (Genus Ursus)	Canis lupus subsp familiaris	
79		Bear_Black	Canis lupus subsp rufus	
80		Bear_Brown (Grizzly)	Canis lupus X Canis lupus familiaris hybrid	
81		Bear_Grizzly	Capra (Genus)	
82		Bear_Polar	Caracal caracal	
83		Beaver_American	Carduelis flammea	
84		Beaver_Mountain	Carduelis spinus	
85		Binturong	Castor canadensis	
86		Bird (Class Aves)	Cavia porcellus	
87		Bison_American	Caviidae (Family)	
88		Bobcat	Cebus (Genus)	
89		Cacomistle	Cebus apella	
90		Camel (Genus)	Cephalophus (Genus)	
91		Camel_Arabian (Dromedary-One humped)	Ceratotherium simum (organism)	
92		Camel_Bactrian (Two- humped)	Cercopithecus neglectus	
93		Caracal	Cervidae (Family)	
94		Caribou, deer, moose, elk (Family Cervidae)	Cervus elaphus	

WA-KINGCO-20-0492-G-000052

	AE	AF	AG	AH
48	Flea (Catallagia charlottensis)	Atyphloceras multidentatus		
49	Flea (Catallagia decipiens)	Atyphloceras tancitari		
50	Flea (Catallagia jellisoni)	Baculomeris altmani		
51	Flea (Catallagia mathesoni)	Baculomeris schmidtii		
52	Flea (Catallagia neweyi)	Callistopsyllus terinus campestris		
53	Flea (Catallagia sculleni rutherfordi)	Callistopsyllus terinus deuterus		
54	Flea (Catallagia sculleni)	Callistopsyllus terinus terinus		
55	Flea (Catallagia sp. (Genus))	Carteretta carteri		
56	Flea (Catallagia wymani)	Carteretta clavata		
57	Flea (Cediopsylla inaequalis interrupta)	Catallagia arizonae		
58	Flea (Cediopsylla inaequalis)	Catallagia borealis		
59	Flea (Cediopsylla simplex)	Catallagia calisherii		
60	Flea (Cediopsylla tepolita)	Catallagia charlottensis		
61	Flea (Ceratophyllus adustus)	Catallagia decipiens		
62	Flea (Ceratophyllus affinis)	Catallagia jellisoni		
63	Flea (Ceratophyllus altus)	Catallagia mathesoni		
64	Flea (Ceratophyllus arcuegens)	Catallagia neweyi		
65	Flea (Ceratophyllus celsus)	Catallagia sculleni		
66	Flea (Ceratophyllus ciliatus)	Catallagia sculleni rutherfordi		
67	Flea (Ceratophyllus coahuilensis)	Catallagia sp. (Genus)		
68	Flea (Ceratophyllus garei)	Catallagia wymani		
69	Flea (Ceratophyllus gilvus)	Cediopsylla inaequalis		
70	Flea (Ceratophyllus idius)	Cediopsylla inaequalis interrupta		
71	Flea (Ceratophyllus lari)	Cediopsylla simplex		
72	Flea (Ceratophyllus lunatus tundrensis)	Cediopsylla tepolita		
73	Flea (Ceratophyllus niger)	Ceratophyllus adustus		
74	Flea (Ceratophyllus pelecani)	Ceratophyllus affinis		
75	Flea (Ceratophyllus petrochelidoni)	Ceratophyllus altus		
76	Flea (Ceratophyllus rauschi)	Ceratophyllus arcuegens		
77	Flea (Ceratophyllus riparius)	Ceratophyllus celsus		
78	Flea (Ceratophyllus rossittensis)	Ceratophyllus ciliatus		
79	Flea (Ceratophyllus scopulorum)	Ceratophyllus coahuilensis		
80	Flea (Ceratophyllus styx)	Ceratophyllus garei		
81	Flea (Ceratophyllus vison)	Ceratophyllus gilvus		
82	Flea (Chaetopsylla floridensis)	Ceratophyllus idius		
83	Flea (Chaetopsylla lotoris)	Ceratophyllus lari		
84	Flea (Chaetopsylla nidicola)	Ceratophyllus lunatus tundrensis		
85	Flea (Chaetopsylla setosa)	Ceratophyllus niger		
86	Flea (Chaetopsylla stewarti)	Ceratophyllus pelecani		
87	Flea (Chaetopsylla tuberculiceps)	Ceratophyllus petrochelidoni		
88	Flea (Conorhinopsylla stanfordi)	Ceratophyllus rauschi		
89	Flea (Coptopsylla lamellifer)	Ceratophyllus riparius		
90	Flea (Corrodopsylla barrerae)	Ceratophyllus rossittensis		
91	Flea (Corrodopsylla curvata)	Ceratophyllus scopulorum		
92	Flea (Corrodopsylla hamiltoni)	Ceratophyllus styx		
93	Flea (Corypsylla jordani)	Ceratophyllus vison		
94	Flea (Corypsylla kohlsi)	Chaetopsylla floridensis		

	AI	AJ	AK	AL
48		Local ID No.		
49		Local/Other Health Department		
50		Manufacturer		
51		Medical Center		
52		Medical Office		
53		Medical Record #		
54		Medical School		
55		Military		
56		NHanes		
57		NIH		
58		Pathology		
59		Patient ID		
60		Patient Initials		
61		Pharmaceutical		
62		PHL		
63		Physician		
64		Primary Sub ID		
65		Proficiency Testing		
66		Project		
67		Regional Health Department		
68		Secondary Sub ID		
69		Serial Sample No.		
70		Serotype		
71		Serotype ID		
72		Serum Bank		
73		Site		
74		SPB Job #		
75		Specimen ID		
76		Specimen No.		
77		State Health Department		
78		Strain ID		
79		Study		
80		Study ID		
81		University		
82		University Medical Center		
83		Unknown		
84		USDA		
85		USDA/APHIS/WS		
86		Vaccine Draw		
87		Vaccines		
88		Veterinary		
89		WHO		
90				
91				
92				
93				
94				

	AM	AN	AO	AP
48			Bat_Long-nosed, Southern	Leptonycteris curasoae
49			Bat_Long-tongued (Genus Choeronycteris)	Choeronycteris (Genus)
50			Bat_Macleay's Moustached	Pteronotus macleayi
51			Bat_Mexican Long-nosed	Leptonycteris nivalis
52			Bat_Mexican Long-tongued	Choeronycteris mexicana
53			Bat_Mexican Myotis	Myotis vivesi
54			Bat_Myotis (Genus Myotis)	Myotis (Genus)
55			Bat_Northern Yellow	Lasiurus intermedius
56			Bat_Pallid (Desert)	Antrozous pallidus
57			Bat_Parnell's Moustached	Pteronotus parnelli
58			Bat_Pocketed Free-tailed	Nyctinomops femorosaccus
59			Bat_Rodriguez Flying Fox	Pteropus rodricensis
60			Bat_Seminole	Lasiurus seminolus
61			Bat_Silver-haired	Lasionycteris noctivagans
62			Bat_Sooty Moustached	Pteronotus quadridens
63			Bat_Southeastern Myotis	Myotis austroriparius
64			Bat_Southern Yellow	Lasiurus ega
65			Bat_Southwestern Myotis	Myotis auriculus
66			Bat_Spear-nosed (Genus Phyllostomus)	Phyllostomus (Genus)
67			Bat_Spear-nosed, Greater	Phyllostomus hastatus
68			Bat_Spotted	Euderma maculatum
69			Bat_Townsend's Big-eared	Plecotus townsendii
70			Bat_Underwoods Mastiff	Eumops underwoodi
71			Bat_Vampire	Desmodus rotundus
72			Bat_Wagner's Mastiff	Eumops glacinus
73			Bat_Waterhouses Leaf-nosed	Macrotus waterhousii
74			Bat_Western Mastiff	Eumops perotis
75			Bat_Western Pipistrelle	Pipistrellus hesperus
76			Bat_Western Red	Lasiurus blossevillei
77			Bat_Western Small Footed	Myotis ciliolabrum
78			Bat_Yuma Myotis	Myotis yumanensis
79			Bear (Genus Ursus)	Ursus (Genus)
80			Bear_Black	Ursus americanus
81			Bear_Brown (Grizzly)	Ursus arctos
82			Bear_Grizzly	Ursus arctos subbsp horribilis
83			Bear_Polar	Ursus maritimus
84			Beaver_American	Castor canadensis
85			Beaver_Mountain	Aplodontia rufa
86			Binturong	Arctictis binturong
87			Bird (Class Aves)	Aves (Class)
88			Bison_American	Bison bison
89			Black fly (Family Simuliidae)	Family Simuliidae
90			Black fly (Simulium nigricoxum)	Simulium nigricoxum
91			Blow fly	[Blow fly]
92			Bobcat	Lynx rufus
93			Bot fly (Family Oestridae)	Family Oestridae
94			Cacomistle	Bassariscus sumichrasti

	AQ	AR	AS	AT	AU	AV
48		C , 14		Amaradix bitterrootensis		
49		C , 15		Amaradix euphorbi		
50		D , 1		Amblyomma americanum		
51		D , 2		Amblyomma dubitatum		
52		D , 3		Amblyomma imitator		
53		D , 4		Amblyomma inornatum		
54		D , 5		Amblyomma interandinum		
55		D , 6		Amblyomma maculatum		
56		D , 7		Amblyomma mixtum		
57		D , 8		Amblyomma ovale		
58		D , 9		Amblyomma patinoi		
59		D , 10		Amblyomma sculptum		
60		D , 11		Amblyomma spp.		
61		D , 12		Amblyomma tonelliae		
62		D , 13		Amblyomma triste		
63		D , 14		Amblyomma tuberculatum		
64		D , 15		Amblyomma variegatum		
65		E , 1		Ammospermophilus harrisi		
66		E , 2		Ammospermophilus insularis		
67		E , 3		Ammospermophilus interpres		
68		E , 4		Ammospermophilus leucurus		
69		E , 5		Ammospermophilus nelsoni		
70		E , 6		Amphibia (Class)		
71		E , 7		Amphipsylla sibirica		
72		E , 8		Amphipsylla sibirica pollionis		
73		E , 9		Amphipsylla sibirica washingtona		
74		E , 10		Anomiopsyllus amphilbolus		
75		E , 11		Anomiopsyllus durangoensis		
76		E , 12		Anomiopsyllus falsicalifornicus		
77		E , 13		Anomiopsyllus martini		
78		E , 14		Anomiopsyllus montanus		
79		E , 15		Anomiopsyllus nidiophilus		
80		F , 1		Anomiopsyllus novomexicanensis		
81		F , 2		Anomiopsyllus nudatus		
82		F , 3		Anomiopsyllus oaxacae		
83		F , 4		Anomiopsyllus sinuatus		
84		F , 5		Anomiopsyllus sp (Genus)		
85		F , 6		Anomiopsyllus traubi		
86		F , 7		Anomiopsyllus walkeri		
87		F , 8		Antilocapra americana		
88		F , 9		Antrozous pallidus		
89		F , 10		Aotus (Genus)		
90		F , 11		Aplodontia rufa		
91		F , 12		Ara (Genus)		
92		F , 13		Arborimus albipes		
93		F , 14		Arborimus longicaudus		
94		F , 15		Arctictis binturong		

	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG
48		mg/dl	FL Bureau of Public Health Laboratories-Pensacola								
49		mg/g	FL Bureau of Public Health Laboratories-Tampa								
50		mg/inch	FL Department of Health-Bureau of Epidemiology								
51		mg/kg	FRA-Institut Pasteur, Enteric Bacterial Pathogens Unit								
52		mg/L	GA Department of Public Health Laboratory								
53		mg/mL	HI Dept. of Health, State Laboratories Division								
54		mg/Tab	HTI-Laboratoire National de Sante Publique								
55		mg/yr	IA State Hygienic Laboratory								
56		microg/dl	IA-Natl Ctrs. for Animal Hlth, Nat. Vet Svcs. Lab								
57		Microg/fts	ID Bureau of Laboratories								
58		microg/L	IL Department of Public Health Chicago Laboratory								
59		min	IL Dept. of Public Health Carbondale Laboratory								
60		mL	IL Dept. of Public Health Springfield Laboratory								
61		mm	IN State Department of Health Laboratory Services								
62		MPN/100mL	KS Health and Environmental Laboratories								
63		N/A	KY State Public Health Lab								
64		newtest	LA Office of Public Health Laboratories								
65		nM/mg crea	MA State Public Health Laboratory								
66		No Units	MA-Tufts Medical Center, Send-out Department								
67		NTU	MD DOH Laboratories Administration								
68		PD	ME Health and Environmental Testing Laboratory								
69		pg/cell	MI Dept. of Community Health-Bureau of Laboratories								
70		pH	MN PHL Division, Minnesota Department of Health								
71		pint	MO State Public Health Laboratory								
72		ppb	MS Public Health Laboratory								
73		ppm	MT Public Health Laboratory								
74		ppt	NC State Laboratory of Public Health								
75		PSI	ND Dept. of Health Laboratory Services-Microbiology								
76		quart	NE Public Health Laboratory								
77		RNA/ml	NGA-Nigeria Centre For Disease Control								
78		sec	NH Dept. of Health and Human Services Public Health Labs								
79		Spots(s)	NIH Clinical Center, Dept. of Laboratory Medicine								
80		u/g	NJ Public Health and Environmental Laboratories								
81		U/L	NM Dept. Health, Scientific Laboratory Division								
82		U/mg	NV State Public Health Laboratory								
83		ug/dl	NV-Southern Nevada Health Dist. Office of Epidemiology								
84		ug/kg	NV-Southern Nevada Public Health Laboratory								
85		ug/L	NYC Department of Health and Mental Hygiene								
86		UIU/ml	NY-Jacobi Med. Ctr.-Parasitic and Trop. Disease Lab								
87		uL	NYSDOH Wadsworth Center								
88		um	NYSDOH Wadsworth Center, Bacteriology Lab								
89		umhos/cm	NYSDOH Wadsworth Center, Biodefense Lab								
90		umol/L	NYSDOH Wadsworth Center, Bloodborne Virus Lab								
91		Unit	NYSDOH Wadsworth Center, Diag. Immunology Lab								
92		Units	NYSDOH Wadsworth Center, Mycology Lab								
93		yr	NYSDOH Wadsworth Center, Parasitology Lab								
94			NYSDOH Wadsworth Center, Tuberculosis Lab								

	A	B	C
95		Echinococcosis Serology	Blastococcus species
96		Ehrlichia Molecular Detection	Blastocystis species
97		Ehrlichia Serology	Blastomyces dermatitidis
98		Ehrlichia Special Study	Blastomyces species
99		Elizabethkingia species Special Study	Bordetella avium
100		Entamoeba histolytica/dispar Molecular Detection	Bordetella bronchiseptica
101		Enteric Isolation - Primary Specimen	Bordetella holmesii
102		Enteric Special Study	Bordetella parapertussis
103		Enterovirus Detection and Identification	Bordetella pertussis
104		Enterovirus-D68 Detection	Bordetella species
105		Entomology Special Study	Borrelia burgdorferi
106		Epstein Barr Virus (EBV) Detection	Borrelia hermsii
107		Escherichia and Shigella Identification, Serotyping, and Virulence Profiling	Borrelia recurrentis
108		Escherichia and Shigella study	Borrelia species
109		Escherichia coli (STEC) Serology (not serotyping)	Bosea species
110		Escherichia coli and Shigella Subtyping	Botryomyces caespitosus
111		Fascioliasis Serology	Bovine papular stomatitis virus
112		Filariasis Serology	Brachyspira species
113		Francisella tularensis Culture and Identification	Brevibacterium species
114		Francisella tularensis Serology	Brochothrix thermosphacta
115		Francisella tularensis Special Study	Brucella abortus
116		Fungal Identification	Brucella melitensis
117		Fungal Serology - Histoplasma, Blastomyces, Coccidioides	Brucella species
118		Fungal Serology - Paracoccidioides	Brucella suis
119		Fungal Study	Brugia malayi
120		Gastroenteritis Virus Special Study	Brugia species
121		Genital Ulcer Disease (Syphilis, Chancroid, Herpes) Molecular Detection	Burkholderia cenocepacia
122		Gram Negative Bacillus (non-enteric/nonfermenter) Identification	Burkholderia cepacia
123		Gram Positive Bacillus Identification	Burkholderia cepacia complex
124		Gram-negative Coccus (not Gonococcus or meningococcus), Neisseria species, and	Burkholderia gladioli
125		Haemophilus ducreyi Molecular Detection Study	Burkholderia mallei
126		Haemophilus influenzae Identification and Serotyping	Burkholderia pseudomallei
127		Haemophilus influenzae Surveillance	Burkholderia species
128		Haemophilus species (not H. influenza/ H. ducrey) Identification	Burkholderia stabilis
129		Hantavirus Testing	Burkholderia thailandensis
130		Healthcare-Associated Infections (HAI) - Outbreak Strain Identification (ID) and	Buttiauxella agrestis
131		Helicobacter pylori Special Study	Campylobacter coli
132		Hendra Hemorrhagic Fever Serology and Molecular Detection	Campylobacter fetus
133		Hepatitis A NAT and Genotyping	Campylobacter gracilis
134		Hepatitis A Serology	Campylobacter helveticus
135		Hepatitis B Genotyping	Campylobacter insulaenigrae
136		Hepatitis B Serology and Quantitative PCR	Campylobacter jejuni
137		Hepatitis C Serology, Quantitative PCR, and Genotyping	Campylobacter jejuni subsp jejuni
138		Hepatitis D Serology, NAT and Genotyping	Campylobacter species
139		Hepatitis E Serology, NAT and Genotyping	Campylobacter upsaliensis
140		Hepatitis Special Study	Candida albicans
141		Hepatitis Surveillance	Candida auris
142		Herpes Simplex Virus 1/2 Detection	Candida dubliniensis

WA KINGCO-20-0492-C-000058

	D	E	F	G	H	I	J
95				Guillain-Barre syndrome			
96				Hemolytic Uremic Syndrome (HUS)			
97				Hepatic abscess			
98				Hepatic cyst			
99				Hepatomegaly			
100				Herpangina			
101				Histoplasmosis			
102				Human Immunodeficiency Virus (HIV) infection			
103				Human T-Lymphotropic Virus (HTLV) infection			
104				Hydrops fetalis			
105				Hypertension			
106				Immunocompromised host disease			
107				Impetigo			
108				Infantile botulism			
109				Infectious mononucleosis			
110				Influenza			
111				Influenza - Avian H5N1			
112				Influenza - Novel H1N1			
113				Influenza A infection			
114				Influenza B infection			
115				Joint pain			
116				Kawasaki disease syndrome			
117				Kennel Cough			
118				Laryngitis			
119				Leishmaniasis			
120				Leprosy			
121				Listeriosis			
122				Lockjaw			
123				Louse-borne relapsing fever			
124				Lower respiratory illness			
125				Lyme disease			
126				Lymphadenopathy			
127				Lymphogranuloma venereum			
128				Malaria			
129				Malnutrition			
130				Measles			
131				Mediterranean Spotted Fever			
132				Melioidosis			
133				Meningitis			
134				Meningococcemia			
135				Molluscum contagiosum			
136				Mucormycosis			
137				Mumps			
138				Mycetoma			
139				Mycoses			
140				Myocarditis			
141				Neurologic disease			
142				Neurosyphilis			

	K	L	M	N
95	Fluid_Vitreous Humor	Nasopharyngeal (Throat) washings	Soil	
96	Fly	Nasopharyngeal and Oropharyngeal Swab	Solution_Contact lens	
97	Food	Nasopharyngeal aspirate	Solution_Disinfectant	
98	Foreign object (body)	Nasopharyngeal swab	Soup	
99	Formalin-fixed paraffin-embedded tissue	Nodule	Spice	
100	Formula, Infant	Oral swab	Spice, Peppers	
101	Formula, Infant_ Liquid	Papule	Spread	
102	Formula, Infant_Powdered	Peripheral Blood Mononuclear Cell	Spread, Peanut butter	
103	Formula, Infant_Soy	Peritoneal dialysate	Stew	
104	Fruit, Papaya	Peritoneal dialysis solution	Stool Suspension	
105	Gastric contents	Pernasal swab (Animal)	Surface wet wipe	
106	Graft specimen from patient	Pharyngeal (Throat) washings	Surface Wipe	
107	Grain	Plasma	Swab	
108	Grain, Bread	Plasmid	Swab_Drag	
109	Grain, Cereal	Pus	Synthetic	
110	Grain, Rice	Rectal swab	TNA-Nucleic acid (Total)	
111	Granulocyte	Red Blood Cell	Tubing	
112	Hair specimen	Reference Strain	Unknown	
113	Head	RNA-Ribonucleic acid	Unknown drink	
114	HEPA-sock	Saliva	Unknown food	
115	Honey	Semen	Vacuum cleaner bag	
116	Incision Site	Serum specimen	Vacuum cleaner filter	
117	Internal nose swab	Sinus	Vegetable	
118	Isolate	Skin swab	Vegetable, Beans	
119	IV Medications	Skin_Pustule	Vegetable, Cabbage	
120	IV Tubing	Skin_Vesicle	Vegetable, Lettuce	
121	Jelly	Smear	Vegetable, Spinach	
122	Juice	Specimen from burn injury	Vegetable, Sprouts	
123	Juice, Apple	Spleen specimen	Vegetable, Sprouts_Alfalfa	
124	Juice, Carrot	Sputum	Vegetable, Tomato	
125	Juice, Vegetable	Sputum_coughed	Wash_Fluid	
126	Lavage cervical supernatant	Sputum_induced	Wash_Carcass	
127	Lavage_cervical	Stool	Wastewater	
128	Lavage_rectal	Stool Suspension	Water (environmental sample)	
129	Lesion	Swab	Water Concentrate	
130	Louse	Sweat	Water_Aquarium	
131	Lymph Node	Synthetic	Water_Canal	
132	Lymph Node aspirate	Throat (Oropharyngeal) swab	Water_Irrigation	
133	Macule	Tick	Water_Irrigation pond	
134	Meat	Tissue	Water_Lake	
135	Meat, Bear	Tissue_Abscess	Water_Pond	
136	Meat, Beef	Tissue_Adipose	Water_Pool Filter Backwash	
137	Meat, Beef, Ground_cooked	Tissue_Brain	Water_Purified	
138	Meat, Beef, Ground_raw	Tissue_Cyst	Water_River	
139	Meat, Chicken	Tissue_Endometrium	Water_Run-off	
140	Meat, Ham	Tissue_Heart	Water_Swimming pool	
141	Meat, Pork	Tissue_Kidney	Water_Tap	
142	Meat, Sausage	Tissue_Liver	Water_Well	

WA KINGCO 20-0492-G-000060

	O	P	Q
95	Ear_Middle		
96	Elbow		
97	Endocardium		
98	Endometrium		
99	Environment		
100	Epidural space		
101	Epiglottis		
102	Esophagus		
103	Eye		
104	Eye_Orbit		
105	Eye_Vitreous body		
106	Eyebrow		
107	Eyelid		
108	Face		
109	Fallopian tube		
110	Fetus		
111	Finger		
112	Finger_Index		
113	Finger_Little		
114	Finger_Middle (Second)		
115	Finger_Ring (Third)		
116	Fingernail		
117	Flank		
118	Foot		
119	Foot_Sole		
120	Forehead		
121	Foreskin of penis		
122	Gallbladder		
123	Glabella		
124	Gland_Adrenal		
125	Gland_Parotid		
126	Gland_Salivary		
127	Gland_Submandibular salivary		
128	Groin		
129	Hand		
130	Head		
131	Heart		
132	Heart_Mitral valve leaflet		
133	Heel		
134	Hip region		
135	Hippocampus		
136	Ileocecal valve		
137	Ileum		
138	Iliac crest		
139	Inguinal lymph node		
140	Interventricular septum		
141	Intervertebral disc		
142	Intestine (Bowel)		

	T	U	V
95	Sabouraud dextrose agar + Gentamicin+Chloramphenicol		
96	Sabouraud dextrose agar, Emmons + Gentamicin+Chloramphenicol		
97	Sabouraud' s Dextrose agar + Chloramphenicol+Cyclohexamine		
98	Sabouraud' s Dextrose agar, Emmons + Chloramphenicol+Cyclohexamine		
99	Saline_Normal		
100	Silica Clot Activator		
101	Snap Frozen		
102	Sodium Acetate Formalin (SAF) Fixative		
103	Sodium Azide		
104	Sodium benzoate_ calcium propionate		
105	Sodium Citrate		
106	Sodium fluoride		
107	Sodium fluoride/Na2 EDTA		
108	Sodium polyanethol sulfonate (SPS)		
109	Sodium thiosulfate		
110	Specimen Transport Medium (STM)		
111	Streck Cell Preservative		
112	Stuart's Transport Medium		
113	SurePath		
114	Thioglycolate broth		
115	Thrombin-based clot activator		
116	Tissue culture_MDCK		
117	Tissue Culture_R-Mix		
118	Total-Fix transport vial		
119	Tryptic Soy Broth (TSB)		
120	Trypticase Soy Agar (TSA)		
121	Tryptone glucose yeast extract (TGY) agar		
122	Universal transport medium		
123	Unknown		
124	Veal agar		
125	Venketraman-Ramakrishnan Transport Medium		
126	VersaTREK Broth		
127	VersaTREK Myco		
128	Viral Transport Medium (VTM)		
129	Wang's Semisolid Medium		
130			
131			
132			
133			
134			
135			
136			
137			
138			
139			
140			
141			
142			



	W	X	Y	Z
95		Guernsey	Plasmapheresis	
96		Guinea	Polymyxin B	
97		Guinea-Bissau	Polymyxins	
98		Guyana	Pyrazinamide	
99		Haiti	Pyridostigmine	
100		Heard Island and McDonald Islands	Ribavirin	
101		Holy See (Vatican City State)	Rifampin	
102		Honduras	Rimantadine	
103		Hong Kong	Rosoxacin	
104		Hungary	Sisomicin	
105		Iceland	Spectinomycin	
106		India	Streptomycin	
107		Indonesia	Sulbactam	
108		Iran, Islamic Republic of	Sulfadiazine	
109		Iraq	Sulfamethoxazole	
110		Ireland	Sulfisoxazole	
111		Isle of Man	Sulfonamide	
112		Israel	Sulphathiazole	
113		Italy	Tetracycline	
114		Jamaica	Thiamphenicol - chemical	
115		Japan	Ticarcillin	
116		Jersey	Tobramycin	
117		Jordan	Trifluridine	
118		Kazakhstan	Trimethoprim	
119		Kenya	Unknown	
120		Kiribati	Valacyclovir	
121		Korea, Democratic People's Republic of	Vancomycin	
122		Korea, Republic of	Viomycin	
123		Kuwait	Zanamivir (Relenza)	
124		Kyrgyzstan		
125		Lao Peoples Democratic Republic		
126		Latvia		
127		Lebanon		
128		Lesotho		
129		Liberia		
130		Libyan Arab Jamahiriya		
131		Liechtenstein		
132		Lithuania		
133		Luxembourg		
134		Macao		
135		Macedonia, The Former Yugoslav Republic of		
136		Madagascar		
137		Malawi		
138		Malaysia		
139		Maldives		
140		Mali		
141		Malta		
142		Marshall Islands		

	AA	AB	AC	AD
95		Cat_Domestic	Cervus elaphus subsp nannodes	
96		Cat_Little spotted (Oncilla)	Cervus nippon	
97		Cat_Ring-tailed	Chaetodipus arenarius	
98		Cat_Wild (Montes de gato)	Chaetodipus artus	
99		Cattle	Chaetodipus baileyi	
100		Cavy (Family)	Chaetodipus californicus	
101		Cavy_Rock	Chaetodipus fallax	
102		Cavy_Spix's Yellow-toothed	Chaetodipus formosus	
103		Cheetah	Chaetodipus goldmani	
104		Chicken	Chaetodipus hispidus	
105		Chimpanzee (Genus Pan)	Chaetodipus intermedius	
106		Chinchilla	Chaetodipus lineatus	
107		Chipmunk (Genus Tamias)	Chaetodipus nelsoni	
108		Chipmunk_Alpine	Chaetodipus penicillatus	
109		Chipmunk_Buller's	Chaetodipus pernix	
110		Chipmunk_California (Allen's)	Chaetodipus spinatus	
111		Chipmunk_Cliff	Chamaeleonidae (Family)	
112		Chipmunk_Colorado	Chelydra serpentina	
113		Chipmunk_Eastern American	Chinchilla lanigera	
114		Chipmunk_Grey-collared	Chiroptera (Order)	
115		Chipmunk_Hopi	Chlamydosaurus kingii	
116		Chipmunk_Least	Choeronycteris (Genus)	
117		Chipmunk_Lodgepole	Choeronycteris mexicana	
118		Chipmunk_Long-eared (Tahoe)	Clethrionomys (Genus)	
119		Chipmunk_Merriam's	Clethrionomys gapperi	
120		Chipmunk_Palmer's	Clethrionomys gapperi subsp occidentalis	
121		Chipmunk_Panamint	Clethrionomys glariolus	
122		Chipmunk_Red-tailed	Clethrionomys rutilus	
123		Chipmunk_Sonoma	Conepatus leuconotus	
124		Chipmunk_Townsend's	Connochaetes (Genus)	
125		Chipmunk_Uinta	Connochaetes taurinus	
126		Chipmunk_Yellow-pine	Corvus (Genus)	
127		Coati (Genus Nasua)	Cricetulus (Genus)	
128		Coati_White-nosed	Cricetus cricetus	
129		Coatimundi (Coati)	Crotalus dirissus subsp unicolor	
130		Cougar (Mt Lion or Puma)	Crotalus tigris	
131		Coyote	Cryptotis parva	
132		Coyote-Dog hybrid (Generic name)	Cynomys (Genus)	
133		Crow (Genus Corvis)	Cynomys gunnisoni	
134		Deer (Generic name)	Cynomys leucurus	
135		Deer_Columbian Black-tailed	Cynomys ludovicianus	
136		Deer_Fallow	Cynomys mexicanus	
137		Deer_Mule	Cynomys parvidens	
138		Deer_Sika	Dama dama	
139		Deer_White-tailed	Dasypus novemcinctus	
140		Dog_Domestic	Desmodus rotundus	
141		Donkey (Generic name)	Diceros bicornis	
142		Duck (Generic name)	Didelphis virginiana	

WA KINGCO-20-0492-G-000064

	AE	AF	AG	AH
95	Flea (Corypsylla ornata)	Chaetopsylla lotoris		
96	Flea (Ctenocephalides canis)	Chaetopsylla nidicola		
97	Flea (Ctenocephalides felis)	Chaetopsylla setosa		
98	Flea (Ctenophthalmus cabelleri)	Chaetopsylla stewarti		
99	Flea (Ctenophthalmus cryptotis)	Chaetopsylla tuberculaticeps		
100	Flea (Ctenophthalmus expansis)	Class Arachnida		
101	Flea (Ctenophthalmus haagi)	Class Diplopoda		
102	Flea (Ctenophthalmus myodosus)	Conorhinopsylla stanfordi		
103	Flea (Ctenophthalmus pseudagyrtis)	Coptopsylla lamellifer		
104	Flea (Ctenophthalmus sanborni)	Corrodopsylla barrerae		
105	Flea (Ctenophyllus armatus)	Corrodopsylla curvata		
106	Flea (Dactylopsylla bluei)	Corrodopsylla hamiltoni		
107	Flea (Dactylopsylla digitenua)	Corypsylla jordani		
108	Flea (Dactylopsylla megasoma)	Corypsylla kohlsi		
109	Flea (Dactylopsylla neomexicana)	Corypsylla ornata		
110	Flea (Dactylopsylla pentachaeta)	Ctenocephalides canis		
111	Flea (Dactylopsylla percernis)	Ctenocephalides felis		
112	Flea (Delotelis hollandi)	Ctenophthalmus cabelleri		
113	Flea (Delotelis telegoni)	Ctenophthalmus cryptotis		
114	Flea (Diamanus montanus)	Ctenophthalmus expansis		
115	Flea (Dinopsyllus (Opisocrostis) hirsutus)	Ctenophthalmus haagi		
116	Flea (Dolichopsyllus stylosus)	Ctenophthalmus myodosus		
117	Flea (Doratopsylla blarinae)	Ctenophthalmus pseudagyrtis		
118	Flea (Doratopsylla wisemani)	Ctenophthalmus sanborni		
119	Flea (Echidnophaga (Amphalius) runatus)	Ctenophyllus armatus		
120	Flea (Echidnophaga gallinacea)	Dactylopsylla bluei		
121	Flea (Epitedia cavernicola)	Dactylopsylla digitenua		
122	Flea (Epitedia faceta)	Dactylopsylla megasoma		
123	Flea (Epitedia neotomae)	Dactylopsylla neomexicana		
124	Flea (Epitedia scapani)	Dactylopsylla pentachaeta		
125	Flea (Epitedia stanfordi)	Dactylopsylla percernis		
126	Flea (Epitedia stewarti)	Delotelis hollandi		
127	Flea (Epitedia wenmanni)	Delotelis telegoni		
128	Flea (Euhoplopsyllus glacialis affinis)	Dermacentor albipictus		
129	Flea (Euhoplopsyllus glacialis foxi)	Dermacentor andersoni		
130	Flea (Euhoplopsyllus glacialis glacialis)	Dermacentor hunteri		
131	Flea (Euhoplopsyllus glacialis lynx)	Dermacentor marginatus		
132	Flea (Euhoplopsyllus glacialis)	Dermacentor nitens		
133	Flea (Eumolpianus (Ceratophyllus) ciliatus)	Dermacentor occidentalis		
134	Flea (Eumolpianus cyrturus)	Dermacentor parumapertus		
135	Flea (Eumolpianus eumolpi)	Dermacentor reticulatus		
136	Flea (Eumolpianus eutamiadis)	Dermacentor spp.		
137	Flea (Eumolpianus fornacis)	Dermacentor variabilis		
138	Flea (Eumolpianus oraius)	Diamanus montanus		
139	Flea (Eumolpianus polumus)	Dinopsyllus (Opisocrostis) hirsutus		
140	Flea (Foxella ignota)	Dolichopsyllus stylosus		
141	Flea (Geusibia ashcrafti)	Doratopsylla blarinae		
142	Flea (Haemaphysalis leporispalustris)	Doratopsylla wisemani		

	AM	AN	AO	AP
95			Camel (Genus)	Camelus (Genus)
96			Camel_Arabian (Dromedary-One humped)	Camelus dromedarius
97			Camel_Bactrian (Two- humped)	Camelus bactrianus
98			Caracal	Caracal caracal
99			Caribou, deer, moose, elk (Family Cervidae)	Cervidae (Family)
100			Cat_Domestic	Felis catus
101			Cat_Little spotted (Oncilla)	Leopardus tigrinus
102			Cat_Ring-tailed	Bassariscus astutus
103			Cat_Wild (Montes de gato)	Felis silvestris
104			Cattle	Bos taurus
105			Cavy (Family)	Caviidae (Family)
106			Cavy_Rock	Kerodon rupestris
107			Cavy_Spix's Yellow-toothed	Galea spixii
108			Cheetah	Acinonyx jubatus
109			Chicken	Gallus gallus
110			Chimpanzee (Genus Pan)	Pan (Genus)
111			Chinchilla	Chinchilla lanigera
112			Chipmunk (Genus Tamias)	Tamias (Genus)
113			Chipmunk_Alpine	Tamias alpinus
114			Chipmunk_Buller's	Tamias bulleri
115			Chipmunk_California (Allen's)	Tamias senex
116			Chipmunk_Cliff	Tamias dorsalis
117			Chipmunk_Colorado	Tamias quadrivittatus
118			Chipmunk_Eastern American	Tamias striatus
119			Chipmunk_Grey-collared	Tamias cinereicollis
120			Chipmunk_Hopi	Tamias rufus
121			Chipmunk_Least	Tamias minimus
122			Chipmunk_Lodgepole	Tamias speciosus
123			Chipmunk_Long-eared (Tahoe)	Tamias quadrimaculatus
124			Chipmunk_Merriam's	Tamias merriami
125			Chipmunk_Palmer's	Tamias palmeri
126			Chipmunk_Panamint	Tamias panamintinus
127			Chipmunk_Red-tailed	Tamias ruficaudus
128			Chipmunk_Sonoma	Tamias sonomae
129			Chipmunk_Townsend's	Tamias townsendii
130			Chipmunk_Uinta	Tamias umbrinus
131			Chipmunk_Yellow-pine	Tamias amoenus
132			Coati (Genus Nasua)	Nasua (Genus)
133			Coati_White-nosed	Nasua narica
134			Coatimundi (Coati)	Nasua nasua
135			Cougar (Mt Lion or Puma)	Puma concolor
136			Coyote	Canis latrans
137			Coyote-Dog hybrid (Generic name)	[Coyote-dog hybrid]
138			Crow (Genus Corvis)	Corvus (Genus)
139			Crustacean (Subphylum Crustacea)	Subphylum Crustacea
140			Deer (Generic name)	[Deer]
141			Deer fly (Genus Chrysops)	Genus Chrysops
142			Deer_Columbian Black-tailed	Odocoileus hemionus subsp. columbianus

WA KINGCO-20-0492-C-000066

	AQ	AR	AS	AT	AU	AV
95		G , 1		Artibeus jamaicensis		
96		G , 2		Arvicola terrestris		
97		G , 3		Atelerix albiventris		
98		G , 4		Atheropsylla cochisei		
99		G , 5		Atyphloceras bishopi		
100		G , 6		Atyphloceras echis		
101		G , 7		Atyphloceras multidentatus		
102		G , 8		Atyphloceras tancitari		
103		G , 9		Aves (Class)		
104		G , 10		Baculomeris altmani		
105		G , 11		Baculomeris schmidtii		
106		G , 12		Bandicota bengalensis		
107		G , 13		Bassariscus astutus		
108		G , 14		Bassariscus sumichrasti		
109		G , 15		Bison bison		
110		H , 1		Blarina (Genus)		
111		H , 2		Boa constrictor subsp constrictor		
112		H , 3		Bolomys lasiurus		
113		H , 4		Bos (Genus)		
114		H , 5		Bos taurus		
115		H , 6		Brachylagus idahoensis		
116		H , 7		Bubo virginianus		
117		H , 8		Callistopsyllus terinus campestris		
118		H , 9		Callistopsyllus terinus deuterus		
119		H , 10		Callistopsyllus terinus terinus		
120		H , 11		Callithrix (Genus)		
121		H , 12		Callithrix kuhlii		
122		H , 13		Camelus (Genus)		
123		H , 14		Camelus bactrianus		
124		H , 15		Camelus dromedarius		
125		I , 1		Canis latrans		
126		I , 2		Canis lupus		
127		I , 3		Canis lupus subsp familiaris		
128		I , 4		Canis lupus subsp rufus		
129		I , 5		Canis lupus X Canis lupus familiaris hybrid		
130		I , 6		Capra (Genus)		
131		I , 7		Caracal caracal		
132		I , 8		Carduelis flammea		
133		I , 9		Carduelis spinus		
134		I , 10		Carteretta carteri		
135		I , 11		Carteretta clavata		
136		I , 12		Castor canadensis		
137		I , 13		Catallagia arizonae		
138		I , 14		Catallagia borealis		
139		I , 15		Catallagia calisherii		
140		J , 1		Catallagia charlottensis		
141		J , 2		Catallagia decipiens		
142		J , 3		Catallagia jellisoni		

	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG
95			NYSDOH Wadsworth Center, Virology Lab								
96			OH - Wright Patterson AFB HIV CLIA Activity								
97			OH Department of Health Laboratory								
98			OH-Cincinnati Childrens Hospital Medical Center								
99			OH-Wright-Patterson AFB								
100			OK Public Health Laboratory, Oklahoma State DOH								
101			OR State PHL-General Microbiology Section								
102			OR State PHL-Virology/Immunology Section								
103			PA Department of Health, Bureau of Laboratories								
104			PER-NAMRU-6								
105			PR - Biological and Chemical Emergencies Lab Office of Public Health Preparedness and Response								
106			PR Public Health Lab								
107			RI State Health Laboratories								
108			SC Dept of Health and Env. Control-Bureau of Laboratories								
109			SD Public Health Laboratory								
110			TN Division of Laboratory Services								
111			TTO-The Caribbean Public Health Agency (CARPHA)								
112			TX Brooke Army Medical Center								
113			TX DSHS, Lab Services Section MC 1947								
114			TX DSHS, Zoonosis Control Branch								
115			TX-Houston Health Department Laboratory								
116			University of Minnesota								
117			USDA ARS WRRRC, Produce Safety and MicroBio Research								
118			USDA/FSIS/OPHS/EL/MCB								
119			UT-Unified State Labs: Public Health Utah DOH								
120			VA-Division of Consolidated Laboratory Services								
121			VI-US Virgin Islands Department of Health								
122			VT Dept. of Health Laboratory								
123			WA State Department of Health								
124			WHO/NICD, External Quality Assessment Reference Unit								
125			WI State Laboratory of Hygiene								
126			WVDHHR - Office of Laboratory Services								
127			WY Public Health Laboratory								
128											
129											
130											
131											
132											
133											
134											
135											
136											
137											
138											
139											
140											
141											
142											

	A	B	C
143		Herpes Simplex Virus 1/2 Serology	Candida famata
144		Herpesvirus Encephalitis Panel	Candida glabrata
145		HIV Molecular Surveillance Study (International Only)	Candida guilliermondii
146		HIV Special Study	Candida krusei
147		HIV-1 Genotype Drug Resistance (International Only)	Candida lusitanae
148		HIV-1 Laboratory Algorithm for Dried Blood Spots (DBS)	Candida magnoliae
149		HIV-1 Nucleic Acid Amplification (Qualitative)	Candida parapsilosis
150		HIV-1 PCR (International Only) Qualitative	Candida pseudotropicalis
151		HIV-1 PCR (International Only) Quantitative Viral Load	Candida rugosa
152		HIV-1/2 Antibody (International Only) Rapid Test	Candida species
153		HIV-1/2 Laboratory Algorithm	Candida stellatoidea
154		HIV-1/2 Serology Diagnostic Algorithm (International Only)	Candida tropicalis
155		HIV-2 Nucleic Acid Amplification (Qualitative)	Capnocytophaga species
156		HIV-2 Serology	Capnocytophaga sputigena
157		Human Herpesvirus 6 Detection and Subtyping	Cardiobacterium hominis
158		Human Herpesvirus 6 Serology	Cardiobacterium species
159		Human Herpesvirus 7 Detection	Cardiovirus
160		Human Herpesvirus 8 Detection	Cardiovirus A
161		Human Herpesvirus 8 Serology	Cellulomonas species
162		Human Immunodeficiency Virus Type 1 (HIV-1) Nucleic Acid Testing and Sequencing	Cestode
163		Human Papillomavirus (HPV) Special Study	Chikungunya
164		Influenza Antiviral Resistance Diagnosis	Chitinophaga pinensis
165		Influenza Molecular Diagnosis	Chlamydia species
166		Influenza Serology	Chlamydia trachomatis
167		Influenza Special Study	Chlamydomydia pneumoniae
168		Influenza Surveillance	Chlamydomydia psittaci
169		Junin Hemorrhagic Fever Serology and Molecular Detection	Chlamydomydia species
170		Kyasanur Forest Disease Testing	Chromobacterium species
171		Laguna Hemorrhagic Fever Serology and Molecular Detection	Chromobacterium violaceum
172		Lassa Fever Testing	Chryseobacterium indologenes
173		Legionella species Detection and Identification	Chryseobacterium species
174		Legionella species Molecular Subtyping	Chrysosporium (Emmonsia) species
175		Leishmania species Identification	Citrobacter amalonaticus
176		Leishmaniasis Serology	Citrobacter braakii
177		Leptospira species Identification and Genotyping	Citrobacter farmeri
178		Leptospira species Molecular Detection	Citrobacter freundii
179		Leptospira species Serology	Citrobacter koseri
180		Leptospira species Study	Citrobacter species
181		Listeria Identification	Citrobacter youngae
182		Listeria monocytogenes Identification and Subtyping	Cladophialophora bantiana
183		Listeria Study	Cladophialophora species
184		LRN Biothreat Multi-Agent Screening-Environmental	Cladosporium species
185		Lymphocytic Choriomeningitis (LCM) Testing	Clonorchis sinensis
186		Machupo Hemorrhagic Fever Serology and Molecular Detection	Clonorchis species
187		Malaria Drug Resistance Surveillance	Clostridioides difficile
188		Malaria Molecular Identification	Clostridium botulinum
189		Malaria Serology	Clostridium botulinum group II
190		Malaria: Morphologic Identification	Clostridium butyricum

WA-KINGCO-20-0492-G-000069

	D	E	F	G	H	I	J
143				Nocardiosis			
144				Nosocomial infection			
145				Osteomyelitis			
146				Otitis media			
147				Paracoccidioidomycosis			
148				Paragonimiasis			
149				Paratyphoid fever			
150				Pelvic inflammatory disease			
151				Pertussis syndrome			
152				Phaeohyphomycosis			
153				Pharygoconjunctival fever			
154				Pharyngitis			
155				Pinta			
156				Plague			
157				Pleurisy			
158				Pneumococcal meningitis			
159				Pneumocystosis			
160				Pneumonia			
161				Poliomyelitis			
162				Poxvirus			
163				Proctitis			
164				Protothecosis			
165				Psittacosis			
166				Pulmonary fibrosis			
167				Pulmonary hypertension			
168				Pulmonary tuberculosis			
169				Pure red cell aplasia			
170				Pyoderma gangrenosum			
171				Q fever			
172				Rash			
173				Rat-bite fever			
174				Respiratory distress syndrome			
175				Rhinitis			
176				Rhinoscleroma			
177				Rhinosporidiosis			
178				Rickettsia parkeri			
179				Rickettsialpox			
180				Rocky Mountain spotted fever			
181				Rubella			
182				Salmonellosis			
183				Scarlet fever			
184				Schistosomiasis			
185				Scrub typhus			
186				Seizures			
187				Sepsis			
188				Septic arthritis			
189				Septic sore throat			
190				Septicemia			

	K	L	M	N
143	Meat, Turkey	Tissue_Lung	Whey samples	
144	Meat, Turkey, Ground_cooked	Tissue_Mass	Wipe	
145	Meat, Turkey, Ground_raw	Tissue_Muscle (Biopsy)	Wipe_skin Cleaning	
146	Meat, Veal	Tissue_Necrotic		
147	Meat, Venison	Tissue_Nodule		
148	Medical Equipment	Tissue_Placenta		
149	Monocyte	Tissue_Postmortem		
150	Moonshine (Pruno brew)	Tissue_Section		
151	Mucosa specimen	Tissue_Skin (biopsy)		
152	Mucus	TNA-Nucleic acid (Total)		
153	Nail specimen (specimen)	Ulcer		
154	Nasal secretions	Unknown		
155	Nasal wash	Urethral swab		
156	Nasogastric aspirate	Urine		
157	Nasopharyngeal (Throat) washings	Vomitus		
158	Nasopharyngeal and Oropharyngeal Swab	Wash_Carcass		
159	Nasopharyngeal aspirate	White blood cells		
160	Nasopharyngeal swab	Wipe		
161	Nest material	Wound		
162	Nodule	Wound drainage		
163	Nuts	Wound exudate		
164	Nuts, Peanuts	Wound_Surgical		
165	Oil			
166	Oral swab			
167	Papule			
168	Pellet_wood			
169	Peripheral Blood Mononuclear Cell			
170	Peritoneal dialysate			
171	Peritoneal dialysis solution			
172	Pernasal swab (Animal)			
173	Pharyngeal (Throat) washings			
174	Plant matter			
175	Plasma			
176	Plasmid			
177	P-trap			
178	Pus			
179	Rectal swab			
180	Red Blood Cell			
181	Reference Strain			
182	RNA-Ribonucleic acid			
183	Saliva			
184	Sample Tanker			
185	Sand			
186	Seafood			
187	Seafood, Clams			
188	Seafood, Crab			
189	Seafood, Fish			
190	Seafood, Shellfish			

	O	P	Q
143	Intestine (Bowel)_Large		
144	Intestine (Bowel)_Small		
145	Jaw region		
146	Jejunum		
147	Joint		
148	Joint_Hip		
149	Joint_Knee		
150	Joint_Synovial		
151	Joint_Wrist		
152	Jugular vein		
153	Kidney		
154	Kidney_Cortex		
155	Knee region		
156	Labia_Genital		
157	Larynx		
158	Leg		
159	Leg_Calf		
160	Leg_Lower		
161	Leg_Thigh		
162	Lip		
163	Liver		
164	Lumbar Disc Space		
165	Lung		
166	Lung_Lingula		
167	Lung_Lower lobe		
168	Lung_Middle lobe		
169	Lung_Upper lobe		
170	Lymph node		
171	Lymph node_Petracheal		
172	Lymph node_Retroperitoneal		
173	Lymph node_Submandibular		
174	Main bronchus		
175	Mitral valve		
176	Mouth		
177	Muscle_Biceps brachii		
178	Muscle_Iliopsoas		
179	Muscle_Psoas		
180	Muscle_Skeletal		
181	Nail		
182	Nail bed		
183	Nape of Neck		
184	Nasal septum		
185	Nasopharynx		
186	Neck		
187	Nose		
188	Nose_Turbinate		
189	Olecranon process		
190	Olfactory bulb		

	W	X	Y	Z
143		Martinique		
144		Mauritania		
145		Mauritius		
146		Mayotte		
147		Mexico		
148		Moldova, Republic of		
149		Monaco		
150		Mongolia		
151		Montenegro		
152		Montserrat		
153		Morocco		
154		Mozambique		
155		Myanmar		
156		Namibia		
157		Nauru		
158		Nepal		
159		Netherlands		
160		Netherlands Antilles		
161		New Caledonia		
162		New Zealand		
163		Nicaragua		
164		Niger		
165		Nigeria		
166		Niue		
167		Norfolk Island		
168		Northern Mariana Islands		
169		Norway		
170		Oman		
171		Pakistan		
172		Palau		
173		Palestinian Territory, Occupied		
174		Panama		
175		Papua New Guinea		
176		Paraguay		
177		Peru		
178		Philippines		
179		Pitcairn		
180		Poland		
181		Portugal		
182		Puerto Rico		
183		Qatar		
184		Reunion		
185		Romania		
186		Russian Federation		
187		Rwanda		
188		Saint Barthelemy		
189		Saint Helena		
190		Saint Kitts and Nevis		

	AA	AB	AC	AD
143		Duiker_Forest (Genus Cephalophus)	Dipodomys agilis	
144		Eland (Genus Taurotragus)	Dipodomys deserti	
145		Elephant (Generic name)	Dipodomys elator	
146		Elephant_African	Dipodomys gravipes	
147		Elk_American (Red Deer)	Dipodomys heermanni	
148		Elk_Tule	Dipodomys ingens	
149		Ferret (Generic name)	Dipodomys insularis	
150		Ferret_Black-footed	Dipodomys margaritae	
151		Ferret_Least	Dipodomys merriami	
152		Fisher	Dipodomys microps	
153		Fox (Generic name)	Dipodomys nelsoni	
154		Fox_Arctic	Dipodomys nitratoides	
155		Fox_Common Gray	Dipodomys ordii	
156		Fox_Fennec	Dipodomys panamintinus	
157		Fox_Island Grey	Dipodomys phillipsii	
158		Fox_Kit	Dipodomys spectabilis	
159		Fox_Red	Dipodomys stephensi	
160		Fox_Red (Kit) (Genus Vulpes)	Dipodomys venustus	
161		Fox_Swift	Dipodomys venustus subsp elephantinus	
162		Fox_Virginia	Enhydra lutris	
163		Frog (Generic name)	Eptesicus fuscus	
164		Frog_Toad (Generic name)	Equus (Genus)	
165		Galago (Genus Galago)	Equus burchellii	
166		Gazella (Genus Gazella)	Equus caballus	
167		Gemsbok	Equus zebra	
168		Gerbil (Generic name)	Erethizon dorsatum	
169		Gerbil (Genus Gerbillus)	Erinaceinae (Subfamily)	
170		Gerbil (Jird) (Genus Meriones)	Euderma maculatum	
171		Gerbil_Great	Eumops glacinus	
172		Giraffe	Eumops perotis	
173		Goat (Genus Capra)	Eumops underwoodi	
174		Goat_Mountain (Genus Oreamnos)	Felis catus	
175		Goldfinch (Generic name)	Felis silvestris	
176		Goose_Domestic (Generic name)	Galago (Genus)	
177		Gopher_Desert Pocket	Galea spixii	
178		Gopher_Plains Pocket	Gallus gallus	
179		Gopher_Pocket, Botta's	Gazella (Genus)	
180		Gopher_Pocket, Camas	Geomys arenarius	
181		Gopher_Pocket, Mountain	Geomys bursarius	
182		Gopher_Pocket, Yellow-faced	Geomys personatus	
183		Gopher_Pocket_Northern	Geomys pinetis	
184		Gopher_Pocket_Southern	Gerbillus (Genus)	
185		Gopher_Pocket_Townsend's	Giraffa camelopardalis	
186		Gopher_Southeastern Pocket	Glaucomys (Genus)	
187		Gopher_Texas Pocket	Glaucomys sabrinus	
188		Gophers_Pocket (Genus Thomomys)	Glaucomys volans	
189		Gorilla	Gorilla gorilla	
190		Guanaco	Gulo gulo	

WA-KINGCO-20-0492-G-000074

	AE	AF	AG	AH
143	Flea (Haemaphysalis sp. (Genus))	Echidnophaga (Amphalius) runatus		
144	Flea (Hoplopsyllus anomalus)	Echidnophaga gallinacea		
145	Flea (Hoplopsyllus pectinatus)	Epitedia cavernicola		
146	Flea (Hormopsylla kyriophila)	Epitedia faceta		
147	Flea (Hystrichopsylla dippiei)	Epitedia neotomae		
148	Flea (Hystrichopsylla kris)	Epitedia scapani		
149	Flea (Hystrichopsylla occidentalis linsdalei)	Epitedia stanfordi		
150	Flea (Hystrichopsylla occidentalis)	Epitedia stewarti		
151	Flea (Hystrichopsylla orophila)	Epitedia wenmanni		
152	Flea (Hystrichopsylla schefferi)	Euhoplopsyllus glacialis		
153	Flea (Hystrichopsylla sp. (Genus))	Euhoplopsyllus glacialis affinis		
154	Flea (Jellisoni doratopsylla)	Euhoplopsyllus glacialis foxi		
155	Flea (Jellisonia bonia)	Euhoplopsyllus glacialis glacialis		
156	Flea (Jellisonia bullisi)	Euhoplopsyllus glacialis lynx		
157	Flea (Jellisonia hayesi)	Eumolpianus (Ceratophyllus) ciliatus		
158	Flea (Jellisonia ironsi)	Eumolpianus cyrturus		
159	Flea (Jellisonia johnsonae)	Eumolpianus eumolpi		
160	Flea (Jellisonia klotsi)	Eumolpianus eutamiadis		
161	Flea (Jellisonia wisemani)	Eumolpianus fornacis		
162	Flea (Jordanopsylla allredi)	Eumolpianus oraius		
163	Flea (Kohlsia azuerensis)	Eumolpianus polumus		
164	Flea (Kohlsia campaniger)	Family Culicidae		
165	Flea (Kohlsia cora)	Family Oestridae		
166	Flea (Kohlsia felteni)	Family Simuliidae		
167	Flea (Kohlsia fournieri)	Foxella ignota		
168	Flea (Kohlsia gammonsi)	Genus Chrysops		
169	Flea (Kohlsia graphis)	Geusibia ashcrafti		
170	Flea (Kohlsia keenani)	Haemaphysalis leporispalustris		
171	Flea (Kohlsia linni)	Haemaphysalis sp. (Genus)		
172	Flea (Kohlsia martini)	Haemaphysalis spp.		
173	Flea (Kohlsia mojica)	Hoplopsyllus anomalus		
174	Flea (Kohlsia ortizi)	Hoplopsyllus pectinatus		
175	Flea (Kohlsia osgoodi)	Hormopsylla kyriophila		
176	Flea (Kohlsia pelaezi)	Hystrichopsylla dippiei		
177	Flea (Kohlsia tiptoni)	Hystrichopsylla kris		
178	Flea (Kohlsia traubi)	Hystrichopsylla occidentalis		
179	Flea (Kohlsia uniseta)	Hystrichopsylla occidentalis linsdalei		
180	Flea (Kohlsia whartoni)	Hystrichopsylla orophila		
181	Flea (Leptopsylla segnis)	Hystrichopsylla schefferi		
182	Flea (Malaraeus eremicus)	Hystrichopsylla sp. (Genus)		
183	Flea (Malaraeus sinomus)	Ixodes affinis		
184	Flea (Malaraeus sp. (Genus))	Ixodes angustus		
185	Flea (Malaraeus telchinus)	Ixodes brunneus		
186	Flea (Malaraeus vonfintelis)	Ixodes cookei		
187	Flea (Margopsylla tolli)	Ixodes dentatus		
188	Flea (Megabothris abantis)	Ixodes kingi		
189	Flea (Megabothris acerbus)	Ixodes marxi		
190	Flea (Megabothris adversus)	Ixodes muris		

	AM	AN	AO	AP
143			Deer_Fallow	Dama dama
144			Deer_Mule	Odocoileus hemionus
145			Deer_Sika	Cervus nippon
146			Deer_White-tailed	Odocoileus virginianus
147			Dog_Domestic	Canis lupus subsp familiaris
148			Donkey (Generic name)	[Donkey]
149			Duck (Generic name)	[Duck]
150			Duiker_Forest (Genus Cephalophus)	Cephalophus (Genus)
151			Eland (Genus Taurotragus)	Taurotragus (Genus)
152			Elephant (Generic name)	[Elephant]
153			Elephant_African	Loxodonta africana
154			Elk_American (Red Deer)	Cervus elaphus
155			Elk_Tule	Cervus elaphus subsp nannodes
156			Ferret (Generic name)	[Ferret]
157			Ferret_Black-footed	Mustela nigripes
158			Ferret_Least	Mustela nivalis subsp rixosa
159			Fisher	Martes pennanti
160			Flea (Actenopsylla suavis)	Actenopsylla suavis
161			Flea (Adoratopsylla intermedia)	Adoratopsylla intermedia
162			Flea (Aetheca thamba)	Aetheca thamba
163			Flea (Aetheca wagneri)	Aetheca wagneri
164			Flea (Amaradix bitterrootensis)	Amaradix bitterrootensis
165			Flea (Amaradix euphorbi)	Amaradix euphorbi
166			Flea (Amphipsylla sibirica pollionis)	Amphipsylla sibirica pollionis
167			Flea (Amphipsylla sibirica washingtona)	Amphipsylla sibirica washingtona
168			Flea (Amphipsylla sibirica)	Amphipsylla sibirica
169			Flea (Anomiopsyllus amphilbolus)	Anomiopsyllus amphilbolus
170			Flea (Anomiopsyllus durangoensis)	Anomiopsyllus durangoensis
171			Flea (Anomiopsyllus falsicalifornicus)	Anomiopsyllus falsicalifornicus
172			Flea (Anomiopsyllus martini)	Anomiopsyllus martini
173			Flea (Anomiopsyllus montanus)	Anomiopsyllus montanus
174			Flea (Anomiopsyllus nidiophilus)	Anomiopsyllus nidiophilus
175			Flea (Anomiopsyllus novomexicanensis)	Anomiopsyllus novomexicanensis
176			Flea (Anomiopsyllus nudatus)	Anomiopsyllus nudatus
177			Flea (Anomiopsyllus oaxacae)	Anomiopsyllus oaxacae
178			Flea (Anomiopsyllus sinuatus)	Anomiopsyllus sinuatus
179			Flea (Anomiopsyllus sp (Genus))	Anomiopsyllus sp (Genus)
180			Flea (Anomiopsyllus traubi)	Anomiopsyllus traubi
181			Flea (Anomiopsyllus walkeri)	Anomiopsyllus walkeri
182			Flea (Atheropsylla cochisei)	Atheropsylla cochisei
183			Flea (Atyphloceras bishopi)	Atyphloceras bishopi
184			Flea (Atyphloceras echis)	Atyphloceras echis
185			Flea (Atyphloceras multidentatus)	Atyphloceras multidentatus
186			Flea (Atyphloceras tancitari)	Atyphloceras tancitari
187			Flea (Baculomeris altmani)	Baculomeris altmani
188			Flea (Baculomeris schmidtii)	Baculomeris schmidtii
189			Flea (Callistopsyllus terinus campestris)	Callistopsyllus terinus campestris
190			Flea (Callistopsyllus terinus deuterus)	Callistopsyllus terinus deuterus

WA-KINGCO-20-0492-G-000076

	AQ	AR	AS	AT	AU	AV
143		J , 4		Catallagia mathesoni		
144		J , 5		Catallagia neweyi		
145		J , 6		Catallagia sculleni		
146		J , 7		Catallagia sculleni rutherfordi		
147		J , 8		Catallagia sp. (Genus)		
148		J , 9		Catallagia wymani		
149		J , 10		Cavia porcellus		
150		J , 11		Caviidae (Family)		
151		J , 12		Cebus (Genus)		
152		J , 13		Cebus apella		
153		J , 14		Cediopsylla inaequalis		
154		J , 15		Cediopsylla inaequalis interrupta		
155		K , 1		Cediopsylla simplex		
156		K , 2		Cediopsylla tepolita		
157		K , 3		Cephalophus (Genus)		
158		K , 4		Ceratophyllus adustus		
159		K , 5		Ceratophyllus affinis		
160		K , 6		Ceratophyllus altus		
161		K , 7		Ceratophyllus arcuegens		
162		K , 8		Ceratophyllus celsus		
163		K , 9		Ceratophyllus ciliatus		
164		K , 10		Ceratophyllus coahuilensis		
165		K , 11		Ceratophyllus garei		
166		K , 12		Ceratophyllus gilvus		
167		K , 13		Ceratophyllus idius		
168		K , 14		Ceratophyllus lari		
169		K , 15		Ceratophyllus lunatus tundrensis		
170		L , 1		Ceratophyllus niger		
171		L , 2		Ceratophyllus pelecani		
172		L , 3		Ceratophyllus petrochelidoni		
173		L , 4		Ceratophyllus rauschi		
174		L , 5		Ceratophyllus riparius		
175		L , 6		Ceratophyllus rossittensis		
176		L , 7		Ceratophyllus scopulorum		
177		L , 8		Ceratophyllus styx		
178		L , 9		Ceratophyllus vison		
179		L , 10		Ceratotherium simum (organism)		
180		L , 11		Cercopithecus neglectus		
181		L , 12		Cervidae (Family)		
182		L , 13		Cervus elaphus		
183		L , 14		Cervus elaphus subsp nannodes		
184		L , 15		Cervus nippon		
185		M , 1		Chaetodipus arenarius		
186		M , 2		Chaetodipus artus		
187		M , 3		Chaetodipus baileyi		
188		M , 4		Chaetodipus californicus		
189		M , 5		Chaetodipus fallax		
190		M , 6		Chaetodipus formosus		

	A	B	C
191		Marburg Hemorrhagic Fever Serology and Molecular Detection	Clostridium difficile
192		Measles Avidity	Clostridium innocuum
193		Measles Detection and Genotyping	Clostridium perfringens
194		Measles Neutralization Antibody (Not for Immune Status)	Clostridium septicum
195		Measles Serology	Clostridium sordellii
196		Measles Special Study	Clostridium species
197		Measles Vaccine Virus Detection	Clostridium sporogenes
198		MERS-CoV Molecular Detection	Clostridium tetani
199		MERS-CoV PCR (Middle East Respiratory Syndrome Coronavirus Serology)	Coccidia species
200		Microsporidia Molecular Identification	Coccidioides immitis
201		Moraxella species Identification	Coccidioides posadasii
202		MPIR - Study	Coccidioides species
203		Multipathogen Respiratory Panel (Molecular Detection)	Coelomycete
204		Mumps Detection and Genotyping	Colletotrichum species
205		Mumps Neutralization Antibody (Not for Immune Status)	Conidiobolus species
206		Mumps Serology	Control
207		Mumps Special Study	Corynebacterium diphtheriae
208		Mycobacterium TB Complex - Drug Susceptibility Testing	Corynebacterium jeikeium
209		Mycobacterium TB Complex - Identification	Corynebacterium matruchotii
210		Mycobacterium TB Complex - Identification and Drug Susceptibility Testing	Corynebacterium minutissimum
211		Mycobacterium TB Complex - Identification and Pyrazinamide Susceptibility Testing	Corynebacterium phocae
212		Mycobacterium TB Complex - Molecular Detection of Drug Resistance (MDDR)	Corynebacterium pseudotuberculosis
213		Mycobacterium TB Complex - Pyrazinamide Susceptibility Testing	Corynebacterium species
214		Mycobacterium TB Complex - Special Study	Corynebacterium striatum
215		Mycobacterium TB Complex (International Only) Identification and Drug Susceptibility Testing	Corynebacterium ulcerans
216		Mycoplasma pneumoniae Macrolide Susceptibility Genotyping	Corynebacterium xerosis
217		Mycoplasma pneumoniae Molecular Detection	Coxiella burnetii
218		Naegleria Molecular Detection	Coxiella species
219		NARMS Susceptibility Testing	Coxsackievirus A16
220		Neisseria gonorrhoeae Genetic Analysis	Coxsackievirus A20
221		Neisseria gonorrhoeae Identification	Coxsackievirus B3
222		Neisseria gonorrhoeae Study	Coxsackievirus B5
223		Neisseria gonorrhoeae Susceptibility Testing	Cronobacter sakazakii
224		Neisseria meningitidis Identification and Serogrouping	Cronobacter species
225		Neisseria meningitidis Surveillance	Cryobacterium species
226		Neisseria species (not GC or meningococcus) Identification	Cryptococcus laurentii
227		Nipah Virus Testing	Cryptococcus luteolus
228		Nocardia species Identification	Cryptococcus neoformans
229		Nocardia species Identification and Antimicrobial Susceptibility Testing	Cryptococcus neoformans var gattii
230		Nontuberculous Mycobacteria (NTM) - Identification (ID)	Cryptosporidium species
231		Norovirus Genotyping	Cunninghamella bertholletiae
232		Norovirus Molecular Detection and Genotyping	Cupriavidus species
233		Orientia Molecular Detection	Curtobacterium species
234		Orientia Serology	Curvularia hawaiiensis
235		Orientia Special Study	Curvularia species
236		Paragonimiasis Serology	Cutibacterium acnes
237		Parasite - Special Study	Cyclospora species
238		Parasites: Morphologic Identification	Cysticercus species

WA-KINGCO-20-0492-G-000078

	D	E	F	G	H	I	J
191				Severe Acute Respiratory Syndrome (SARS)			
192				Shigellosis			
193				Sinusitis			
194				Spinal injury			
195				Spirochetal jaundice			
196				Splenomegaly			
197				Spontaneous abortion			
198				Sporotrichosis			
199				Stroke			
200				Strongyloidiasis			
201				Subacute bacterial endocarditis			
202				Swollen joints			
203				Syphilis			
204				Systemic infection			
205				Tetanus			
206				Thrush			
207				Tick-borne relapsing fever			
208				Tinea nigra			
209				Tinea versicolor			
210				Tonsillitis			
211				Toxic shock syndrome			
212				Toxoplasmosis			
213				Tracheobronchitis			
214				Trachoma			
215				Trench fever			
216				Trichinosis			
217				Trichomoniasis			
218				Tuberculosis			
219				Tularemia			
220				Typhoid fever			
221				Unknown			
222				Upper respiratory infection			
223				Urethritis			
224				Urinary tract infection			
225				Vaginosis			
226				Venereal disease			
227				Vincent's angina			
228				Viral hepatitis			
229				Wegener's granulomatosis			
230				Whooping cough			
231				Wound infection			
232				Yaws			
233				Yellow fever			
234				Zygomycosis			
235							
236							
237							
238							

	K	L	M	N
191	Seafood, Shrimp			
192	Seafood, Squid			
193	Sediment_ Water			
194	Semen			
195	Serum specimen			
196	Sewage			
197	Shower component			
198	Sinus			
199	Skin swab			
200	Skin_Pustule			
201	Skin_Vesicle			
202	Smear			
203	Soil			
204	Solution_Contact lens			
205	Solution_Disinfectant			
206	Soup			
207	Specimen from burn injury			
208	Spice			
209	Spice, Peppers			
210	Spleen specimen			
211	Spread			
212	Spread, Peanut butter			
213	Sputum			
214	Sputum_coughed			
215	Sputum_induced			
216	Stew			
217	Stool			
218	Stool Suspension			
219	Surface wet wipe			
220	Surface Wipe			
221	Swab			
222	Swab_Drag			
223	Sweat			
224	Synthetic			
225	Throat (Oropharyngeal) swab			
226	Tick			
227	Tissue			
228	Tissue_Abscess			
229	Tissue_Adipose			
230	Tissue_Brain			
231	Tissue_Cyst			
232	Tissue_Endometrium			
233	Tissue_Heart			
234	Tissue_Kidney			
235	Tissue_Liver			
236	Tissue_Lung			
237	Tissue_Mass			
238	Tissue_Muscle (Biopsy)			

	O	P	Q
191	Omentum		
192	Oropharynx		
193	Ovary		
194	Palate		
195	Palate_Hard		
196	Pancreas		
197	Parietal pleura		
198	Penile shaft		
199	Penis		
200	Pericardial cavity		
201	Perihepatic region		
202	Perineum		
203	Periorbital region		
204	Perirectal region		
205	Peritoneal cavity		
206	Peritoneum		
207	Phrenic nerve		
208	Placenta		
209	Placental membrane		
210	Pleural cavity		
211	Pleural membrane		
212	Prepatellar bursa		
213	Prostate		
214	Pulmonary alveoli		
215	Pulmonary valve		
216	Pyloric (Gastric) antrum		
217	Rectum		
218	Rib cage		
219	Scalp		
220	Scrotum		
221	Segment of lower lobe of right lung		
222	Shoulder		
223	Sinus_Ethmoid		
224	Sinus_Frontal		
225	Sinus_Maxillary		
226	Sinus_Nasal		
227	Sinus_Sphenoid		
228	Skin		
229	Skull		
230	Skull_Mastoid Process		
231	Spinal cord		
232	Spine		
233	Spleen		
234	Sternum region		
235	Stomach		
236	Subgaleal area		
237	Subperiosteum		
238	Superior fascia of pelvic diaphragm		

	W	X	Y	Z
191		Saint Lucia		
192		Saint Martin (French part)		
193		Saint Pierre and Miquelon		
194		Saint Vincent and the Grenadines		
195		Samoa		
196		San Marino		
197		Sao Tome and Principe		
198		Saudi Arabia		
199		Senegal		
200		Serbia		
201		Seychelles		
202		Sierra Leone		
203		Singapore		
204		Slovakia		
205		Slovenia		
206		Solomon Islands		
207		Somalia		
208		South Africa		
209		South Georgia and the South Sandwich Islands		
210		South Sudan		
211		Spain		
212		Sri Lanka		
213		Sudan		
214		Suriname		
215		Svalbard and Jan Mayen		
216		Swaziland		
217		Sweden		
218		Switzerland		
219		Syrian Arab Republic		
220		Taiwan, Province of China		
221		Tajikistan		
222		Tanzania, United Republic of		
223		Thailand		
224		Timor-Leste		
225		Togo		
226		Tokelau		
227		Tonga		
228		Trinidad and Tobago		
229		Tunisia		
230		Turkey		
231		Turkmenistan		
232		Turks and Caicos Islands		
233		Tuvalu		
234		Uganda		
235		Ukraine		
236		United Arab Emirates		
237		United Kingdom		
238		United States Minor Outlying Islands		

	AA	AB	AC	AD
191		Guinea pig	Gulo gulo subsp luscus	
192		Gull_Ring-billed	Habromys lepturus	
193		Hamster (Generic name)	Habromys lophurus	
194		Hamster (Genus Cricetulus)	Herpestes javanicus	
195		Hamster (Genus Mesocricetus)	Herpestidae (Family)	
196		Hamster_Brandt's	Hippotragus (Genus)	
197		Hamster_Ciscaucasian	Hippotragus equinus	
198		Hamster_European	Hippotragus niger	
199		Hamster_Romanian	Hodomys alleni	
200		Hamster_Syrian	Ictonyx striatus	
201		Hare (Genus Lepus)	Idionycteris phyllotis	
202		Hare_Alaskan	Isthmomyx flavidus	
203		Hare_Arctic	Isthmomyx pirrensis	
204		Hare_Brown (European)	Kerodon rupestris	
205		Hare_Snowshoe	Lagomorpha (Order)	
206		Hawk (Generic name)	Lama glama	
207		Hedgehog (Subfamily)	Lama guanicoe	
208		Hedgehog_Pygmy	Lama pacos	
209		Horse	Larus delawarensis	
210		Horse (Genus Equus)	Lasionycteris noctivagans	
211		Jackrabbit, Antelope	Lasiurus blossevillei	
212		Jackrabbit_Black	Lasiurus borealis	
213		Jackrabbit_Black-tailed	Lasiurus cinereus	
214		Jackrabbit_Gaillard (White-sided)	Lasiurus ega	
215		Jackrabbit_Tehuantepec	Lasiurus intermedius	
216		Jackrabbit_White-sided	Lasiurus seminolus	
217		Jackrabbit_White-tailed	Lemmiscus curtatus	
218		Jaguar	Lemuridae (Family)	
219		Jaguarundi	Leopardus pardalis	
220		Javelina (Peccary_Collared)	Leopardus tigrinus	
221		Jird_Libyan	Leopardus wiedii	
222		Jird_Mid-day	Leptonycteris curasoae	
223		Jird_Mongolian	Leptonycteris nivalis	
224		Jird_Sundevall's	Lepus (Genus)	
225		Jird_Tamarisk	Lepus alleni	
226		Kangaroo (Generic name)	Lepus americanus	
227		Kangaroo rat_Agile	Lepus arcticus	
228		Kangaroo rat_Banner-tailed	Lepus californicus	
229		Kangaroo rat_Big-eared	Lepus callotis subsp callotis	
230		Kangaroo rat_Chisel-toothed	Lepus callotis subsp gaillardi	
231		Kangaroo rat_Desert	Lepus europaeus	
232		Kangaroo rat_Fresno (San Joaquin)	Lepus flavigularis	
233		Kangaroo rat_Giant	Lepus insularis	
234		Kangaroo rat_Heermann's	Lepus othus	
235		Kangaroo rat_Margarita Island	Lepus townsendii	
236		Kangaroo rat_Merriam's	Lontra canadensis	
237		Kangaroo rat_Narrow-faced	Lophuromys woosnami	
238		Kangaroo rat_Nelson's	Loxodonta africana	

WA-KINGCO-20-0492-G-000083

	AE	AF	AG	AH
191	Flea (Megabothris asio megacolpus)	Ixodes ovatus		
192	Flea (Megabothris asio orectus)	Ixodes pacificus		
193	Flea (Megabothris atrox)	Ixodes persulcatus		
194	Flea (Megabothris bisetis)	Ixodes ricinus		
195	Flea (Megabothris clantoni)	Ixodes scapularis		
196	Flea (Megabothris groenlandicus)	Ixodes sculptus		
197	Flea (Megabothris jamesoni)	Ixodes spp.		
198	Flea (Megabothris lucifer)	Jellisonia bonia		
199	Flea (Megabothris princei)	Jellisonia bullisi		
200	Flea (Megabothris quirini)	Jellisonia doratopsylla		
201	Flea (Megabothris similus)	Jellisonia hayesi		
202	Flea (Megabothris smiti)	Jellisonia ironsi		
203	Flea (Megabothris spenceri)	Jellisonia johnsonae		
204	Flea (Megabothris weaveri)	Jellisonia klotsi		
205	Flea (Megabothris wilsoni)	Jellisonia wisemani		
206	Flea (Megarthroglossus becki)	Jordanopsylla allredi		
207	Flea (Megarthroglossus divinus)	Kohlsia azuerensis		
208	Flea (Megarthroglossus proculus)	Kohlsia campaniger		
209	Flea (Megarthroglossus sicamus)	Kohlsia cora		
210	Flea (Megarthroglossus sp. (Genus))	Kohlsia felteni		
211	Flea (Meringis agilis)	Kohlsia fourneri		
212	Flea (Meringis altipecten)	Kohlsia gammonsi		
213	Flea (Meringis arachis)	Kohlsia graphis		
214	Flea (Meringis bilsingi)	Kohlsia keenani		
215	Flea (Meringis californicus)	Kohlsia linni		
216	Flea (Meringis cummingi)	Kohlsia martini		
217	Flea (Meringis deserti)	Kohlsia mojica		
218	Flea (Meringis dipodomys)	Kohlsia ortizi		
219	Flea (Meringis disparalis)	Kohlsia osgoodi		
220	Flea (Meringis facilis)	Kohlsia pelaezi		
221	Flea (Meringis hubbardi)	Kohlsia tiptoni		
222	Flea (Meringis jamesoni)	Kohlsia traubi		
223	Flea (Meringis nidi)	Kohlsia uniseta		
224	Flea (Meringis parkeri)	Kohlsia whartoni		
225	Flea (Meringis rectus)	Leptopsylla segnis		
226	Flea (Meringis shannoni)	Linguatula (Genus)		
227	Flea (Meringis sp. (Genus))	Malaraeus eremicus		
228	Flea (Meringis vitabilis)	Malaraeus sinomus		
229	Flea (Mioctenopsylla arctica)	Malaraeus sp. (Genus)		
230	Flea (Mioctenopsylla traubi)	Malaraeus telchinus		
231	Flea (Myodopsylla collinsi)	Malaraeus vonfintelis		
232	Flea (Myodopsylla gentilis)	Margopsylla tolli		
233	Flea (Myodopsylla globata)	Megabothris abantis		
234	Flea (Myodopsylla nordina)	Megabothris acerbus		
235	Flea (Myodopsylla setosa)	Megabothris adversus		
236	Flea (Myodopsylla peircei)	Megabothris asio megacolpus		
237	Flea (Nearctopsylla brooksi)	Megabothris asio orectus		
238	Flea (Nearctopsylla genalis)	Megabothris atrox		

	AM	AN	AO	AP
191			Flea (Callistopsyllus terinus terinus)	Callistopsyllus terinus terinus
192			Flea (Carteretta carteri)	Carteretta carteri
193			Flea (Carteretta clavata)	Carteretta clavata
194			Flea (Catallagia arizonae)	Catallagia arizonae
195			Flea (Catallagia borealis)	Catallagia borealis
196			Flea (Catallagia calisheri)	Catallagia calisheri
197			Flea (Catallagia charlottensis)	Catallagia charlottensis
198			Flea (Catallagia decipiens)	Catallagia decipiens
199			Flea (Catallagia jellisoni)	Catallagia jellisoni
200			Flea (Catallagia mathesoni)	Catallagia mathesoni
201			Flea (Catallagia neweyi)	Catallagia neweyi
202			Flea (Catallagia sculleni rutherfordi)	Catallagia sculleni rutherfordi
203			Flea (Catallagia sculleni)	Catallagia sculleni
204			Flea (Catallagia sp. (Genus))	Catallagia sp. (Genus)
205			Flea (Catallagia wymani)	Catallagia wymani
206			Flea (Cediopsylla inaequalis interrupta)	Cediopsylla inaequalis interrupta
207			Flea (Cediopsylla inaequalis)	Cediopsylla inaequalis
208			Flea (Cediopsylla simplex)	Cediopsylla simplex
209			Flea (Cediopsylla tepolita)	Cediopsylla tepolita
210			Flea (Ceratophyllus adustus)	Ceratophyllus adustus
211			Flea (Ceratophyllus affinis)	Ceratophyllus affinis
212			Flea (Ceratophyllus altus)	Ceratophyllus altus
213			Flea (Ceratophyllus arcuegens)	Ceratophyllus arcuegens
214			Flea (Ceratophyllus celsus)	Ceratophyllus celsus
215			Flea (Ceratophyllus ciliatus)	Ceratophyllus ciliatus
216			Flea (Ceratophyllus coahuilensis)	Ceratophyllus coahuilensis
217			Flea (Ceratophyllus garei)	Ceratophyllus garei
218			Flea (Ceratophyllus gilvus)	Ceratophyllus gilvus
219			Flea (Ceratophyllus idius)	Ceratophyllus idius
220			Flea (Ceratophyllus lari)	Ceratophyllus lari
221			Flea (Ceratophyllus lunatus tundrensis)	Ceratophyllus lunatus tundrensis
222			Flea (Ceratophyllus niger)	Ceratophyllus niger
223			Flea (Ceratophyllus pelecani)	Ceratophyllus pelecani
224			Flea (Ceratophyllus petrochelidoni)	Ceratophyllus petrochelidoni
225			Flea (Ceratophyllus rauschi)	Ceratophyllus rauschi
226			Flea (Ceratophyllus riparius)	Ceratophyllus riparius
227			Flea (Ceratophyllus rossittensis)	Ceratophyllus rossittensis
228			Flea (Ceratophyllus scopulorum)	Ceratophyllus scopulorum
229			Flea (Ceratophyllus styx)	Ceratophyllus styx
230			Flea (Ceratophyllus vison)	Ceratophyllus vison
231			Flea (Chaetopsylla floridensis)	Chaetopsylla floridensis
232			Flea (Chaetopsylla lotoris)	Chaetopsylla lotoris
233			Flea (Chaetopsylla nidicola)	Chaetopsylla nidicola
234			Flea (Chaetopsylla setosa)	Chaetopsylla setosa
235			Flea (Chaetopsylla stewarti)	Chaetopsylla stewarti
236			Flea (Chaetopsylla tuberculaticeps)	Chaetopsylla tuberculaticeps
237			Flea (Conorhinopsylla stanfordi)	Conorhinopsylla stanfordi
238			Flea (Coptopsylla lamellifer)	Coptopsylla lamellifer

WA-KINGCO-20-0492-G-000085

	AQ	AR	AS	AT	AU	AV
191		M , 7		Chaetodipus goldmani		
192		M , 8		Chaetodipus hispidus		
193		M , 9		Chaetodipus intermedius		
194		M , 10		Chaetodipus lineatus		
195		M , 11		Chaetodipus nelsoni		
196		M , 12		Chaetodipus penicillatus		
197		M , 13		Chaetodipus pernix		
198		M , 14		Chaetodipus spinatus		
199		M , 15		Chaetopsylla floridensis		
200		N , 1		Chaetopsylla lotoris		
201		N , 2		Chaetopsylla nidicola		
202		N , 3		Chaetopsylla setosa		
203		N , 4		Chaetopsylla stewarti		
204		N , 5		Chaetopsylla tuberculiceps		
205		N , 6		Chamaeleonidae (Family)		
206		N , 7		Chelydra serpentina		
207		N , 8		Chinchilla lanigera		
208		N , 9		Chiroptera (Order)		
209		N , 10		Chlamydosaurus kingii		
210		N , 11		Choeronycteris (Genus)		
211		N , 12		Choeronycteris mexicana		
212		N , 13		Class Arachnida		
213		N , 14		Class Diplopoda		
214		N , 15		Clethrionomys (Genus)		
215		O , 1		Clethrionomys gapperi		
216		O , 2		Clethrionomys gapperi subsp occidentalis		
217		O , 3		Clethrionomys glariolus		
218		O , 4		Clethrionomys rutilus		
219		O , 5		Conepatus leuconotus		
220		O , 6		Connochaetes (Genus)		
221		O , 7		Connochaetes taurinus		
222		O , 8		Conorhinopsylla stanfordi		
223		O , 9		Coptopsylla lamellifer		
224		O , 10		Corrodopsylla barrerae		
225		O , 11		Corrodopsylla curvata		
226		O , 12		Corrodopsylla hamiltoni		
227		O , 13		Corvus (Genus)		
228		O , 14		Corypsylla jordani		
229		O , 15		Corypsylla kohlsi		
230				Corypsylla ornata		
231				Cricetulus (Genus)		
232				Cricetus cricetus		
233				Crotalus dirissus subsp unicolor		
234				Crotalus tigris		
235				Cryptotis parva		
236				Ctenocephalides canis		
237				Ctenocephalides felis		
238				Ctenophthalmus cabelleri		

	A	B	C
239		Parechovirus Detection and Identification	Dactylosporangium species
240		Parvovirus B19 Molecular Detection	Deinococcus species
241		Parvovirus B19 Serology	Dermacoccus species
242		Pathologic Evaluation of Tissues for Possible Infectious Etiologies	Dermatophilus species
243		Picornavirus Detection and Identification (Not Hepatitis A, Not Rhinovirus)	Dethiosulfovibrio species
244		Picornavirus Special Study	Dientamoeba fragilis
245		Polio Isolation and Genotyping	Dientamoeba species
246		Polio Serology	Dietzia maris
247		Polio Special Study	Dietzia species
248		Poxvirus Molecular Detection	Diphyllbothrium latum
249		Poxvirus Serology	Diphyllbothrium species
250		Puumala Hemorrhagic Fever Serology and Molecular Detection	Dipylidium caninum
251		Rabies Antemortem Human Testing	Dirofilaria species
252		Rabies Antibody Titer (Animal)	Dolosigranulum pigrum
253		Rabies Antibody Titer (Human)	Dysgonomonas species
254		Rabies Confirmatory Testing (Animal)	Echinococcus granulosus
255		Rabies Field Surveillance	Echinococcus multilocularis
256		Rabies Postmortem Human Testing	Echinococcus species
257		Rabies Special Study	Edwardsiella hoshinae
258		Rabies Virus Genetic Typing	Ehrlichia canis
259		Respiratory Virus (Non-Influenza) Case Follow-up	Ehrlichia chaffeensis
260		Respiratory Virus (Non-Influenza) Special Study	Ehrlichia ewingii
261		Respiratory Virus Molecular Detection (Non-Influenza)	Ehrlichia muris
262		Rickettsia Molecular Detection	Ehrlichia muris subsp. eauclairensis
263		Rickettsia Serology Spotted Fever Group (RMSF) Serology	Ehrlichia species
264		Rickettsia Serology Typhus Group Serology	Elizabethkingia meningoseptica
265		Rickettsia Special Study	Entamoeba coli
266		Rift Valley Fever (RVF) Testing	Entamoeba hartmanni
267		Rotavirus Detection	Entamoeba histolytica
268		Rotavirus Genotyping	Entamoeba species
269		Rubella Detection (PCR) and Genotyping	Enteric bacterium
270		Rubella Serology	Enterobacter aerogenes
271		Rubella Serology (IgM and IgG) and Avidity	Enterobacter amnigenus
272		Salmonella Identification and Serotyping	Enterobacter amnigenus biogroup II
273		Salmonella serotype Typhi (only) Serology	Enterobacter asburiae
274		Salmonella Study	Enterobacter cancerogenus
275		Salmonella Subtyping	Enterobacter cloacae
276		SARS-2 Serology	Enterobacter cloacae complex
277		SARS Molecular Detection	Enterobacter species
278		SARS Serology	Enterobacteriaceae
279		Schistosomiasis Serology	Enterobius vermicularis
280		Seoul Virus Testing	Enterococcus casseliflavus
281		Sexually Transmitted Infection (STI) Panel - Neisseria gonorrhoeae, Chlamydia tr	Enterococcus dispar
282		Shiga Toxin-producing E. coli Isolation from Enrichment Broth	Enterococcus durans
283		Simian Immunodeficiency Virus (SIV) and SIV/Human Immunodeficiency Virus (S	Enterococcus faecalis
284		Special Bacteriology Pathogen Study	Enterococcus faecium
285		Staphylococcal Toxic Shock Syndrome Toxin- Identification (ID)	Enterococcus gallinarum
286		Staphylococcus and Micrococcus - Identification (ID)	Enterococcus hirae

WA-KINGCO-20-0492-G-000087

	K	L	M	N
239	Tissue_Necrotic			
240	Tissue_Nodule			
241	Tissue_Placenta			
242	Tissue_Postmortem			
243	Tissue_Section			
244	Tissue_Skin (biopsy)			
245	TNA-Nucleic acid (Total)			
246	Tubing			
247	Ulcer			
248	Unknown			
249	Unknown drink			
250	Unknown food			
251	Urethral swab			
252	Urine			
253	Vacuum cleaner bag			
254	Vacuum cleaner filter			
255	Vegetable			
256	Vegetable, Beans			
257	Vegetable, Cabbage			
258	Vegetable, Lettuce			
259	Vegetable, Spinach			
260	Vegetable, Sprouts			
261	Vegetable, Sprouts_Alfalfa			
262	Vegetable, Tomato			
263	Vomit			
264	Wash Fluid			
265	Wash_Carcass			
266	Wastewater			
267	Water (environmental sample)			
268	Water Concentrate			
269	Water_Aquarium			
270	Water_Canal			
271	Water_Irrigation			
272	Water_Irrigation pond			
273	Water_Lake			
274	Water_Pond			
275	Water_Pool Filter Backwash			
276	Water_Purified			
277	Water_River			
278	Water_Run-off			
279	Water_Swimming pool			
280	Water_Tap			
281	Water_Well			
282	Whey samples			
283	White blood cells			
284	Wipe			
285	Wipe_skin Cleaning			
286	Wound			

WA-KINGCO-20-0492-G-000088

	O	P	Q
239	Supraaortic valve area		
240	Supraclavicular lymph node		
241	Tear duct		
242	Temporal fossa		
243	Temporal lobe		
244	Terminal ileum		
245	Testicle		
246	Throat		
247	Thumb		
248	Thumb nail		
249	Toe		
250	Toe_Big		
251	Toe_Fifth		
252	Toe_Fourth		
253	Toe_Second		
254	Toe_Third		
255	Toenail		
256	Tongue		
257	Tonsil		
258	Torso		
259	Trachea		
260	Tricuspid valve		
261	Trochanteric bursa		
262	Umbilical cord		
263	Umbilicus (Navel)		
264	Unknown		
265	Urethra		
266	Uterine adnexae		
267	Uterine horn		
268	Uterus		
269	Vagina		
270	Vein		
271	Vertebra		
272	Vocal cord		
273	Vulva		
274			
275			
276			
277			
278			
279			
280			
281			
282			
283			
284			
285			
286			

	W	X	Y	Z
239		Uruguay		
240		Uzbekistan		
241		Vanuatu		
242		Venezuela		
243		Vietnam		
244		Virgin Islands, British		
245		Virgin Islands of the U.S.		
246		Wallis and Futuna		
247		Western Sahara		
248		Yemen		
249		Zambia		
250		Zimbabwe		
251				
252				
253				
254				
255				
256				
257				
258				
259				
260				
261				
262				
263				
264				
265				
266				
267				
268				
269				
270				
271				
272				
273				
274				
275				
276				
277				
278				
279				
280				
281				
282				
283				
284				
285				
286				

	AA	AB	AC	AD
239		Kangaroo rat_Ord's	Lynx canadensis	
240		Kangaroo rat_Panamint	Lynx rufus	
241		Kangaroo rat_Phillips'	Macaca (Genus)	
242		Kangaroo rat_San Jose Island	Macaca fuscata	
243		Kangaroo rat_San Quintin	Macaca mulatta	
244		Kangaroo rat_Stephens'	Macropus (Genus)	
245		Kangaroo rat_Texas	Macropus robustus	
246		Kangaroo, Wallaby, Wallaroo (Genus Macropus)	Macropus rufus	
247		Kangaroo_Red	Macrotus californicus	
248		Kinkajou	Macrotus waterhousii	
249		Lagomorph (Order Lagomorpha)	Marmota (Genus)	
250		Lemur	Marmota baibacina	
251		Leopard	Marmota caligata	
252		Leopard_Snow	Marmota flaviventris	
253		Lion	Marmota marmota	
254		Lizard (Generic name)	Marmota monax	
255		Lizard_Bearded dragon (Generic name)	Marmota olympus	
256		Lizard_Chameleon (Family Chamaeleonidae)	Marmota vancouverensis	
257		Lizard_Chinese Water Dragon	Marsupalia (Superorder)	
258		Lizard_Frilled-neck Lizard	Martes americana	
259		Lizard_Gecko (Generic name)	Martes pennanti	
260		Lizard_Iguana (Generic name)	Megadontomys nelsoni	
261		Llama	Megadontomys thomasi	
262		Lorikeet (Generic name)	Mephitidae (Family)	
263		Lorikeet_Blue mountain (Rainbow)	Mephitis macroura	
264		Lynx	Mephitis mephitis	
265		Macaque (Genus Macaca)	Meriones (Genus)	
266		Macaque_Japanese	Meriones crassus	
267		Macaque_Rhesus	Meriones libycus	
268		Macaw (Genus Ara)	Meriones meridianus	
269		Margay	Meriones tamariscinus	
270		Marmoset (Genus Callithrix)	Meriones unguiculatus	
271		Marmoset_Weid's Black-tufted-ear	Mesocricetus (Genus)	
272		Marmot (Genus Marmota)	Mesocricetus auratus	
273		Marmot_Alpine	Mesocricetus brandti	
274		Marmot_Gray	Mesocricetus newtoni	
275		Marmot_Hoary	Mesocricetus raddei	
276		Marmot_Olympic	Microtus (Genus)	
277		Marmot_Vancouver	Microtus abbreviatus	
278		Marmot_Yellow-bellied	Microtus breweri	
279		Marsupial (Superorder Marsupalia)	Microtus californicus	
280		Marten_American	Microtus chrotorrhinus	
281		Meerkat	Microtus guatemalensis	
282		Mice_Deer (Genus Peromyscus)	Microtus longicaudus	
283		Mice_Oldfield (Genus Thomasomys)	Microtus longicaudus subsp coronarius	
284		Mink_American	Microtus mexicanus	
285		Mink_Sea	Microtus miurus	
286		Mole (Family Talpidae)	Microtus montanus	

WA-KINGCO-20-0492-G-000091

	AE	AF	AG	AH
239	Flea (Nearctopsylla georginia)	Megabothris bisetis		
240	Flea (Nearctopsylla hamata)	Megabothris clantoni		
241	Flea (Nearctopsylla hyrtachi)	Megabothris groenlandicus		
242	Flea (Nearctopsylla jordani)	Megabothris jamesoni		
243	Flea (Nearctopsylla martyoungi)	Megabothris lucifer		
244	Flea (Nearctopsylla princei)	Megabothris princei		
245	Flea (Nearctopsylla traubi)	Megabothris quirini		
246	Flea (Neopysylla inopina)	Megabothris similus		
247	Flea (Nosopsyllus faciatus)	Megabothris smiti		
248	Flea (Nosopsyllus laeviceps)	Megabothris spenceri		
249	Flea (Nosopsyllus londiniensis)	Megabothris weaveri		
250	Flea (Nycteridopsylla chapini)	Megabothris wilsoni		
251	Flea (Nycteridopsylla vancouverensis)	Megarhroglossus becki		
252	Flea (Odontopsyllus dentatus)	Megarhroglossus divisus		
253	Flea (Odontopsyllus multispinosus)	Megarhroglossus procus		
254	Flea (Opisocrostis vespertalis)	Megarhroglossus sicamus		
255	Flea (Opisodasys (Opisocrostis) enoplus)	Megarhroglossus sp. (Genus)		
256	Flea (Opisodasys (Opisocrostis) hollandi)	Meringis agilis		
257	Flea (Opisodasys (Opisocrostis) nesiotus)	Meringis altipecten		
258	Flea (Opisodasys (Opisocrostis) perotensis)	Meringis arachis		
259	Flea (Opisodasys (Opisocrostis) pseudarctomys)	Meringis bilsingi		
260	Flea (Opisodasys (Opisocrostis) robustus)	Meringis californicus		
261	Flea (Opisodasys keeni)	Meringis cummingi		
262	Flea (Orchopeas cadens)	Meringis deserti		
263	Flea (Orchopeas dieteri)	Meringis dipodomys		
264	Flea (Orchopeas fulleri)	Meringis disparalis		
265	Flea (Orchopeas howardi)	Meringis facilis		
266	Flea (Orchopeas latens)	Meringis hubbardi		
267	Flea (Orchopeas leucopus)	Meringis jamesoni		
268	Flea (Orchopeas neotomae)	Meringis nidi		
269	Flea (Orchopeas nepos)	Meringis parkeri		
270	Flea (Orchopeas sexdentatus)	Meringis rectus		
271	Flea (Orchopeas sp. (Genus))	Meringis shannoni		
272	Flea (Order Siphonaptera)	Meringis sp. (Genus)		
273	Flea (Oropsylla (Opisocrostis) labis)	Meringis vitabilis		
274	Flea (Oropsylla alaskensis)	Miostenopsylla arctica		
275	Flea (Oropsylla arctomys)	Miostenopsylla traubi		
276	Flea (Oropsylla augustsoni)	Myodopsylla collinsi		
277	Flea (Oropsylla bruneri)	Myodopsylla gentilis		
278	Flea (Oropsylla hirsuta)	Myodopsylla globata		
279	Flea (Oropsylla idahoensis)	Myodopsylla nordina		
280	Flea (Oropsylla labis)	Myodopsylla setosa		
281	Flea (Oropsylla montana)	Myodopsyllaoides peircei		
282	Flea (Oropsylla oregonensis)	Nearctopsylla brooksi		
283	Flea (Oropsylla ruprestris)	Nearctopsylla genalis		
284	Flea (Oropsylla silantiewi)	Nearctopsylla georginia		
285	Flea (Oropsylla spenceri)	Nearctopsylla hamata		
286	Flea (Oropsylla stanfordi)	Nearctopsylla hyrtachi		

	AM	AN	AO	AP
239			Flea (Corrodopsylla barrerae)	Corrodopsylla barrerae
240			Flea (Corrodopsylla curvata)	Corrodopsylla curvata
241			Flea (Corrodopsylla hamiltoni)	Corrodopsylla hamiltoni
242			Flea (Corypsylla jordani)	Corypsylla jordani
243			Flea (Corypsylla kohlsi)	Corypsylla kohlsi
244			Flea (Corypsylla ornata)	Corypsylla ornata
245			Flea (Ctenocephalides canis)	Ctenocephalides canis
246			Flea (Ctenocephalides felis)	Ctenocephalides felis
247			Flea (Ctenophthalmus cabelleroi)	Ctenophthalmus cabelleroi
248			Flea (Ctenophthalmus cryptotis)	Ctenophthalmus cryptotis
249			Flea (Ctenophthalmus expansis)	Ctenophthalmus expansis
250			Flea (Ctenophthalmus haagi)	Ctenophthalmus haagi
251			Flea (Ctenophthalmus myodosus)	Ctenophthalmus myodosus
252			Flea (Ctenophthalmus pseudagyrtes)	Ctenophthalmus pseudagyrtes
253			Flea (Ctenophthalmus sanborni)	Ctenophthalmus sanborni
254			Flea (Ctenophyllus armatus)	Ctenophyllus armatus
255			Flea (Dactylopsylla bluei)	Dactylopsylla bluei
256			Flea (Dactylopsylla digitenua)	Dactylopsylla digitenua
257			Flea (Dactylopsylla megasoma)	Dactylopsylla megasoma
258			Flea (Dactylopsylla neomexicana)	Dactylopsylla neomexicana
259			Flea (Dactylopsylla pentachaeta)	Dactylopsylla pentachaeta
260			Flea (Dactylopsylla percernis)	Dactylopsylla percernis
261			Flea (Delotelis hollandi)	Delotelis hollandi
262			Flea (Delotelis telegoni)	Delotelis telegoni
263			Flea (Diamanus montanus)	Diamanus montanus
264			Flea (Dinopsyllus (Opisocrostis) hirsutus)	Dinopsyllus (Opisocrostis) hirsutus
265			Flea (Dolichopsyllus stylosus)	Dolichopsyllus stylosus
266			Flea (Doratopsylla blarinae)	Doratopsylla blarinae
267			Flea (Doratopsylla wissemanni)	Doratopsylla wissemanni
268			Flea (Echidnophaga (Amphalius) runatus)	Echidnophaga (Amphalius) runatus
269			Flea (Echidnophaga gallinacea)	Echidnophaga gallinacea
270			Flea (Epitedia cavernicola)	Epitedia cavernicola
271			Flea (Epitedia faceta)	Epitedia faceta
272			Flea (Epitedia neotomae)	Epitedia neotomae
273			Flea (Epitedia scapani)	Epitedia scapani
274			Flea (Epitedia stanfordi)	Epitedia stanfordi
275			Flea (Epitedia stewarti)	Epitedia stewarti
276			Flea (Epitedia wenmanni)	Epitedia wenmanni
277			Flea (Euhoplopsyllus glacialis affinis)	Euhoplopsyllus glacialis affinis
278			Flea (Euhoplopsyllus glacialis foxi)	Euhoplopsyllus glacialis foxi
279			Flea (Euhoplopsyllus glacialis glacialis)	Euhoplopsyllus glacialis glacialis
280			Flea (Euhoplopsyllus glacialis lynx)	Euhoplopsyllus glacialis lynx
281			Flea (Euhoplopsyllus glacialis)	Euhoplopsyllus glacialis
282			Flea (Eumolpianus (Ceratophyllus) ciliatus)	Eumolpianus (Ceratophyllus) ciliatus
283			Flea (Eumolpianus cyrturus)	Eumolpianus cyrturus
284			Flea (Eumolpianus eumolpi)	Eumolpianus eumolpi
285			Flea (Eumolpianus eutamiadis)	Eumolpianus eutamiadis
286			Flea (Eumolpianus fornacis)	Eumolpianus fornacis

	AQ	AR	AS	AT	AU	AV
239				Ctenophthalmus cryptotis		
240				Ctenophthalmus expansis		
241				Ctenophthalmus haagi		
242				Ctenophthalmus myodosus		
243				Ctenophthalmus pseudagyrtis		
244				Ctenophthalmus sanborni		
245				Ctenophyllus armatus		
246				Cynomys (Genus)		
247				Cynomys gunnisoni		
248				Cynomys leucurus		
249				Cynomys ludovicianus		
250				Cynomys mexicanus		
251				Cynomys parvidens		
252				Dactylopsylla bluei		
253				Dactylopsylla digitenua		
254				Dactylopsylla megasoma		
255				Dactylopsylla neomexicana		
256				Dactylopsylla pentachaeta		
257				Dactylopsylla percernis		
258				Dama dama		
259				Dasypus novemcinctus		
260				Delotelis hollandi		
261				Delotelis telegoni		
262				Dermacentor albipictus		
263				Dermacentor andersoni		
264				Dermacentor hunteri		
265				Dermacentor marginatus		
266				Dermacentor nitens		
267				Dermacentor occidentalis		
268				Dermacentor parumapertus		
269				Dermacentor reticulatus		
270				Dermacentor spp.		
271				Dermacentor variabilis		
272				Desmodus rotundus		
273				Diamanus montanus		
274				Diceros bicornis		
275				Didelphis virginiana		
276				Dinopsyllus (Opisocrostitis) hirsutus		
277				Dipodomys agilis		
278				Dipodomys deserti		
279				Dipodomys elator		
280				Dipodomys gravipes		
281				Dipodomys heermanni		
282				Dipodomys ingens		
283				Dipodomys insularis		
284				Dipodomys margaritae		
285				Dipodomys merriami		
286				Dipodomys microps		

	A	B	C
287		Staphylococcus aureus Detection - Foodborne Outbreak	Enterococcus raffinosus
288		Streptococcus (Beta Hemolytic Strep) Typing	Enterococcus species
289		Streptococcus (Catalase-Negative, Gram-Positive Coccus) Identification	Enterovirus
290		Streptococcus (Catalase-Negative, Gram-Positive Coccus) Identification and Antimi	Enterovirus A
291		Streptococcus ABCs Surveillance Study	Enterovirus A71
292		Streptococcus pneumoniae Typing	Enterovirus B
293		Streptococcus Study	Enterovirus C
294		Strongyloidiasis Serology	Enterovirus D
295		Syphilis Serology	Enterovirus D68
296		Tick Borne Encephalitis (TBE) Testing	Epidermophyton floccosum
297		Toxocariasis Serology	Erwinia species
298		Toxoplasmosis Special Study	Escherichia blattae
299		Treponema pallidum Molecular Detection Study	Escherichia coli
300		Treponema pallidum Molecular Typing Study	Escherichia coli, serogroup O157
301		Trichinellosis Serology	Escherichia coli, serotype O157:H7
302		Trichomonas Susceptibility	Escherichia fergusonii
303		Trypanosoma cruzi Molecular Detection - Insects	Escherichia species
304		Varicella Zoster Virus (VZV) Avidity	Eubacterium (Clostridium) barkeri
305		Varicella Zoster Virus (VZV) Genotyping (Clade Type)	Eubacterium species
306		Varicella Zoster Virus (VZV) Intrathecal Antibody Detection	Exiguobacterium aurantiacum
307		Varicella Zoster Virus (VZV) Serology	Exophiala dermatitidis
308		Varicella Zoster Virus Detection (Wild-type vs. Vaccine)	Exophiala moniliae
309		Vibrio cholerae Identification and Subtyping	Exophiala species
310		Vibrio cholerae Serology	Exophiala xenobiotica
311		Vibrio Subtyping	Exserohilum rostratum
312		Vibrio, Aeromonas, and Related Organisms Identification	Facklamia species
313		Vibrio, Aeromonas, and Related Organisms Study	Fasciola hepatica
314		Waterborne Parasite Special Study	Filarial worm
315		Yersinia (non-Y. pestis) and Other Enterobacterales Subtyping	Flavobacterium species
316		Yersinia (non-Y. pestis) and Other Enterobacterales Identification	Fly larvae
317		Yersinia pestis Culture and Identification	Fonsecaea compacta
318		Yersinia pestis Serology	Fonsecaea pedrosoi
319		Yersinia pestis Special Study	Fonsecaea species
320			Francisella novicida
321			Francisella species
322			Francisella tularensis
323			Francisella tularensis subsp holarctica
324			Francisella tularensis subsp mediasiatica
325			Francisella tularensis subsp tularensis
326			Fungus
327			Fusarium proliferatum
328			Fusarium solani
329			Fusarium species
330			Fusobacterium necrophorum
331			Fusobacterium species
332			Genus Lyssavirus
333			Geomyces pannorum
334			Giardia lamblia
335			Giardia species

	K	L	M	N
287	Wound drainage			
288	Wound exudate			
289	Wound_Surgical			
290				
291				
292				
293				
294				
295				
296				
297				
298				
299				
300				
301				
302				
303				
304				
305				
306				
307				
308				
309				
310				
311				
312				
313				
314				
315				
316				
317				
318				
319				
320				
321				
322				
323				
324				
325				
326				
327				
328				
329				
330				
331				
332				
333				
334				
335				

	AA	AB	AC	AD
287		Mole_Broad-footed	Microtus ochrogaster	
288		Mole_Eastern	Microtus oeconomus	
289		Mole_Red-footed	Microtus oregoni	
290		Mole_Snow	Microtus pennsylvanicus	
291		Mongoose (Family Herpestidae)	Microtus pinetorum	
292		Mongoose_Java (Indian)	Microtus quasiater	
293		Monkey (Generic name)	Microtus richardsoni	
294		Monkey_Brown capuchin	Microtus townsendii	
295		Monkey_Capuchin (Genus Cebus)	Microtus umbrosus	
296		Monkey_De Brazza's	Microtus xanthognathus	
297		Monkey_Owl	Molossidae (Family)	
298		Monkey_Squirrel, Common	Molossus ater	
299		Monkey_Tamarin (Genus Sanguinus)	Mormoops blainvillii	
300		Monkey_Tamarin, Cotton Top	Mormoops megalophylla	
301		Moose	Mus musculus	
302		Mouse (Generic name)	Muscardinus avellanarius	
303		Mouse, Northern Rock	Mustela (Genus)	
304		Mouse_Angel Island	Mustela erminea	
305		Mouse_Aztec	Mustela frenata	
306		Mouse_Black-eared	Mustela nigripes	
307		Mouse_Brush	Mustela nivalis subsp rixosa	
308		Mouse_Cactus	Mustela putorius subsp furo	
309		Mouse_California	Mustela siberica	
310		Mouse_Canyon	Myocastor coypus	
311		Mouse_Chihuahuan	Myotis (Genus)	
312		Mouse_Cotton	Myotis auriculus	
313		Mouse_Deer	Myotis austroriparius	
314		Mouse_Deer Burt's	Myotis californicus	
315		Mouse_Deer, Big	Myotis ciliolabrum	
316		Mouse_Deer, Blackish	Myotis evotis	
317		Mouse_Deer, Brown	Myotis grisescens	
318		Mouse_Deer, Chiapan	Myotis keenii	
319		Mouse_Deer, Crested-tailed	Myotis leibii	
320		Mouse_Deer, Dickey's	Myotis lucifugus	
321		Mouse_Deer, El Carrizo	Myotis occultus	
322		Mouse_Deer, Guatemalan	Myotis sodalis	
323		Mouse_Deer, Mexican	Myotis thysanodes	
324		Mouse_Deer, Michoacan	Myotis velifer	
325		Mouse_Deer, Nelson's Giant	Myotis vivesi	
326		Mouse_Deer, Northwestern	Myotis volans	
327		Mouse_Deer, Pemberton's	Myotis yumanensis	
328		Mouse_Deer, Puebla	Nasua (Genus)	
329		Mouse_Deer, Slender-tailed	Nasua narica	
330		Mouse_Deer, Stirton's	Nasua nasua	
331		Mouse_Deer, Thomas' Giant	Neotoma (Genus)	
332		Mouse_Deer, Yucatan	Neotoma albigula	
333		Mouse_Deer, Zacatecan	Neotoma anthonyi	
334		Mouse_Deer, Zempoaltepec	Neotoma augustapalata	
335		Mouse_Dormouse, Common	Neotoma bryanti	

WA KINGCO 20-0492 G-000097

	AE	AF	AG	AH
287	Flea (Oropsylla tuberculata cynomuris)	Nearctopsylla jordani		
288	Flea (Oropsylla tuberculata tuberculata)	Nearctopsylla martyoungi		
289	Flea (Oropsylla washingtonensis)	Nearctopsylla princei		
290	Flea (P. echinophagoides)	Nearctopsylla traubi		
291	Flea (Paratyphloceras oregonensis)	Neopysylla inopina		
292	Flea (Peromyscopsylla draco)	Nosopsyllus faciatus		
293	Flea (Peromyscopsylla ebrighi)	Nosopsyllus laeviceps		
294	Flea (Peromyscopsylla hamifer)	Nosopsyllus londiniensis		
295	Flea (Peromyscopsylla hesperomys)	Nycteridopsylla chapini		
296	Flea (Peromyscopsylla ostibirica)	Nycteridopsylla vancouverensis		
297	Flea (Peromyscopsylla scotti)	Odontopsyllus dentatus		
298	Flea (Peromyscopsylla selenis)	Odontopsyllus multispinosus		
299	Flea (Peromyscopsylla catatina)	Opisocrostis vespertalis		
300	Flea (Phalacropsylla allos)	Opisodasys (Opisocrostis) enoplus		
301	Flea (Phalacropsylla hamata)	Opisodasys (Opisocrostis) hollandi		
302	Flea (Phalacropsylla morlani)	Opisodasys (Opisocrostis) nesiotus		
303	Flea (Phalacropsylla nivalis)	Opisodasys (Opisocrostis) perotensis		
304	Flea (Phalacropsylla oregonensis)	Opisodasys (Opisocrostis) pseudarctomys		
305	Flea (Phalacropsylla paradisea)	Opisodasys (Opisocrostis) robustus		
306	Flea (Pleochaetis exilis)	Opisodasys keeni		
307	Flea (Pleochaetis mundus)	Orchopeas cadens		
308	Flea (Pleochaetis paramundus)	Orchopeas dieteri		
309	Flea (Pleochaetis sp. (Genus))	Orchopeas fulleri		
310	Flea (Plusaetis asetus)	Orchopeas howardi		
311	Flea (Plusaetis aztecus)	Orchopeas latens		
312	Flea (Plusaetis dolens)	Orchopeas leucopus		
313	Flea (Plusaetis mathesoni)	Orchopeas neotomae		
314	Flea (Plusaetis parus)	Orchopeas nepos		
315	Flea (Plusaetis ponsi)	Orchopeas sexdentatus		
316	Flea (Plusaetis sibynus)	Orchopeas sp. (Genus)		
317	Flea (Plusaetis soberoni)	Order Araneae		
318	Flea (Plusaetis vermiformis)	Order Mesostigmata		
319	Flea (Polygenis adocetus)	Order Phthiraptera		
320	Flea (Polygenis floridanus)	Order Siphonaptera		
321	Flea (Polygenis gwyni)	Oropsylla (Opisocrostis) labis		
322	Flea (Polygenis martinezbaezi)	Oropsylla alaskensis		
323	Flea (Polygenis odiosus)	Oropsylla arctomys		
324	Flea (Polygenis rozeboomi)	Oropsylla augustsoni		
325	Flea (Polygenis sp. (Genus))	Oropsylla bruneri		
326	Flea (Polygenis vazquezi)	Oropsylla hirsuta		
327	Flea (Polygenis vulcanius)	Oropsylla idahoensis		
328	Flea (Pulex alverazi)	Oropsylla labis		
329	Flea (Pulex irritans)	Oropsylla montana		
330	Flea (Pulex porcinus)	Oropsylla oregonensis		
331	Flea (Pulex simulans)	Oropsylla ruprestris		
332	Flea (Pulex sinoculus)	Oropsylla silantiewi		
333	Flea (Pulex sp. (Genus))	Oropsylla spenceri		
334	Flea (Rhadinopsylla arborea)	Oropsylla stanfordi		
335	Flea (Rhadinopsylla difficilis)	Oropsylla tuberculata cynomuris		

	AM	AN	AO	AP
287			Flea (Eumolpianus oraius)	Eumolpianus oraius
288			Flea (Eumolpianus polumus)	Eumolpianus polumus
289			Flea (Foxella ignota)	Foxella ignota
290			Flea (Geusibia ashcrafti)	Geusibia ashcrafti
291			Flea (Haemaphysalis leporispalustrus)	Haemaphysalis leporispalustrus
292			Flea (Haemaphysalis sp. (Genus))	Haemaphysalis sp. (Genus)
293			Flea (Hoplopsyllus anomalus)	Hoplopsyllus anomalus
294			Flea (Hoplopsyllus pectinatus)	Hoplopsyllus pectinatus
295			Flea (Hormopsylla kyriophila)	Hormopsylla kyriophila
296			Flea (Hystrichopsylla dippiei)	Hystrichopsylla dippiei
297			Flea (Hystrichopsylla kris)	Hystrichopsylla kris
298			Flea (Hystrichopsylla occidentalis linsdalei)	Hystrichopsylla occidentalis linsdalei
299			Flea (Hystrichopsylla occidentalis)	Hystrichopsylla occidentalis
300			Flea (Hystrichopsylla orophila)	Hystrichopsylla orophila
301			Flea (Hystrichopsylla schefferi)	Hystrichopsylla schefferi
302			Flea (Hystrichopsylla sp. (Genus))	Hystrichopsylla sp. (Genus)
303			Flea (Jellisoni doratopsylla)	Jellisonia doratopsylla
304			Flea (Jellisonia bonia)	Jellisonia bonia
305			Flea (Jellisonia bullisi)	Jellisonia bullisi
306			Flea (Jellisonia hayesi)	Jellisonia hayesi
307			Flea (Jellisonia ironsi)	Jellisonia ironsi
308			Flea (Jellisonia johnsonae)	Jellisonia johnsonae
309			Flea (Jellisonia klotsi)	Jellisonia klotsi
310			Flea (Jellisonia wisemani)	Jellisonia wisemani
311			Flea (Jordanopsylla allredi)	Jordanopsylla allredi
312			Flea (Kohlsia azuerensis)	Kohlsia azuerensis
313			Flea (Kohlsia campaniger)	Kohlsia campaniger
314			Flea (Kohlsia cora)	Kohlsia cora
315			Flea (Kohlsia felteni)	Kohlsia felteni
316			Flea (Kohlsia fournieri)	Kohlsia fournieri
317			Flea (Kohlsia gammonsi)	Kohlsia gammonsi
318			Flea (Kohlsia graphis)	Kohlsia graphis
319			Flea (Kohlsia keenani)	Kohlsia keenani
320			Flea (Kohlsia linni)	Kohlsia linni
321			Flea (Kohlsia martini)	Kohlsia martini
322			Flea (Kohlsia mojica)	Kohlsia mojica
323			Flea (Kohlsia ortizi)	Kohlsia ortizi
324			Flea (Kohlsia osgoodi)	Kohlsia osgoodi
325			Flea (Kohlsia pelaezi)	Kohlsia pelaezi
326			Flea (Kohlsia tiptoni)	Kohlsia tiptoni
327			Flea (Kohlsia traubi)	Kohlsia traubi
328			Flea (Kohlsia uniseta)	Kohlsia uniseta
329			Flea (Kohlsia whartoni)	Kohlsia whartoni
330			Flea (Leptopsylla segnis)	Leptopsylla segnis
331			Flea (Malaraeus eremicus)	Malaraeus eremicus
332			Flea (Malaraeus sinomus)	Malaraeus sinomus
333			Flea (Malaraeus sp. (Genus))	Malaraeus sp. (Genus)
334			Flea (Malaraeus telchinus)	Malaraeus telchinus
335			Flea (Malaraeus vonfintelis)	Malaraeus vonfintelis

WA KINGCO 20-0492-G-000000

	AQ	AR	AS	AT	AU	AV
287				Dipodomys nelsoni		
288				Dipodomys nitratoides		
289				Dipodomys ordii		
290				Dipodomys panamintinus		
291				Dipodomys phillipsii		
292				Dipodomys spectabilis		
293				Dipodomys stephensi		
294				Dipodomys venustus		
295				Dipodomys venustus subsp elephantinus		
296				Dolichopsyllus stylosus		
297				Doratopsylla blarinae		
298				Doratopsylla wissemanni		
299				Echidnophaga (Amphalius) runatus		
300				Echidnophaga gallinacea		
301				Enhydra lutris		
302				Epitedia cavernicola		
303				Epitedia faceta		
304				Epitedia neotomae		
305				Epitedia scapani		
306				Epitedia stanfordi		
307				Epitedia stewarti		
308				Epitedia wenmanni		
309				Eptesicus fuscus		
310				Equus (Genus)		
311				Equus burchellii		
312				Equus caballus		
313				Equus zebra		
314				Erethizon dorsatum		
315				Erinaceinae (Subfamily)		
316				Euderma maculatum		
317				Euhoplopsyllus glacialis		
318				Euhoplopsyllus glacialis affinis		
319				Euhoplopsyllus glacialis foxi		
320				Euhoplopsyllus glacialis glacialis		
321				Euhoplopsyllus glacialis lynx		
322				Eumolpianus (Ceratophyllus) ciliatus		
323				Eumolpianus cyrturus		
324				Eumolpianus eumolpi		
325				Eumolpianus eutamiadis		
326				Eumolpianus fornacis		
327				Eumolpianus oraius		
328				Eumolpianus polumus		
329				Eumops glacinus		
330				Eumops perotis		
331				Eumops underwoodi		
332				Family Culicidae		
333				Family Oestridae		
334				Family Simuliidae		
335				Felis catus		

	A	B	C
336			Gnathostoma species
337			Gordonia species
338			Gordonia sputi
339			Gordonia terrae
340			Gram positive coccobacillus (GPBC)
341			Gram-negative coccus
342			Gram-negative diplococcus
343			Gram-negative rod
344			Gram-positive coccus
345			Gram-positive rod
346			Gram-variable bacillus
347			Gram-variable coccobacillus
348			Gram-variable coccus
349			Gram-variable rod
350			Granulicatella adiacens
351			Granulicatella species
352			Grimontia hollisae
353			Haemophilus aphrophilus
354			Haemophilus ducreyi
355			Haemophilus haemolyticus
356			Haemophilus influenzae
357			Haemophilus influenzae, not B
358			Haemophilus parainfluenzae
359			Haemophilus paraphrophilus
360			Haemophilus species
361			Hafnia alvei
362			Hafnia species
363			Helcococcus kunzii
364			Helicobacter pylori
365			Helicobacter species
366			Helminthosporium species
367			Hepatitis A
368			Hepatitis B
369			Hepatitis C
370			Hepatitis, non A, B, or C
371			Histoplasma capsulatum
372			Histoplasma species
373			Hormographiella species
374			Human Immunodeficiency Virus (HIV)
375			Hymenolepis species
376			Inactivated Poliovirus
377			Influenza virus
378			Iodamoeba species
379			Isospora species
380			Ixodes Ovatus Ehrlichia
381			Janibacter species
382			Kingella kingae
383			Klebsiella aerogenes

	AA	AB	AC	AD
336		Mouse_False Canyon	Neotoma bunker	
337		Mouse_Florida	Neotoma cinerea	
338		Mouse_Golden	Neotoma floridana	
339		Mouse_Hairy-tailed Bolo	Neotoma fuscipes	
340		Mouse_Harvest (Genus Reithrodontomys)	Neotoma goldmani	
341		Mouse_Harvest, Chiriqui	Neotoma lepida	
342				
343		Mouse_Harvest, Darien	Neotoma martinensis	
344		Mouse_Harvest, Eastern	Neotoma mexicana	
345		Mouse_Harvest, Fulvous	Neotoma micropus	
346		Mouse_Harvest, Hairy	Neotoma nelsoni	
347		Mouse_Harvest, Mexican	Neotoma palatina	
348		Mouse_Harvest, Narrow-nosed	Neotoma phenax	
349		Mouse_Harvest, Plains	Neotoma stephensi	
350		Mouse_Harvest, Rodriguez's	Neotoma varia	
351		Mouse_Harvest, Saltmarsh	Neovison macrodon	
352		Mouse_Harvest, Short-nosed	Neovison vison	
353		Mouse_Harvest, Slender	Noctilio (Genus)	
354		Mouse_Harvest, Small-toothed	Noctilio leporinus	
355		Mouse_Harvest, Sonoran	Nycticeius humeralis	
356		Mouse_Harvest, Sumichrast's	Nyctinomops femorosaccus	
357		Mouse_Harvest, Volcano	Nyctinomops macrotis	
358		Mouse_Harvest, Western	Ochotona (Genus)	
359		Mouse_House	Ochotona princeps	
360		Mouse_Jumping, Meadow	Ochrotomys nuttalli	
361		Mouse_Jumping, Pacific	Odocoileus hemionus	
362		Mouse_Jumping, Western	Odocoileus hemionus subsp columbianus	
363		Mouse_Marsh	Odocoileus virginianus	
364		Mouse_Merriam's (Mesquite)	Oligoryzomys (Genus)	
365		Mouse_Nayarit	Ondatra zibethicus	
366		Mouse_Neonatal (Generic name)	Onychomys leucogaster	
367		Mouse_Northern Grasshopper	Onychomys torridus	
368		Mouse_Oldfield	Oreamnos (Genus)	
369		Mouse_Perote	Orxy (Genus)	
370		Mouse_Pinyon	Oryctolagus (Genus)	
371		Mouse_Plateau	Oryctolagus cuniculus	
372		Mouse_Pocket, Arizona	Oryx gazella	
373		Mouse_Pocket, Bailey's	Oryzomys subflavus	
374		Mouse_Pocket, California	Osgoodomys banderanus	
375		Mouse_Pocket, Desert	Ovis (Genus)	
376		Mouse_Pocket, Goldman's	Ovis aries	
377		Mouse_Pocket, Great Basin	Ovis canadensis	
378		Mouse_Pocket, Hispid	Ovis dalli	
379		Mouse_Pocket, Lined	Pan (Genus)	
380		Mouse_Pocket, Little	Panthera pardus	
381		Mouse_Pocket, Little Desert	Panthera leo	
382		Mouse_Pocket, Long-tailed	Panthera onca	
383		Mouse_Pocket, Merriam's	Panthera tigris	

	AE	AF	AG	AH
336	Flea (Rhadinopsylla fraterna)	Oropsylla tuberculata tuberculata		
337	Flea (Rhadinopsylla heiseri)	Oropsylla washingtonensis		
338	Flea (Rhadinopsylla linta)	P. echinophagoides		
339	Flea (Rhadinopsylla liventricosa)	Paratyphloceras oregonensis		
340	Flea (Rhadinopsylla media)	Pediculus sp (Genus) Nit, Louse		
341	Flea (Rhadinopsylla mexicana)	Peromyscopsylla draco		
342				
343	Flea (Rhadinopsylla multidenticulata)	Peromyscopsylla ebrighti		
344	Flea (Rhadinopsylla orama)	Peromyscopsylla hamifer		
345	Flea (Rhadinopsylla sectilis goodi)	Peromyscopsylla hesperomys		
346	Flea (Rhadinopsylla sectilis sectilis)	Peromyscopsylla ostsibirica		
347	Flea (Rhadinopsylla sp. (Genus))	Peromyscopsylla scotti		
348	Flea (Spicata bottaceps)	Peromyscopsylla selenis		
349	Flea (Spicata comis)	Peromyscopsylla catatina		
350	Flea (Spicata minidoka)	Phalacropsylla allos		
351	Flea (Spicata monticola)	Phalacropsylla hamata		
352	Flea (Spicata moorei)	Phalacropsylla morlani		
353	Flea (Spicata nuditenacula)	Phalacropsylla nivalis		
354	Flea (Spicata pacifica)	Phalacropsylla oregonensis		
355	Flea (Spicata rara)	Phalacropsylla paradisea		
356	Flea (Stenistomera alpina)	Pleochaetis exilis		
357	Flea (Stenistomera hubbardi)	Pleochaetis mundus		
358	Flea (Stenistomera macrodactyla)	Pleochaetis paramundus		
359	Flea (Stenoponia americana)	Pleochaetis sp. (Genus)		
360	Flea (Stenoponia ponera)	Plusaetis dolens		
361	Flea (Sternopsylla distincta texana)	Plusaetis vermiformis		
362	Flea (Sternopsylla distincta)	Plusaetis asetus		
363	Flea (Strepsylla dalmati)	Plusaetis aztecus		
364	Flea (Strepsylla davisae)	Plusaetis mathesoni		
365	Flea (Strepsylla fautini)	Plusaetis parus		
366	Flea (Strepsylla machadoi)	Plusaetis ponsi		
367	Flea (Strepsylla mina)	Plusaetis sibynus		
368	Flea (Strepsylla schmidt)	Plusaetis soberoni		
369	Flea (Strepsylla taluna)	Polygenis adocetus		
370	Flea (Strepsylla villai)	Polygenis floridanus		
371	Flea (Tarsopsylla octodecimdentata)	Polygenis gwyni		
372	Flea (Thrassis acamantis)	Polygenis martinezbaezi		
373	Flea (Thrassis aridis)	Polygenis odiosus		
374	Flea (Thrassis arizonensis)	Polygenis rozeboomi		
375	Flea (Thrassis bacchi)	Polygenis sp. (Genus)		
376	Flea (Thrassis fatus)	Polygenis vazquezi		
377	Flea (Thrassis francisi)	Polygenis vulcanius		
378	Flea (Thrassis pandorae)	Pulex alverazi		
379	Flea (Thrassis petiolatus)	Pulex irritans		
380	Flea (Thrassis sp. (Genus))	Pulex porcinus		
381	Flea (Thrassis spenceri)	Pulex simulans		
382	Flea (Thrassis stanfordi)	Pulex sinoculus		
383	Flea (Tiamastus cavicola)	Pulex sp. (Genus)		

	AM	AN	AO	AP
336			Flea (Margopsylla tolli)	Margopsylla tolli
337			Flea (Megabothris abantis)	Megabothris abantis
338			Flea (Megabothris acerbus)	Megabothris acerbus
339			Flea (Megabothris adversus)	Megabothris adversus
340			Flea (Megabothris asio megacolpus)	Megabothris asio megacolpus
341			Flea (Megabothris asio orectus)	Megabothris asio orectus
342				
343			Flea (Megabothris atrox)	Megabothris atrox
344			Flea (Megabothris bisetis)	Megabothris bisetis
345			Flea (Megabothris clantoni)	Megabothris clantoni
346			Flea (Megabothris groenlandicus)	Megabothris groenlandicus
347			Flea (Megabothris jamesoni)	Megabothris jamesoni
348			Flea (Megabothris lucifer)	Megabothris lucifer
349			Flea (Megabothris princei)	Megabothris princei
350			Flea (Megabothris quirini)	Megabothris quirini
351			Flea (Megabothris similus)	Megabothris similus
352			Flea (Megabothris smiti)	Megabothris smiti
353			Flea (Megabothris spenceri)	Megabothris spenceri
354			Flea (Megabothris weaveri)	Megabothris weaveri
355			Flea (Megabothris wilsoni)	Megabothris wilsoni
356			Flea (Megarthroglossus becki)	Megarthroglossus becki
357			Flea (Megarthroglossus divisus)	Megarthroglossus divisus
358			Flea (Megarthroglossus proculus)	Megarthroglossus proculus
359			Flea (Megarthroglossus sicamus)	Megarthroglossus sicamus
360			Flea (Megarthroglossus sp. (Genus))	Megarthroglossus sp. (Genus)
361			Flea (Meringis agilis)	Meringis agilis
362			Flea (Meringis altipecten)	Meringis altipecten
363			Flea (Meringis arachis)	Meringis arachis
364			Flea (Meringis bilsingi)	Meringis bilsingi
365			Flea (Meringis californicus)	Meringis californicus
366			Flea (Meringis cummingi)	Meringis cummingi
367			Flea (Meringis deserti)	Meringis deserti
368			Flea (Meringis dipodomys)	Meringis dipodomys
369			Flea (Meringis disparalis)	Meringis disparalis
370			Flea (Meringis facilis)	Meringis facilis
371			Flea (Meringis hubbardi)	Meringis hubbardi
372			Flea (Meringis jamesoni)	Meringis jamesoni
373			Flea (Meringis nidi)	Meringis nidi
374			Flea (Meringis parkeri)	Meringis parkeri
375			Flea (Meringis rectus)	Meringis rectus
376			Flea (Meringis shannoni)	Meringis shannoni
377			Flea (Meringis sp. (Genus))	Meringis sp. (Genus)
378			Flea (Meringis vitabilis)	Meringis vitabilis
379			Flea (Mioctenopsylla arctica)	Mioctenopsylla arctica
380			Flea (Mioctenopsylla traubi)	Mioctenopsylla traubi
381			Flea (Myodopsylla collinsi)	Myodopsylla collinsi
382			Flea (Myodopsylla gentilis)	Myodopsylla gentilis
383			Flea (Myodopsylla globata)	Myodopsylla globata

	AQ	AR	AS	AT	AU	AV
336				Felis silvestris		
337				Foxella ignota		
338				Galago (Genus)		
339				Galea spixii		
340				Gallus gallus		
341				Gazella (Genus)		
342						
343				Genus Chrysops		
344				Geomys arenarius		
345				Geomys bursarius		
346				Geomys personatus		
347				Geomys pinetis		
348				Gerbillus (Genus)		
349				Geusibia ashcrafti		
350				Giraffa camelopardalis		
351				Glaucomys (Genus)		
352				Glaucomys sabrinus		
353				Glaucomys volans		
354				Gorilla gorilla		
355				Gulo gulo		
356				Gulo gulo subsp luscus		
357				Habromys lepturus		
358				Habromys lophurus		
359				Haemaphysalis leporispalustris		
360				Haemaphysalis sp. (Genus)		
361				Haemaphysalis spp.		
362				Herpestes javanicus		
363				Herpestidae (Family)		
364				Hippotragus (Genus)		
365				Hippotragus equinus		
366				Hippotragus niger		
367				Hodomys alleni		
368				Hoplopsyllus anomalus		
369				Hoplopsyllus pectinatus		
370				Hormopsylla kyriophila		
371				Hystrichopsylla dippei		
372				Hystrichopsylla kris		
373				Hystrichopsylla occidentalis		
374				Hystrichopsylla occidentalis linsdalei		
375				Hystrichopsylla orophila		
376				Hystrichopsylla schefferi		
377				Hystrichopsylla sp. (Genus)		
378				Ictonyx striatus		
379				Idionycteris phyllotis		
380				Isthmomys flavidus		
381				Isthmomys pirrensis		
382				Ixodes affinis		
383				Ixodes angustus		

	A	B	C
384			Klebsiella oxytoca
385			Klebsiella pneumoniae
386			Klebsiella pneumoniae group
387			Klebsiella pneumoniae subsp. ozaenae
388			Klebsiella pneumoniae subsp. pneumoniae
389			Klebsiella species
390			Klebsiella variicola
391			Kluyvera cryocrescens
392			Kocuria kristinae
393			Kocuria species
394			Lactobacillus species
395			Lactococcus garviae
396			Lautropia mirabilis
397			Laxitextum bicolor
398			Lecytophora mutabilis
399			Legionella brunensis
400			Legionella longbeachae
401			Legionella pneumophila
402			Legionella pneumophila serogroup 1
403			Legionella pneumophila serogroup 14
404			Legionella species
405			Leishmania donovani
406			Leishmania species
407			Leptospira interrogans
408			Leptospira species
409			Leptotrichia buccalis
410			Leptotrichia species
411			Leuconostoc species
412			Leucosporidium scottii
413			Listeria ivanovii subsp. londoniensis
414			Listeria monocytogenes
415			Listeria species
416			Loa loa
417			Lomentospora prolificans
418			Luteococcus
419			Maggot
420			Malassezia furfur
421			Malassezia pachydermatis
422			Mansonella ozzardi
423			Mansonella perstans
424			Mansonella species
425			Measles virus
426			Microaerophilic bacteria
427			Microascus species

	AA	AB	AC	AD
384		Mouse_Pocket, Narrow-skulled	Pantherophis guttatus	
385		Mouse_Pocket, Nelson's	Papio (Genus)	
386		Mouse_Pocket, Olive-backed	Pappogeomys castanops	
387		Mouse_Pocket, Plains	Pecari tajacu	
388		Mouse_Pocket, Rock	Perdix perdix	
389		Mouse_Pocket, San Diego	Perognathus alticola	
390		Mouse_Pocket, San Joaquin	Perognathus amplus	
391		Mouse_Pocket, Silky	Perognathus fasciatus	
392		Mouse_Pocket, Sinaloa	Perognathus flavescens	
393		Mouse_Pocket, Spiny	Perognathus flavus	
394		Mouse_Pocket, White-eared	Perognathus inornatus	
395		Mouse_Pocket, Yellow-eared	Perognathus longimembris	
396		Mouse_San Esteban Island	Perognathus merriami	
397		Mouse_Santa Cruz	Perognathus parvus	
398		Mouse_Sitka	Perognathus parvus subsp xanthonotus	
399		Mouse_Slevin's	Peromyscus (Genus)	
400		Mouse_Southern Grasshopper	Peromyscus aztecus	
401		Mouse_White-ankled	Peromyscus boylii	
402		Mouse_White-footed Deer	Peromyscus bullatus	
403		Muskrat	Peromyscus californicus	
404		Nutria	Peromyscus caniceps	
405		Ocelot	Peromyscus crinitus	
406		Opossum_Virginia	Peromyscus dickeyi	
407		Orangutan	Peromyscus difficilis	
408		Oryx (Genus Oryx)	Peromyscus eremicus	
409		Otter_River	Peromyscus furvus	
410		Otter_Sea	Peromyscus gossypinus	
411		Owl (Generic name)	Peromyscus grandis	
412		Owl, Great Horned	Peromyscus guardia	
413		Oxen, True cattle (Genus Bos)	Peromyscus guatemalensis	
414		Oyster (Generic name)	Peromyscus keeni	
415		Panda_Giant	Peromyscus leucopus	
416		Panda_Red (Lesser)	Peromyscus maniculatus	
417		Partridge_Gray (Hungarian)	Peromyscus megalops	
418		Pig (Generic name)	Peromyscus mekisturus	
419		Pig_Feral	Peromyscus melanocarpus	
420		Pigeon (Generic name)	Peromyscus melanophrys	
421		Pika (Genus Ochotona)	Peromyscus melanotis	
422		Pika_American (Rocky Mountain)	Peromyscus merriami	
423		Polecat_European	Peromyscus mexicanus	
424		Porcupine	Peromyscus nastus	
425		Prairie dog (Genus Cynomys)	Peromyscus ochraventer	
426		Prairie Dog, Utah	Peromyscus pectoralis	
427		Prairie Dog_Black-tailed	Peromyscus pambertoni	

	AE	AF	AG	AH
384	Flea (Traubella neotomae)	Rhadinopsylla arborea		
385	Flea (Trichopsylloides oregonensis)	Rhadinopsylla difficilis		
386	Flea (Tunga monositus)	Rhadinopsylla fraterna		
387	Flea (Tunga penetrans)	Rhadinopsylla heiseri		
388	Flea (Xenopsylla brasiliensis)	Rhadinopsylla linta		
389	Flea (Xenopsylla cheopis)	Rhadinopsylla liventricosa		
390	Flea (Xenopsylla eridos)	Rhadinopsylla media		
391	Flea (Xenopsylla philoxera)	Rhadinopsylla mexicana		
392	Flea (Xenopsylla phyllomae)	Rhadinopsylla multidenticulata		
393	Flea (Xenopsylla vexabilis)	Rhadinopsylla orama		
394	Fly	Rhadinopsylla sectilis goodi		
395	Hornet	Rhadinopsylla sectilis sectilis		
396	Kissing bug	Rhadinopsylla sp. (Genus)		
397	Lice (Order Phthiraptera)	Rhipicephalus microplus		
398	Maggot	Rhipicephalus sanguineus		
399	Millipede (Class Diplopoda)	Rhipicephalus spp.		
400	Mite (Order Mesostigmata)	Simulium nigricoxum		
401	Mosquitoes (Family Culicidae)	Spicata botticeps		
402	Nit, Louse	Spicata comis		
403	Spiders (Order Araneae)	Spicata minidoka		
404	Tick (Amblyomma americanum)	Spicata monticola		
405	Tick (Amblyomma dubitatum)	Spicata moorei		
406	Tick (Amblyomma imitator)	Spicata nuditenacula		
407	Tick (Amblyomma inornatum)	Spicata pacifica		
408	Tick (Amblyomma interandinum)	Spicata rara		
409	Tick (Amblyomma maculatum)	Stenistomera alpina		
410	Tick (Amblyomma ovale)	Stenistomera hubbardi		
411	Tick (Amblyomma patinoi)	Stenistomera macrodactyla		
412	Tick (Amblyomma sculptum)	Stenoponia americana		
413	Tick (Amblyomma spp.)	Stenoponia ponera		
414	Tick (Amblyomma tonelliae)	Sternopsylla distincta		
415	Tick (Amblyomma triste)	Sternopsylla distincta texana		
416	Tick (Amblyomma tuberculatum)	Strepsylla dalmati		
417	Tick (Amblyomma variegatum)	Strepsylla davisae		
418	Tick (Amblyomma mixtum)	Strepsylla fautini		
419	Tick (Dermacentor albipictus)	Strepsylla machadoi		
420	Tick (Dermacentor andersoni)	Strepsylla mina		
421	Tick (Dermacentor hunteri)	Strepsylla schmidtii		
422	Tick (Dermacentor marginatus)	Strepsylla taluna		
423	Tick (Dermacentor nitens)	Strepsylla villai		
424	Tick (Dermacentor occidentalis)	Subfamily Triatominae		
425	Tick (Dermacentor parumapertus)	Suborder Ixodides		
426	Tick (Dermacentor reticulatus)	Subphylum Crustacea		
427	Tick (Dermacentor spp.)	Tarsopsylla octodecimdentata		

	AM	AN	AO	AP
384			Flea (Myodopsylla nordina)	Myodopsylla nordina
385			Flea (Myodopsylla setosa)	Myodopsylla setosa
386			Flea (Myodopsyllaoides peircei)	Myodopsyllaoides peircei
387			Flea (Nearctopsylla brooksi)	Nearctopsylla brooksi
388			Flea (Nearctopsylla genalis)	Nearctopsylla genalis
389			Flea (Nearctopsylla georginia)	Nearctopsylla georginia
390			Flea (Nearctopsylla hamata)	Nearctopsylla hamata
391			Flea (Nearctopsylla hyrtachi)	Nearctopsylla hyrtachi
392			Flea (Nearctopsylla jordani)	Nearctopsylla jordani
393			Flea (Nearctopsylla martyoungi)	Nearctopsylla martyoungi
394			Flea (Nearctopsylla princei)	Nearctopsylla princei
395			Flea (Nearctopsylla traubi)	Nearctopsylla traubi
396			Flea (Neopsylla inopina)	Neopsylla inopina
397			Flea (Nosopsyllus faciatus)	Nosopsyllus faciatus
398			Flea (Nosopsyllus laeviceps)	Nosopsyllus laeviceps
399			Flea (Nosopsyllus londiniensis)	Nosopsyllus londiniensis
400			Flea (Nycteridopsylla chapini)	Nycteridopsylla chapini
401			Flea (Nycteridopsylla vancouverensis)	Nycteridopsylla vancouverensis
402			Flea (Odontopsyllus dentatus)	Odontopsyllus dentatus
403			Flea (Odontopsyllus multispinosus)	Odontopsyllus multispinosus
404			Flea (Opisocrostis vespertalis)	Opisocrostis vespertalis
405			Flea (Opisodasys (Opisocrostis) enoplus)	Opisodasys (Opisocrostis) enoplus
406			Flea (Opisodasys (Opisocrostis) hollandi)	Opisodasys (Opisocrostis) hollandi
407			Flea (Opisodasys (Opisocrostis) nesiotus)	Opisodasys (Opisocrostis) nesiotus
408			Flea (Opisodasys (Opisocrostis) perotensis)	Opisodasys (Opisocrostis) perotensis
409			Flea (Opisodasys (Opisocrostis) pseudarctomys)	Opisodasys (Opisocrostis) pseudarctomys
410			Flea (Opisodasys (Opisocrostis) robustus)	Opisodasys (Opisocrostis) robustus
411			Flea (Opisodasys keeni)	Opisodasys keeni
412			Flea (Orchopeas cadens)	Orchopeas cadens
413			Flea (Orchopeas dieteri)	Orchopeas dieteri
414			Flea (Orchopeas fulleri)	Orchopeas fulleri
415			Flea (Orchopeas howardi)	Orchopeas howardi
416			Flea (Orchopeas latens)	Orchopeas latens
417			Flea (Orchopeas leucopus)	Orchopeas leucopus
418			Flea (Orchopeas neotomae)	Orchopeas neotomae
419			Flea (Orchopeas nepos)	Orchopeas nepos
420			Flea (Orchopeas sexdentatus)	Orchopeas sexdentatus
421			Flea (Orchopeas sp. (Genus))	Orchopeas sp. (Genus)
422			Flea (Order Siphonaptera)	Order Siphonaptera
423			Flea (Oropsylla (Opisocrostis) labis)	Oropsylla (Opisocrostis) labis
424			Flea (Oropsylla alaskensis)	Oropsylla alaskensis
425			Flea (Oropsylla arctomys)	Oropsylla arctomys
426			Flea (Oropsylla augustsoni)	Oropsylla augustsoni
427			Flea (Oropsylla bruneri)	Oropsylla bruneri

	AQ	AR	AS	AT	AU	AV
384				<i>Ixodes brunneus</i>		
385				<i>Ixodes cookei</i>		
386				<i>Ixodes dentatus</i>		
387				<i>Ixodes kingi</i>		
388				<i>Ixodes marxi</i>		
389				<i>Ixodes muris</i>		
390				<i>Ixodes ovatus</i>		
391				<i>Ixodes pacificus</i>		
392				<i>Ixodes persulcatus</i>		
393				<i>Ixodes ricinus</i>		
394				<i>Ixodes scapularis</i>		
395				<i>Ixodes sculptus</i>		
396				<i>Ixodes spp.</i>		
397				<i>Jellisonia bonia</i>		
398				<i>Jellisonia bullisi</i>		
399				<i>Jellisonia doratopsylla</i>		
400				<i>Jellisonia hayesi</i>		
401				<i>Jellisonia ironsi</i>		
402				<i>Jellisonia johnsonae</i>		
403				<i>Jellisonia klotsi</i>		
404				<i>Jellisonia wisemani</i>		
405				<i>Jordanopsylla allredi</i>		
406				<i>Kerodon rupestris</i>		
407				<i>Kohlsia azuerensis</i>		
408				<i>Kohlsia campaniger</i>		
409				<i>Kohlsia cora</i>		
410				<i>Kohlsia felteni</i>		
411				<i>Kohlsia fournieri</i>		
412				<i>Kohlsia gammonsi</i>		
413				<i>Kohlsia graphis</i>		
414				<i>Kohlsia keenani</i>		
415				<i>Kohlsia linni</i>		
416				<i>Kohlsia martini</i>		
417				<i>Kohlsia mojica</i>		
418				<i>Kohlsia ortizi</i>		
419				<i>Kohlsia osgoodi</i>		
420				<i>Kohlsia pelaezi</i>		
421				<i>Kohlsia tiptoni</i>		
422				<i>Kohlsia traubi</i>		
423				<i>Kohlsia uniseta</i>		
424				<i>Kohlsia whartoni</i>		
425				<i>Lagomorpha (Order)</i>		
426				<i>Lama glama</i>		
427				<i>Lama guanicoe</i>		

	A	B	C
428			Microbacterium species
429			Micrococcus species
430			Microsporidia (Phylum)
431			Microsporum canis
432			Microsporum gypseum
433			Microsporum nanum
434			Microsporum species
435			Middle East respiratory syndrome coronavirus
436			Monkeypox virus
437			Moraxella species
438			Morganella morganii
439			Morganella morganii subsp. morganii
440			Morganella species
441			Mucor species
442			Mumps virus
443			Mycobacterium abscessus
444			Mycobacterium abscessus/chelonae complex
445			Mycobacterium africanum
446			Mycobacterium asiaticum
447			Mycobacterium aurum
448			Mycobacterium avium
449			Mycobacterium avium-intracellulare group
450			Mycobacterium bolletii
451			Mycobacterium bovis
452			Mycobacterium bovis (BCG)
453			Mycobacterium canariasense
454			Mycobacterium celatum
455			Mycobacterium chelonae
456			Mycobacterium chimaera
457			Mycobacterium chitae
458			Mycobacterium cosmeticum
459			Mycobacterium diernhoferi
460			Mycobacterium fallax
461			Mycobacterium flavescens
462			Mycobacterium fortuitum
463			Mycobacterium fortuitum complex
464			Mycobacterium fortuitum/peregrinum group
465			Mycobacterium frederiksbergense
466			Mycobacterium gastri
467			Mycobacterium gilvum
468			Mycobacterium goodii
469			Mycobacterium gordonae
470			Mycobacterium haemophilum
471			Mycobacterium heckeshornense
472			Mycobacterium immunogenum
473			Mycobacterium interjectum
474			Mycobacterium intermedium

	AA	AB	AC	AD
428		Prairie Dog_Gunnison's	Peromyscus perfulvus	
429		Prairie Dog_Mexican	Peromyscus polionotus	
430		Prairie Dog_White-tailed	Peromyscus polius	
431		Primate (Order Primates)	Peromyscus pseudocrinitus	
432		Primate_Nonhuman (Generic name)	Peromyscus sejugis	
433		Quail (Generic name)	Peromyscus simulus	
434		Rabbit (Generic name)	Peromyscus sitkensis	
435		Rabbit_Brush	Peromyscus slevini	
436		Rabbit_Cottontail, Desert	Peromyscus stephani	
437		Rabbit_Cottontail, Eastern	Peromyscus stirtoni	
438		Rabbit_Cottontail, Mexican	Peromyscus truei	
439		Rabbit_Cottontail, New England	Peromyscus yucatanicus	
440		Rabbit_Cottontail, Tres Marias	Peromyscus zarhynchus	
441		Rabbit_Cottontails (Genus Sylvilagus)	Petaurus breviceps	
442		Rabbit_European	Petrogale (Genus)	
443		Rabbit_European (Genus Oryctolagus)	Phenacomys intermedius	
444		Rabbit_Forest	Phoca vitulina	
445		Rabbit_Marsh	Phyllostomus (Genus)	
446		Rabbit_Nuttall's	Phyllostomus hastatus	
447		Rabbit_Omilteme	Physignathus cocincinus	
448		Rabbit_Pygmy	Pipistrellus hesperus	
449		Rabbit_San Jose Brush	Pipistrellus subflavus	
450		Rabbit_Swamp	Pituophis melanoleucus	
451		Raccoon, Common	Plecotus townsendii	
452		Raccoon_Cozumel (Pygmy)	Podomys floridanus	
453		Raccoon_Crab-eating	Pongo pygmaeus	
454		Rat (Genus Rattus)	Potos flavus	
455		Rat_Black (Roof)	Primates (Order)	
456		Rat_Cotton	Procyon cancrivorus	
457		Rat_Cotton, Arizona	Procyon lotor	
458		Rat_Cotton, White-eared	Procyon pygmaeus	
459		Rat_Cotton, Yellow-nosed	Pteronotus macleayi	
460		Rat_Cotton, Zacatecan (Tawny-bellied)	Pteronotus parnelli	
461		Rat_Himalayan	Pteronotus quadridens	
462		Rat_Hispid Cotton	Pteropus (Genus)	
463		Rat_Isthmus, Mount Pirri	Pteropus giganteus	
464		Rat_Norway	Pteropus rodricensis	
465		Rat_Polynesian	Puma concolor	
466		Rat_Pygmy rice (Genus Oligoryzomys)	Puma yagouaroundi	
467		Rat_Terraced rice	Pythonidae (Family)	
468		Rat_Woosnam's Brush-furred	Rangifer tarandus	
469		Rat_Yellow Isthmus	Rattus (Genus)	
470		Rattlesnake_Aruba Island	Rattus exulans	
471		Rattlesnake_Tiger	Rattus nitidus	
472		Redpoll_Common	Rattus norvegicus	
473		Reindeer (Caribou)	Rattus rattus	
474		Reptile (Class Reptilia)	Reithrodontomys (Genus)	

	AE	AF	AG	AH
428	Tick (Dermacentor variabilis)	Thrassis acamantis		
429	Tick (Haemaphysalis spp.)	Thrassis aridis		
430	Tick (Ixodes affinis)	Thrassis arizonensis		
431	Tick (Ixodes angustus)	Thrassis bacchi		
432	Tick (Ixodes brunneus)	Thrassis fotus		
433	Tick (Ixodes cookei)	Thrassis francisi		
434	Tick (Ixodes dentatus)	Thrassis pandorae		
435	Tick (Ixodes kingi)	Thrassis petiolatus		
436	Tick (Ixodes marxi)	Thrassis sp. (Genus)		
437	Tick (Ixodes muris)	Thrassis spenceri		
438	Tick (Ixodes ovatus)	Thrassis stanfordi		
439	Tick (Ixodes pacificus)	Tiamastus cavicola		
440	Tick (Ixodes persulcatus)	Traubella neotomae		
441	Tick (Ixodes ricinus)	Trichopsylloides oregonensis		
442	Tick (Ixodes scapularis)	Tunga monositus		
443	Tick (Ixodes sculptus)	Tunga penetrans		
444	Tick (Ixodes spp.)	Unknown		
445	Tick (Rhipicephalus microplus)	Xenopsylla brasiliensis		
446	Tick (Rhipicephalus sanguineus)	Xenopsylla cheopis		
447	Tick (Rhipicephalus spp.)	Xenopsylla eridos		
448	Ticks (Suborder Ixodides)	Xenopsylla philoxera		
449	Tongueworm	Xenopsylla phyllomae		
450	Unknown	Xenopsylla vexabilis		
451				
452				
453				
454				
455				
456				
457				
458				
459				
460				
461				
462				
463				
464				
465				
466				
467				
468				
469				
470				
471				
472				
473				
474				

	AM	AN	AO	AP
428			Flea (<i>Oropsylla hirsuta</i>)	<i>Oropsylla hirsuta</i>
429			Flea (<i>Oropsylla idahoensis</i>)	<i>Oropsylla idahoensis</i>
430			Flea (<i>Oropsylla labis</i>)	<i>Oropsylla labis</i>
431			Flea (<i>Oropsylla montana</i>)	<i>Oropsylla montana</i>
432			Flea (<i>Oropsylla oregonensis</i>)	<i>Oropsylla oregonensis</i>
433			Flea (<i>Oropsylla ruprestris</i>)	<i>Oropsylla ruprestris</i>
434			Flea (<i>Oropsylla silantiewi</i>)	<i>Oropsylla silantiewi</i>
435			Flea (<i>Oropsylla spenceri</i>)	<i>Oropsylla spenceri</i>
436			Flea (<i>Oropsylla stanfordi</i>)	<i>Oropsylla stanfordi</i>
437			Flea (<i>Oropsylla tuberculata cynomuris</i>)	<i>Oropsylla tuberculata cynomuris</i>
438			Flea (<i>Oropsylla tuberculata tuberculata</i>)	<i>Oropsylla tuberculata tuberculata</i>
439			Flea (<i>Oropsylla washingtonensis</i>)	<i>Oropsylla washingtonensis</i>
440			Flea (<i>P. echinophagoides</i>)	<i>P. echinophagoides</i>
441			Flea (<i>Paratyphloceras oregonensis</i>)	<i>Paratyphloceras oregonensis</i>
442			Flea (<i>Peromyscopsylla draco</i>)	<i>Peromyscopsylla draco</i>
443			Flea (<i>Peromyscopsylla ebrighti</i>)	<i>Peromyscopsylla ebrighti</i>
444			Flea (<i>Peromyscopsylla hamifer</i>)	<i>Peromyscopsylla hamifer</i>
445			Flea (<i>Peromyscopsylla hesperomys</i>)	<i>Peromyscopsylla hesperomys</i>
446			Flea (<i>Peromyscopsylla ostsibirica</i>)	<i>Peromyscopsylla ostsibirica</i>
447			Flea (<i>Peromyscopsylla scotti</i>)	<i>Peromyscopsylla scotti</i>
448			Flea (<i>Peromyscopsylla selenis</i>)	<i>Peromyscopsylla selenis</i>
449			Flea (<i>Peromyscopsylla catatina</i>)	<i>Peromyscopsylla catatina</i>
450			Flea (<i>Phalacropsylla allos</i>)	<i>Phalacropsylla allos</i>
451			Flea (<i>Phalacropsylla hamata</i>)	<i>Phalacropsylla hamata</i>
452			Flea (<i>Phalacropsylla morlani</i>)	<i>Phalacropsylla morlani</i>
453			Flea (<i>Phalacropsylla nivalis</i>)	<i>Phalacropsylla nivalis</i>
454			Flea (<i>Phalacropsylla oregonensis</i>)	<i>Phalacropsylla oregonensis</i>
455			Flea (<i>Phalacropsylla paradisea</i>)	<i>Phalacropsylla paradisea</i>
456			Flea (<i>Pleochaetis exilis</i>)	<i>Pleochaetis exilis</i>
457			Flea (<i>Pleochaetis mundus</i>)	<i>Pleochaetis mundus</i>
458			Flea (<i>Pleochaetis paramundus</i>)	<i>Pleochaetis paramundus</i>
459			Flea (<i>Pleochaetis</i> sp. (Genus))	<i>Pleochaetis</i> sp. (Genus)
460			Flea (<i>Plusaetis asetis</i>)	<i>Plusaetis asetis</i>
461			Flea (<i>Plusaetis aztecus</i>)	<i>Plusaetis aztecus</i>
462			Flea (<i>Plusaetis dolens</i>)	<i>Plusaetis dolens</i>
463			Flea (<i>Plusaetis mathesoni</i>)	<i>Plusaetis mathesoni</i>
464			Flea (<i>Plusaetis parus</i>)	<i>Plusaetis parus</i>
465			Flea (<i>Plusaetis ponsi</i>)	<i>Plusaetis ponsi</i>
466			Flea (<i>Plusaetis sibynus</i>)	<i>Plusaetis sibynus</i>
467			Flea (<i>Plusaetis soberoni</i>)	<i>Plusaetis soberoni</i>
468			Flea (<i>Plusaetis vermiformis</i>)	<i>Plusaetis vermiformis</i>
469			Flea (<i>Polygenis adocetus</i>)	<i>Polygenis adocetus</i>
470			Flea (<i>Polygenis floridanus</i>)	<i>Polygenis floridanus</i>
471			Flea (<i>Polygenis gwyni</i>)	<i>Polygenis gwyni</i>
472			Flea (<i>Polygenis martinezbaezi</i>)	<i>Polygenis martinezbaezi</i>
473			Flea (<i>Polygenis odiosus</i>)	<i>Polygenis odiosus</i>
474			Flea (<i>Polygenis rozeboomi</i>)	<i>Polygenis rozeboomi</i>

WA KINGCO 20-0492-G-000114

	AQ	AR	AS	AT	AU	AV
428				Lama pacos		
429				Larus delawarensis		
430				Lasionycteris noctivagans		
431				Lasiurus blossevillii		
432				Lasiurus borealis		
433				Lasiurus cinereus		
434				Lasiurus ega		
435				Lasiurus intermedius		
436				Lasiurus seminolus		
437				Lemmiscus curtatus		
438				Lemuridae (Family)		
439				Leopardus pardalis		
440				Leopardus tigrinus		
441				Leopardus wiedii		
442				Leptonycteris curasoae		
443				Leptonycteris nivalis		
444				Leptopsylla segnis		
445				Lepus (Genus)		
446				Lepus alleni		
447				Lepus americanus		
448				Lepus arcticus		
449				Lepus californicus		
450				Lepus callotis subsp callotis		
451				Lepus callotis subsp gaillardi		
452				Lepus europaeus		
453				Lepus flavigularis		
454				Lepus insularis		
455				Lepus othus		
456				Lepus townsendii		
457				Lingulata (Genus)		
458				Lontra canadensis		
459				Lophuromys woosnami		
460				Loxodonta africana		
461				Lynx canadensis		
462				Lynx rufus		
463				Macaca (Genus)		
464				Macaca fuscata		
465				Macaca mulatta		
466				Macropus (Genus)		
467				Macropus robustus		
468				Macropus rufus		
469				Macrotus californicus		
470				Macrotus waterhousii		
471				Malaraeus eremicus		
472				Malaraeus sinomus		
473				Malaraeus sp. (Genus)		
474				Malaraeus telchinus		

	A	B	C
475			Mycobacterium intracellulare
476			Mycobacterium kansasii
477			Mycobacterium kubicae
478			Mycobacterium lentiflavum
479			Mycobacterium mageritense
480			Mycobacterium malmoense
481			Mycobacterium marinum
482			Mycobacterium massiliense
483			Mycobacterium microti
484			Mycobacterium mucogenicum
485			Mycobacterium nebraskense
486			Mycobacterium neoaurum
487			Mycobacterium nonchromogenicum
488			Mycobacterium parafortuitum
489			Mycobacterium parascrofulaceum
490			Mycobacterium peregrinum
491			Mycobacterium scrofulaceum
492			Mycobacterium shimoidei
493			Mycobacterium simiae
494			Mycobacterium smegmatis
495			Mycobacterium species
496			Mycobacterium szulgai
497			Mycobacterium terrae
498			Mycobacterium triplex
499			Mycobacterium tuberculosis
500			Mycobacterium tuberculosis complex
501			Mycobacterium tuberculosis complex (not BCG)
502			Mycobacterium tusciae
503			Mycobacterium ulcerans
504			Mycobacterium vaccae
505			Mycobacterium xenopi
506			Mycobacterium, non-TB (MOTT)
507			Mycoplasma pneumoniae
508			Mycoplasma species
509			Naegleria fowleri
510			Naegleria species
511			Neisseria gonorrhoeae
512			Neisseria kochii
513			Neisseria lactamica
514			Neisseria macacae
515			Neisseria meningitidis
516			Neisseria mucosa
517			Neisseria species
518			Neisseria weaveri
519			Nematode
520			Neosartorya species
521			Nigrospora species
522			Nitrobacter species
523			Nocardia abscessus

	AA	AB	AC	AD
475		Rhinoceros_Black	Reithrodontomys brevirostris	
476		Rhinoceros_White	Reithrodontomys burti	
477		Rodent (Order Rodentia)	Reithrodontomys chrysopsis	
478		Sea_Lion_California	Reithrodontomys creper	
479		Seal (Generic name)	Reithrodontomys darienensis	
480		Seal_Harbor	Reithrodontomys fulvescens	
481		Sheep	Reithrodontomys gracilis	
482		Sheep (Genus Ovis)	Reithrodontomys hirsutus	
483		Sheep_Bighorn	Reithrodontomys humulis	
484		Sheep_Dall's	Reithrodontomys megalotis	
485		Shrew_American Short-tailed (Genus Blarina)	Reithrodontomys mexicanus	
486		Shrew_Arctic	Reithrodontomys microdon	
487		Shrew_Carmen Mountain	Reithrodontomys montanus	
488		Shrew_Dwarf	Reithrodontomys raviventris	
489		Shrew_Gaspe	Reithrodontomys rodriguezi	
490		Shrew_Glacier Bay Water	Reithrodontomys sumichrasti	
491		Shrew_House	Reithrodontomys tenuirostris	
492		Shrew_Inyo	Reptilia (Class)	
493		Shrew_Large-toothed	Rhombomys opimus	
494		Shrew_Least	Rodentia (Order)	
495		Shrew_Long-tailed	Rousettus aegyptiacus	
496		Shrew_Masked	Rousettus lanosus	
497		Shrew_Merriam's	Saguinus (Genus)	
498		Shrew_Mexican Long-tailed	Saguinus oedipus	
499		Shrew_Mt. Lyell	Saimiri sciureus	
500		Shrew_Ornate	Scalopus aquaticus	
501		Shrew_Pacific Water	Scapanus latimanus	
502		Shrew_Preble's	Scapanus orarius	
503		Shrew_Pribilof	Scapanus townsendii	
504		Shrew_Pygmy	Sciuridae (Family)	
505		Shrew_San Cristobal	Sciurus aberti	
506		Shrew_Santa Catalina	Sciurus alleni	
507		Shrew_Saussure's	Sciurus arizonensis	
508		Shrew_Sclater's	Sciurus aureogaster	
509		Shrew_Smoky	Sciurus carolinensis	
510		Shrew_Southeastern	Sciurus coliaei	
511		Shrew_St. Lawrence Island	Sciurus deppei	
512		Shrew_Trowbridge's	Sciurus granatensis	
513		Shrew_Vagrant	Sciurus griseus	
514		Shrew_Verapaz	Sciurus nayaritensis	
515		Shrew_Water	Sciurus niger cinereus	
516		Siskin_Pine (Eurasian)	Sciurus oculatus	
517		Skunk (Family Mephitidae)	Sciurus richmondi	
518		Skunk_Eastern Hog-nosed	Sciurus variegatoides	
519		Skunk_Hooded	Sciurus vulgaris	
520		Skunk_Spotted (Genus)	Sciurus yucatanensis	
521		Skunk_Spotted, Eastern	Sciurus (Genus)	
522		Skunk_Spotted, Pygmy	Serpentes (Suborder)	
523		Skunk_Spotted, Southern	Sigmodon alleni	

WA-KINGCO-20-0492-G-000117

	AM	AN	AO	AP
475			Flea (Polygenis sp. (Genus))	Polygenis sp. (Genus)
476			Flea (Polygenis vazquezi)	Polygenis vazquezi
477			Flea (Polygenis vulcanius)	Polygenis vulcanius
478			Flea (Pulex alverazi)	Pulex alverazi
479			Flea (Pulex irritans)	Pulex irritans
480			Flea (Pulex porcinus)	Pulex porcinus
481			Flea (Pulex simulans)	Pulex simulans
482			Flea (Pulex sinoculus)	Pulex sinoculus
483			Flea (Pulex sp. (Genus))	Pulex sp. (Genus)
484			Flea (Rhadinopsylla arborea)	Rhadinopsylla arborea
485			Flea (Rhadinopsylla difficilis)	Rhadinopsylla difficilis
486			Flea (Rhadinopsylla fraterna)	Rhadinopsylla fraterna
487			Flea (Rhadinopsylla heiseri)	Rhadinopsylla heiseri
488			Flea (Rhadinopsylla linta)	Rhadinopsylla linta
489			Flea (Rhadinopsylla liventricosa)	Rhadinopsylla liventricosa
490			Flea (Rhadinopsylla media)	Rhadinopsylla media
491			Flea (Rhadinopsylla mexicana)	Rhadinopsylla mexicana
492			Flea (Rhadinopsylla multidenticulata)	Rhadinopsylla multidenticulata
493			Flea (Rhadinopsylla orama)	Rhadinopsylla orama
494			Flea (Rhadinopsylla sectilis goodi)	Rhadinopsylla sectilis goodi
495			Flea (Rhadinopsylla sectilis sectilis)	Rhadinopsylla sectilis sectilis
496			Flea (Rhadinopsylla sp. (Genus))	Rhadinopsylla sp. (Genus)
497			Flea (Spicata bottaceps)	Spicata bottaceps
498			Flea (Spicata comis)	Spicata comis
499			Flea (Spicata minidoka)	Spicata minidoka
500			Flea (Spicata monticola)	Spicata monticola
501			Flea (Spicata moorei)	Spicata moorei
502			Flea (Spicata nuditenacula)	Spicata nuditenacula
503			Flea (Spicata pacifica)	Spicata pacifica
504			Flea (Spicata rara)	Spicata rara
505			Flea (Stenistomera alpina)	Stenistomera alpina
506			Flea (Stenistomera hubbardi)	Stenistomera hubbardi
507			Flea (Stenistomera macrodactyla)	Stenistomera macrodactyla
508			Flea (Stenoponia americana)	Stenoponia americana
509			Flea (Stenoponia ponera)	Stenoponia ponera
510			Flea (Sternopsylla distincta texana)	Sternopsylla distincta texana
511			Flea (Sternopsylla distincta)	Sternopsylla distincta
512			Flea (Strepsylla dalmati)	Strepsylla dalmati
513			Flea (Strepsylla davisae)	Strepsylla davisae
514			Flea (Strepsylla fautini)	Strepsylla fautini
515			Flea (Strepsylla machadoi)	Strepsylla machadoi
516			Flea (Strepsylla mina)	Strepsylla mina
517			Flea (Strepsylla schmidtii)	Strepsylla schmidtii
518			Flea (Strepsylla taluna)	Strepsylla taluna
519			Flea (Strepsylla villai)	Strepsylla villai
520			Flea (Tarsopsylla octodecimdentata)	Tarsopsylla octodecimdentata
521			Flea (Thrassis acamantis)	Thrassis acamantis
522			Flea (Thrassis aridis)	Thrassis aridis
523			Flea (Thrassis arizonensis)	Thrassis arizonensis

	AQ	AR	AS	AT	AU	AV
475				Malaraeus vonfintelis		
476				Margopsylla tolli		
477				Marmota (Genus)		
478				Marmota baibacina		
479				Marmota caligata		
480				Marmota flaviventris		
481				Marmota marmota		
482				Marmota monax		
483				Marmota olympus		
484				Marmota vancouverensis		
485				Marsupalia (Superorder)		
486				Martes americana		
487				Martes pennanti		
488				Megabothris abantis		
489				Megabothris acerbus		
490				Megabothris adversus		
491				Megabothris asio megacolpus		
492				Megabothris asio orectus		
493				Megabothris atrox		
494				Megabothris bisetis		
495				Megabothris clantoni		
496				Megabothris groenlandicus		
497				Megabothris jamesoni		
498				Megabothris lucifer		
499				Megabothris princei		
500				Megabothris quirini		
501				Megabothris similus		
502				Megabothris smiti		
503				Megabothris spenceri		
504				Megabothris weaveri		
505				Megabothris wilsoni		
506				Megadontomys nelsoni		
507				Megadontomys thomasi		
508				Megarhroglossus becki		
509				Megarhroglossus divisus		
510				Megarhroglossus proculus		
511				Megarhroglossus sicamus		
512				Megarhroglossus sp. (Genus)		
513				Mephitidae (Family)		
514				Mephitis macroura		
515				Mephitis mephitis		
516				Meringis agilis		
517				Meringis altipecten		
518				Meringis arachis		
519				Meringis bilsingi		
520				Meringis californicus		
521				Meringis cummingi		
522				Meringis deserti		
523				Meringis dipodomys		

	A	B	C
524			Nocardia arthritidis
525			Nocardia asiatica
526			Nocardia asteroides
527			Nocardia beijingensis
528			Nocardia brasiliensis
529			Nocardia brevicatena
530			Nocardia carnea
531			Nocardia cyriacigeorgica
532			Nocardia farcinica
533			Nocardia nova
534			Nocardia otitidiscaviarum
535			Nocardia paucivorans
536			Nocardia pseudobrasiliensis
537			Nocardia puris
538			Nocardia shimofusensis
539			Nocardia species
540			Nocardia veterana
541			Nocardiopsis dassonvillei subsp. dassonvillei
542			Non-infectious Poliovirus
543			Norovirus
544			Norwalk virus
545			Obesumbacterium proteus
546			Obligate intracellular bacteria
547			Oligella urethralis
548			Onchocerca species
549			Onchocerca volvulus
550			Opisthorchis species
551			Orf virus
552			Orientia tsutsugamushi
553			Paecilomyces lilacinus
554			Paecilomyces species
555			Paecilomyces variotii
556			Paenibacillus alvei
557			Paenibacillus species
558			Panola Mountain Ehrlichia
559			Pantoea agglomerans
560			Pantoea species
561			Paracoccidioides brasiliensis
562			Paracoccidioides species
563			Paragonimus species
564			Paragonimus westermani
565			Parasite
566			Parechovirus
567			Parechovirus A
568			Parechovirus A3
569			Pasteurella canis
570			Pasteurella multocida
571			Pasteurella pneumotropica
572			Pasteurella species

	AA	AB	AC	AD
524		Skunk_Spotted, Western	Sigmodon arizonae	
525		Skunk_Striped	Sigmodon fulviventor	
526		Snake (Suborder Serpentes)	Sigmodon hispidus	
527		Snake_Boa, Red-tailed	Sigmodon leucotis	
528		Snake_Pine	Sigmodon ochrognathus	
529		Snake_Python (Family Pythonidae)	Sorex alaskanus	
530		Snake_Rat, Red (Corn)	Sorex arcticus	
531		Squirrel (Family Sciuridae)	Sorex bendirii	
532		Squirrel, Rock	Sorex cinereus	
533		Squirrel_Allen's	Sorex dispar	
534		Squirrel_American Red	Sorex fumeus	
535		Squirrel_American Flying (Genus Glaucomys)	Sorex gaspensis	
536		Squirrel_Arizona Gray	Sorex hoyi	
537		Squirrel_Collie's	Sorex jacksoni	
538		Squirrel_Deppe's	Sorex longirostris	
539		Squirrel_Douglas'	Sorex lyelli	
540		Squirrel_Eastern Fox	Sorex macrodon	
541		Squirrel_Eastern Gray	Sorex merriami	
542		Squirrel_Espiritu Santo Island Antelope	Sorex milleri	
543		Squirrel_Eurasian Red	Sorex nanus	
544		Squirrel_Ground (Genus Spermophilus)	Sorex oreopolus	
545		Squirrel_Ground, Baja California Rock	Sorex ornatus	
546		Squirrel_Ground, Belding's	Sorex ornatus subsp willetti	
547		Squirrel_Ground, California	Sorex palustris	
548		Squirrel_Ground, Cascade Golden-mantled	Sorex preblei	
549		Squirrel_Ground, Columbian	Sorex pribilofensis	
550		Squirrel_Ground, Franklin's	Sorex saussurei	
551		Squirrel_Ground, Golden-mantled	Sorex sclateri	
552		Squirrel_Ground, Little	Sorex stizodon	
553		Squirrel_Ground, Long-clawed	Sorex tenellus	
554		Squirrel_Ground, Long-tailed	Sorex trowbridgii	
555		Squirrel_Ground, Mexican	Sorex vagrans	
556		Squirrel_Ground, Mohave	Sorex veraepacis	
557		Squirrel_Ground, Perote	Spermophilopsis leptodactylus	
558		Squirrel_Ground, Richardson's	Spermophilus (Genus)	
559		Squirrel_Ground, Ring-tailed	Spermophilus adocetus	
560		Squirrel_Ground, Round-tailed	Spermophilus annulatus	
561		Squirrel_Ground, Sierra Madre	Spermophilus armatus	
562		Squirrel_Ground, Spotted	Spermophilus atricapillus	
563		Squirrel_Ground, Thirteen-lined	Spermophilus beecheyi	
564		Squirrel_Ground, Townsend's	Spermophilus beldingi	
565		Squirrel_Ground, Tropical	Spermophilus columbianus	
566		Squirrel_Ground, Uinta	Spermophilus franklinii	
567		Squirrel_Ground, Washington	Spermophilus lateralis	
568		Squirrel_Harris' Antelope	Spermophilus madrensis	
569		Squirrel_Mexican Gray	Spermophilus mexicanus	
570		Squirrel_Nayarit	Spermophilus mohavensis	
571		Squirrel_Nelson's (San Joaquin Antelope)	Spermophilus perotensis	
572		Squirrel_Northern flying	Spermophilus pygmaeus	

WA-KINGCO-20-0492-G-000121

	AM	AN	AO	AP
524			Flea (Thrassis bacchi)	Thrassis bacchi
525			Flea (Thrassis fotus)	Thrassis fotus
526			Flea (Thrassis francisi)	Thrassis francisi
527			Flea (Thrassis pandorae)	Thrassis pandorae
528			Flea (Thrassis petiolatus)	Thrassis petiolatus
529			Flea (Thrassis sp. (Genus))	Thrassis sp. (Genus)
530			Flea (Thrassis spenceri)	Thrassis spenceri
531			Flea (Thrassis stanfordi)	Thrassis stanfordi
532			Flea (Tiamastus cavicola)	Tiamastus cavicola
533			Flea (Traubella neotomae)	Traubella neotomae
534			Flea (Trichopsylloides oregonensis)	Trichopsylloides oregonensis
535			Flea (Tunga monositus)	Tunga monositus
536			Flea (Tunga penetrans)	Tunga penetrans
537			Flea (Xenopsylla brasiliensis)	Xenopsylla brasiliensis
538			Flea (Xenopsylla cheopis)	Xenopsylla cheopis
539			Flea (Xenopsylla eridos)	Xenopsylla eridos
540			Flea (Xenopsylla philoxera)	Xenopsylla philoxera
541			Flea (Xenopsylla phyllomae)	Xenopsylla phyllomae
542			Flea (Xenopsylla vexabilis)	Xenopsylla vexabilis
543			Fly	[Fly]
544			Fox (Generic name)	[Fox]
545			Fox_Arctic	Vulpes lagopus
546			Fox_Common Gray	Urocyon cinereoargenteus
547			Fox_Fennec	Vulpes zerda
548			Fox_Island Grey	Urocyon littoralis
549			Fox_Kit	Vulpes macrotis
550			Fox_Red	Vulpes vulpes
551			Fox_Red (Kit) (Genus Vulpes)	Vulpes (Genus)
552			Fox_Swift	Vulpes velox
553			Fox_Virginia	Vulpes vulpes subsp fulvus
554			Frog (Generic name)	[Frog]
555			Frog_Toad (Generic name)	[Frog_Toad]
556			Galago (Genus Galago)	Galago (Genus)
557			Gazella (Genus Gazella)	Gazella (Genus)
558			Gemsbok	Oryx gazella
559			Gerbil (Generic name)	[Gerbil]
560			Gerbil (Genus Gerbillus)	Gerbillus (Genus)
561			Gerbil (Jird) (Genus Meriones)	Meriones (Genus)
562			Gerbil_Great	Rhombomys opimus
563			Giraffe	Giraffa camelopardalis
564			Goat (Genus Capra)	Capra (Genus)
565			Goat_Mountain (Genus Oreamnos)	Oreamnos (Genus)
566			Goldfinch (Generic name)	[Goldfinch]
567			Goose_Domestic (Generic name)	[Goose_Domestic]
568			Gopher_Desert Pocket	Geomys arenarius
569			Gopher_Plains Pocket	Geomys bursarius
570			Gopher_Pocket, Botta's	Thomomys bottae
571			Gopher_Pocket, Camas	Thomomys bulbivorus
572			Gopher_Pocket, Mountain	Thomomys monticola

	AQ	AR	AS	AT	AU	AV
524				Meringis disparalis		
525				Meringis facilis		
526				Meringis hubbardi		
527				Meringis jamesoni		
528				Meringis nidi		
529				Meringis parkeri		
530				Meringis rectus		
531				Meringis shannoni		
532				Meringis sp. (Genus)		
533				Meringis vitabilis		
534				Meriones (Genus)		
535				Meriones crassus		
536				Meriones libycus		
537				Meriones meridianus		
538				Meriones tamariscinus		
539				Meriones unguiculatus		
540				Mesocricetus (Genus)		
541				Mesocricetus auratus		
542				Mesocricetus brandti		
543				Mesocricetus newtoni		
544				Mesocricetus raddei		
545				Microtus (Genus)		
546				Microtus abbreviatus		
547				Microtus breweri		
548				Microtus californicus		
549				Microtus chrotorrhinus		
550				Microtus guatemalensis		
551				Microtus longicaudus		
552				Microtus longicaudus subsp coronarius		
553				Microtus mexicanus		
554				Microtus miurus		
555				Microtus montanus		
556				Microtus ochrogaster		
557				Microtus oeconomus		
558				Microtus oregoni		
559				Microtus pennsylvanicus		
560				Microtus pinetorum		
561				Microtus quasiater		
562				Microtus richardsoni		
563				Microtus townsendii		
564				Microtus umbrosus		
565				Microtus xanthognathus		
566				Mioctenopsylla arctica		
567				Mioctenopsylla traubi		
568				Molossidae (Family)		
569				Molossus ater		
570				Mormoops blainvillii		
571				Mormoops megalophylla		
572				Mus musculus		

	A	B	C
573			Pediococcus species
574			Penicillium marneffeii
575			Penicillium species
576			Phaeoacremonium inflatipes
577			Phaeoacremonium species
578			Phialemonium obovatum
579			Phialophora verrucosa
580			Photobacterium (Vibrio) damsela
581			Photobacterium damsela
582			Photobacterium damsela subsp. damsela
583			Phylum Arthropoda
584			Pichia ohmeri
585			Picornavirus
586			Piedraia hortae
587			Pinworm (Enterobius vermicularis)
588			Plasmodium brasilianum
589			Plasmodium falciparum
590			Plasmodium malariae
591			Plasmodium ovale
592			Plasmodium species
593			Plasmodium vivax
594			Pneumocystis species
595			Poliovirus
596			Poxvirus
597			Prevotella intermedia
598			Propionibacterium acnes
599			Proteus mirabilis
600			Proteus penneri
601			Proteus species
602			Proteus vulgaris
603			Protozoa
604			Providencia rettgeri
605			Providencia species
606			Providencia stuartii
607			Pseudocowpoxvirus
608			Pseudomonas abietaniphila
609			Pseudomonas aeruginosa
610			Pseudomonas fluorescens
611			Pseudomonas mosselii
612			Pseudomonas oryzae
613			Pseudomonas species
614			Pseudomonas stutzeri
615			Pseudomonas syringae
616			Pythium (Hyphomyces)
617			Pythium insidiosum
618			Rabies Virus
619			Rahnella aquatilis
620			Rahnella species
621			Ralstonia mannitolitica

	AA	AB	AC	AD
573		Squirrel_Peter's	Spermophilus richardsonii	
574		Squirrel_Red-tailed	Spermophilus saturatus	
575		Squirrel_Richmond's	Spermophilus spilosoma	
576		Squirrel_Southern flying	Spermophilus tereticaudus	
577		Squirrel_Tassel-eared (Abert's)	Spermophilus townsendii	
578		Squirrel_Texas Antelope	Spermophilus tridecemlineatus	
579		Squirrel_Tree (Genus Scuirus)	Spermophilus undulatus	
580		Squirrel_Variagated	Spermophilus variegatus	
581		Squirrel_Western Gray	Spermophilus washingtoni	
582		Squirrel_White-tailed Antelope	Spilogale (Genus)	
583		Squirrel_Yucatan	Spilogale angustifrons	
584		Sugar Glider	Spilogale gracilis	
585		Tiger	Spilogale putorius	
586		Turkey (Generic name)	Spilogale pygmaea	
587		Turtle (Generic name)	Suncus murinus	
588		Turtle_Slider, Red-eared	Suricata suricatta	
589		Turtle_Snapping, American	Sus (Genus)	
590		Unknown	Sus scrofa	
591		Vole (Generic name)	Sylvilagus (Genus)	
592		Vole (Genus Microtus)	Sylvilagus aquaticus	
593		Vole, Red Tree	Sylvilagus audubonii	
594		Vole_Bank	Sylvilagus bachmani	
595		Vole_Beach	Sylvilagus brasiliensis	
596		Vole_Coronation Island	Sylvilagus cunicularius	
597		Vole_Creeping	Sylvilagus floridanus	
598		Vole_European water	Sylvilagus graysoni	
599		Vole_Gapper's Red-backed	Sylvilagus insonus	
600		Vole_Guatemalan	Sylvilagus mansuetus	
601		Vole_Insular (St. Matthews Island)	Sylvilagus nuttallii	
602		Vole_Jalapan Pine	Sylvilagus palustris	
603		Vole_Long-tailed	Sylvilagus transitionalis	
604		Vole_Meadow	Tadarida (Genus)	
605		Vole_Meadow mouse, California	Tadarida brasiliensis	
606		Vole_Mexican	Talpidae (Family)	
607		Vole_Montane	Tamias (Genus)	
608		Vole_Northern Red-backed	Tamias alpinus	
609		Vole_Pine	Tamias amoenus	
610		Vole_Prairie	Tamias bulleri	
611		Vole_Red-backed (Genus Clethrionomys)	Tamias cinereicollis	
612		Vole_Rock	Tamias dorsalis	
613		Vole_Sagebrush	Tamias merriami	
614		Vole_Singing	Tamias minimus	
615		Vole_Southern Red-backed	Tamias palmeri	
616		Vole_Townsend's	Tamias panamintinus	
617		Vole_Tundra	Tamias quadrimaculatus	
618		Vole_Water	Tamias quadrivittatus	
619		Vole_Western heather	Tamias ruficaudus	
620		Vole_White-footed	Tamias rufus	
621		Vole_Yellow-cheeked	Tamias senex	

WA-KINGCO-20-0492-G-000125

	AM	AN	AO	AP
573			Gopher_Pocket, Yellow-faced	Pappogeomys castanops
574			Gopher_Pocket_Northern	Thomomys talpoides
575			Gopher_Pocket_Southern	Thomomys umbrinus
576			Gopher_Pocket_Townsend's	Thomomys townsendii
577			Gopher_Southeastern Pocket	Geomys pinetis
578			Gopher_Texas Pocket	Geomys personatus
579			Gophers_Pocket (Genus Thomomys)	Thomomys (Genus)
580			Gorilla	Gorilla gorilla
581			Guanaco	Lama guanicoe
582			Guinea pig	Cavia porcellus
583			Gull_Ring-billed	Larus delawarensis
584			Hamster (Generic name)	[Hamster]
585			Hamster (Genus Cricetulus)	Cricetulus (Genus)
586			Hamster (Genus Mesocricetus)	Mesocricetus (Genus)
587			Hamster_Brandt's	Mesocricetus brandti
588			Hamster_Ciscaucasian	Mesocricetus raddei
589			Hamster_European	Cricetus cricetus
590			Hamster_Romanian	Mesocricetus newtoni
591			Hamster_Syrian	Mesocricetus auratus
592			Hare (Genus Lepus)	Lepus (Genus)
593			Hare_Alaskan	Lepus othus
594			Hare_Arctic	Lepus arcticus
595			Hare_Brown (European)	Lepus europaeus
596			Hare_Snowshoe	Lepus americanus
597			Hawk (Generic name)	[Hawk]
598			Hedgehog (Subfamily)	Erinaceinae (Subfamily)
599			Hedgehog_Pygmy	Atelerix albiventris
600			Hornet	[Hornet]
601			Horse	Equus caballus
602			Horse (Genus Equus)	Equus (Genus)
603			Jackrabbit, Antelope	Lepus alleni
604			Jackrabbit_Black	Lepus insularis
605			Jackrabbit_Black-tailed	Lepus californicus
606			Jackrabbit_Gaillard (White-sided)	Lepus callotis subsp gaillardi
607			Jackrabbit_Tehuantepec	Lepus flavigularis
608			Jackrabbit_White-sided	Lepus callotis subsp callotis
609			Jackrabbit_White-tailed	Lepus townsendii
610			Jaguar	Panthera onca
611			Jaguarundi	Puma yagouaroundi
612			Javelina (Peccary_Collared)	Pecari tajacu
613			Jird_Libyan	Meriones libycus
614			Jird_Mid-day	Meriones meridianus
615			Jird_Mongolian	Meriones unguiculatus
616			Jird_Sundevall's	Meriones crassus
617			Jird_Tamarisk	Meriones tamariscinus
618			Kangaroo (Generic name)	[Kangaroo]
619			Kangaroo rat_Agile	Dipodomys agilis
620			Kangaroo rat_Banner-tailed	Dipodomys spectabilis
621			Kangaroo rat_Big-eared	Dipodomys venustus subsp elephantinus

	AQ	AR	AS	AT	AU	AV
573				Muscardinus avellanarius		
574				Mustela (Genus)		
575				Mustela erminea		
576				Mustela frenata		
577				Mustela nigripes		
578				Mustela nivalis subsp rixosa		
579				Mustela putorius subsp furo		
580				Mustela siberica		
581				Myocastor coypus		
582				Myodopsylla collinsi		
583				Myodopsylla gentilis		
584				Myodopsylla globata		
585				Myodopsylla nordina		
586				Myodopsylla setosa		
587				Myodopsylloides peircei		
588				Myotis (Genus)		
589				Myotis auriculus		
590				Myotis austroriparius		
591				Myotis californicus		
592				Myotis ciliolabrum		
593				Myotis evotis		
594				Myotis grisescens		
595				Myotis keenii		
596				Myotis leibii		
597				Myotis lucifugus		
598				Myotis occultus		
599				Myotis sodalis		
600				Myotis thysanodes		
601				Myotis velifer		
602				Myotis vivesi		
603				Myotis volans		
604				Myotis yumanensis		
605				Nasua (Genus)		
606				Nasua narica		
607				Nasua nasua		
608				Nearctopsylla brooksi		
609				Nearctopsylla genalis		
610				Nearctopsylla georginia		
611				Nearctopsylla hamata		
612				Nearctopsylla hyrtachi		
613				Nearctopsylla jordani		
614				Nearctopsylla martyoungi		
615				Nearctopsylla princei		
616				Nearctopsylla traubi		
617				Neopysylla inopina		
618				Neotoma (Genus)		
619				Neotoma albigula		
620				Neotoma anthonyi		
621				Neotoma augustapalata		

	A	B	C
622			Ralstonia pickettii
623			Ralstonia species
624			Raoultella (Klebsiella) planticola
625			Raoultella (Klebsiella) terrigena
626			Raoultella species
627			Rhinoclatiella aquaspersa
628			Rhinoclatiella species
629			Rhinovirus
630			Rhizobium species
631			Rhizobium/Agrobacterium group
632			Rhizomucor pusillus
633			Rhizopus arrhizus
634			Rhizopus species
635			Rhodococcus coprophilus
636			Rhodococcus equi
637			Rhodococcus species
638			Rhodococcus/Nocardia
639			Rhodotorula rubra
640			Rickettsia africae
641			Rickettsia akari
642			Rickettsia amblyommii
643			Rickettsia asemboensis
644			Rickettsia australis
645			Rickettsia bellii
646			Rickettsia canadensis
647			Rickettsia conorii
648			Rickettsia felis
649			Rickettsia helvetica
650			Rickettsia honei
651			Rickettsia massilliae
652			Rickettsia montanensis
653			Rickettsia parkeri
654			Rickettsia prowazekii
655			Rickettsia rhipicephali
656			Rickettsia rickettsii
657			Rickettsia sibirica
658			Rickettsia species
659			Rickettsia typhi
660			Rickettsiella species
661			Roseomonas gilardii
662			Roseomonas species
663			Rothia species
664			Rubella virus
665			Saccharomyces cerevisiae
666			Saksenaea vasiformis
667			Salmonella Anatum
668			Salmonella Berta
669			Salmonella Blockley
670			Salmonella bongori

	AA	AB	AC	AD
622		Vole_Zempoaltepec	Tamias sonomae	
623		Wallaby (Generic name)	Tamias speciosus	
624		Wallaby_Rock (Genus Petrogale)	Tamias striatus	
625		Wallaroo	Tamias townsendii	
626		Weasel (Genus Mustela)	Tamias umbrinus	
627		Weasel_Long-tailed	Tamiasciurus douglasii	
628		Weasel_Short-tailed	Tamiasciurus hudsonicus	
629		Weasel_Siberian	Taurotragus (Genus)	
630		Wildebeest (Genus Connochaetes)	Taxidea taxus	
631		Wildebeest, Blue	Thomasomys (Genus)	
632		Wolf_Gray	Thomomys (Genus)	
633		Wolf_Gray X Dog Hybrid	Thomomys bottae	
634		Wolf_Red	Thomomys bulbivorus	
635		Wolverine	Thomomys monticola	
636		Wolverine_North American subpecies	Thomomys talpoides	
637		Woodchuck (Groundhog)	Thomomys townsendii	
638		Woodrat (Packrat) (Genus Neotoma)	Thomomys umbrinus	
639		Woodrat_Allen's	Trachemys scripta subsp elegans	
640		Woodrat_Anthony's	Trichoglossus haematodus moluccanus	
641		Woodrat_Bolanos	Uncia uncia	
642		Woodrat_Bryant's	Unknown	
643		Woodrat_Bunker's	Urocyon cinereoargenteus	
644		Woodrat_Bushy-tailed	Urocyon littoralis	
645		Woodrat_Desert	Ursus (Genus)	
646		Woodrat_Dusky-footed	Ursus americanus	
647		Woodrat_Eastern	Ursus arctos	
648		Woodrat_Goldman's	Ursus arctos subsp horribilis	
649		Woodrat_Mexican	Ursus maritimus	
650		Woodrat_Nelson's	Vulpes (Genus)	
651		Woodrat_San Martin Island	Vulpes lagopus	
652		Woodrat_Sonoran	Vulpes macrotis	
653		Woodrat_Southern Plains	Vulpes velox	
654		Woodrat_Stephens'	Vulpes vulpes	
655		Woodrat_Tamaulipan	Vulpes vulpes subsp fulvus	
656		Woodrat_Turner Island	Vulpes zerda	
657		Woodrat_White-throated	Zalophus californianus	
658		Zebra	Zapus hudsonius	
659		Zebra_Burchell's (Plains)	Zapus princeps	
660		Zorilla	Zapus trinotatus	
661				
662				
663				
664				
665				
666				
667				
668				
669				
670				

	AM	AN	AO	AP
622			Kangaroo rat_Chisel-toothed	Dipodomys microps
623			Kangaroo rat_Desert	Dipodomys deserti
624			Kangaroo rat_Fresno (San Joaquin)	Dipodomys nitratoides
625			Kangaroo rat_Giant	Dipodomys ingens
626			Kangaroo rat_Heermann's	Dipodomys heermanni
627			Kangaroo rat_Margarita Island	Dipodomys margaritae
628			Kangaroo rat_Merriam's	Dipodomys merriami
629			Kangaroo rat_Narrow-faced	Dipodomys venustus
630			Kangaroo rat_Nelson's	Dipodomys nelsoni
631			Kangaroo rat_Ord's	Dipodomys ordii
632			Kangaroo rat_Panamint	Dipodomys panamintinus
633			Kangaroo rat_Phillips'	Dipodomys phillipsii
634			Kangaroo rat_San Jose Island	Dipodomys insularis
635			Kangaroo rat_San Quintin	Dipodomys gravipes
636			Kangaroo rat_Stephens'	Dipodomys stephensi
637			Kangaroo rat_Texas	Dipodomys elator
638			Kangaroo, Wallaby, Wallaroo (Genus Macropus)	Macropus (Genus)
639			Kangaroo_Red	Macropus rufus
640			Kinkajou	Potos flavus
641			Kissing bug	Subfamily Triatominae
642			Lagomorph (Order Lagomorpha)	Lagomorpha (Order)
643			Lemur	Lemuridae (Family)
644			Leopard	Panthera pardus
645			Leopard_Snow	Uncia uncia
646			Lice (Order Phthiraptera)	Order Phthiraptera
647			Lion	Panthera leo
648			Lizard (Generic name)	[Lizard]
649			Lizard_Bearded dragon (Generic name)	[Bearded dragon]
650			Lizard_Chameleon (Family Chamaeleonidae)	Chamaeleonidae (Family)
651			Lizard_Chinese Water Dragon	Physignathus cocincinus
652			Lizard_Frilled-neck Lizard	Chlamydosaurus kingii
653			Lizard_Gecko (Generic name)	[Gecko]
654			Lizard_Iguana (Generic name)	[Iguana]
655			Llama	Lama glama
656			Lorikeet (Generic name)	[Lorikeet]
657			Lorikeet_Blue mountain (Rainbow)	Trichoglossus haematodus moluccanus
658			Lynx	Lynx canadensis
659			Macaque (Genus Macaca)	Macaca (Genus)
660			Macaque_Japanese	Macaca fuscata
661			Macaque_Rhesus	Macaca mulatta
662			Macaw (Genus Ara)	Ara (Genus)
663			Maggot	[Maggot]
664			Margay	Leopardus wiedii
665			Marmoset (Genus Callithrix)	Callithrix (Genus)
666			Marmoset_Weid's Black-tufted-ear	Callithrix kuhlii
667			Marmot (Genus Marmota)	Marmota (Genus)
668			Marmot_Alpine	Marmota marmota
669			Marmot_Gray	Marmota baibacina
670			Marmot_Hoary	Marmota caligata

	AQ	AR	AS	AT	AU	AV
622				Neotoma bryanti		
623				Neotoma bunker		
624				Neotoma cinerea		
625				Neotoma floridana		
626				Neotoma fuscipes		
627				Neotoma goldmani		
628				Neotoma lepida		
629				Neotoma martinensis		
630				Neotoma mexicana		
631				Neotoma micropus		
632				Neotoma nelsoni		
633				Neotoma palatina		
634				Neotoma phenax		
635				Neotoma stephensi		
636				Neotoma varia		
637				Neovison macrodon		
638				Neovison vison		
639				Noctilio (Genus)		
640				Noctilio leporinus		
641				Nosopsyllus faciatus		
642				Nosopsyllus laeviceps		
643				Nosopsyllus londiniensis		
644				Nycteridopsylla chapini		
645				Nycteridopsylla vancouverensis		
646				Nycticeius humeralis		
647				Nyctinomops femorosaccus		
648				Nyctinomops macrotis		
649				Ochotona (Genus)		
650				Ochotona princeps		
651				Ochrotomys nuttalli		
652				Odocoileus hemionus		
653				Odocoileus hemionus subsp columbianus		
654				Odocoileus virginianus		
655				Odontopsyllus dentatus		
656				Odontopsyllus multispinosus		
657				Oligoryzomys (Genus)		
658				Ondatra zibethicus		
659				Onychomys leucogaster		
660				Onychomys torridus		
661				Opisocrostis vespertalis		
662				Opisodasys (Opisocrostis) enoplus		
663				Opisodasys (Opisocrostis) hollandi		
664				Opisodasys (Opisocrostis) nesiotus		
665				Opisodasys (Opisocrostis) perotensis		
666				Opisodasys (Opisocrostis) pseudarctomys		
667				Opisodasys (Opisocrostis) robustus		
668				Opisodasys keeni		
669				Orchopeas cadens		
670				Orchopeas dieteri		

	A	B	C
671			Salmonella Braenderup
672			Salmonella Cerro
673			Salmonella Choleraesuis
674			Salmonella Duesseldorf
675			Salmonella enterica
676			Salmonella enterica subsp arizonae
677			Salmonella enterica subsp enterica
678			Salmonella enterica subsp indica
679			Salmonella enterica subsp salamae
680			Salmonella enterica subsp. diarizonae
681			Salmonella enterica subsp. houtenae
682			Salmonella Enteritidis
683			Salmonella Hadar
684			Salmonella Heidelberg
685			Salmonella Infantis
686			Salmonella Javiana
687			Salmonella Litchfield
688			Salmonella Mbandaka
689			Salmonella Mikawasima
690			Salmonella Montevideo
691			Salmonella Newport
692			Salmonella Oslo
693			Salmonella Pakistan
694			Salmonella Pomona
695			Salmonella Poona
696			Salmonella Putten
697			Salmonella Saarbruecken
698			Salmonella Saintpaul
699			Salmonella Sandiego
700			Salmonella species
701			Salmonella Telelkebir
702			Salmonella Thompson
703			Salmonella Typhi
704			Salmonella Typhimurium
705			Salmonella Typhimurium var O5-
706			Salmonella Uganda
707			Salmonella Worthington
708			Sarcocystis species
709			SARS coronavirus
710			Scedosporium apiospermum
711			Scedosporium prolificans
712			Schistosoma haematobium
713			Schistosoma japonicum
714			Schistosoma mansoni
715			Schistosoma species
716			Scopulariopsis brumptii
717			Scytalidium species
718			Segniliparus species
719			Serratia marcescens

	AM	AN	AO	AP
671			Marmot_Olympic	Marmota olympus
672			Marmot_Vancouver	Marmota vancouverensis
673			Marmot_Yellow-bellied	Marmota flaviventris
674			Marsupial (Superorder Marsupalia)	Marsupalia (Superorder)
675			Marten_American	Martes americana
676			Meerkat	Suricata suricatta
677			Mice_Deer (Genus Peromyscus)	Peromyscus (Genus)
678			Mice_Oldfield (Genus Thomasomys)	Thomasomys (Genus)
679			Millipede (Class Diplopoda)	Class Diplopoda
680			Mink_American	Neovison vison
681			Mink_Sea	Neovison macrodon
682			Mite (Order Mesostigmata)	Order Mesostigmata
683			Mole (Family Talpidae)	Talpidae (Family)
684			Mole_Broad-footed	Scapanus latimanus
685			Mole_Eastern	Scalopus aquaticus
686			Mole_Red-footed	Scapanus orarius
687			Mole_Snow	Scapanus townsendii
688			Mongoose (Family Herpestidae)	Herpestidae (Family)
689			Mongoose_Java (Indian)	Herpestes javanicus
690			Monkey (Generic name)	[Monkey]
691			Monkey_Brown capuchin	Cebus apella
692			Monkey_Capuchin (Genus Cebus)	Cebus (Genus)
693			Monkey_De Brazza's	Cercopithecus neglectus
694			Monkey_Owl	Aotus (Genus)
695			Monkey_Squirrel, Common	Saimiri sciureus
696			Monkey_Tamarin (Genus Saguinus)	Saguinus (Genus)
697			Monkey_Tamarin, Cotton Top	Saguinus oedipus
698			Moose	Alces alces
699			Mosquitoes (Family Culicidae)	Family Culicidae
700			Mouse (Generic name)	[Mouse]
701			Mouse, Northern Rock	Peromyscus nastus
702			Mouse_Angel Island	Peromyscus guardia
703			Mouse_Aztec	Peromyscus aztecus
704			Mouse_Black-eared	Peromyscus melanotis
705			Mouse_Brush	Peromyscus boylii
706			Mouse_Cactus	Peromyscus eremicus
707			Mouse_California	Peromyscus californicus
708			Mouse_Canyon	Peromyscus crinitus
709			Mouse_Chihuahuan	Peromyscus polius
710			Mouse_Cotton	Peromyscus gossypinus
711			Mouse_Deer	Peromyscus maniculatus
712			Mouse_Deer Burt's	Peromyscus caniceps
713			Mouse_Deer, Big	Peromyscus grandis
714			Mouse_Deer, Blackish	Peromyscus furvus
715			Mouse_Deer, Brown	Peromyscus megalops
716			Mouse_Deer, Chiapan	Peromyscus zarhynchus
717			Mouse_Deer, Crested-tailed	Habromys lophurus
718			Mouse_Deer, Dickey's	Peromyscus dickeyi
719			Mouse_Deer, El Carrizo	Peromyscus ochraventer

	AQ	AR	AS	AT	AU	AV
671				Orchopeas fulleri		
672				Orchopeas howardi		
673				Orchopeas latens		
674				Orchopeas leucopus		
675				Orchopeas neotomae		
676				Orchopeas nepos		
677				Orchopeas sexdentatus		
678				Orchopeas sp. (Genus)		
679				Order Araneae		
680				Order Mesostigmata		
681				Order Phthiraptera		
682				Order Siphonaptera		
683				Oreamnos (Genus)		
684				Oropsylla (Opisocrostis) labis		
685				Oropsylla alaskensis		
686				Oropsylla arctomys		
687				Oropsylla augustsoni		
688				Oropsylla bruneri		
689				Oropsylla hirsuta		
690				Oropsylla idahoensis		
691				Oropsylla labis		
692				Oropsylla montana		
693				Oropsylla oregonensis		
694				Oropsylla ruprestris		
695				Oropsylla silantiewi		
696				Oropsylla spenceri		
697				Oropsylla stanfordi		
698				Oropsylla tuberculata cynomuris		
699				Oropsylla tuberculata tuberculata		
700				Oropsylla washingtonensis		
701				Orxy (Genus)		
702				Oryctolagus (Genus)		
703				Oryctolagus cuniculus		
704				Oryx gazella		
705				Oryzomys subflavus		
706				Osgoodomys banderanus		
707				Ovis (Genus)		
708				Ovis aries		
709				Ovis canadensis		
710				Ovis dalli		
711				P. echinophagoides		
712				Pan (Genus)		
713				Pantera pardus		
714				Panthera leo		
715				Panthera onca		
716				Panthera tigris		
717				Pantherophis guttatus		
718				Papio (Genus)		
719				Pappogeomys castanops		

	A	B	C
720			Serratia proteamaculans
721			Serratia species
722			Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2)
723			Shewanella species
724			Shigella boydii
725			Shigella boydii, serovar 1
726			Shigella boydii, serovar 2
727			Shigella boydii, serovar 4
728			Shigella dysenteriae
729			Shigella flexneri
730			Shigella sonnei
731			Shigella species
732			Sphingobacterium species
733			Sphingomonas paucimobilis
734			Sphingomonas phyllosphaerae
735			Sphingomonas species
736			Sporothrix schenckii
737			Sporothrix species
738			Sporotrichum pruinosum
739			Staphylococcus aureus
740			Staphylococcus auricularis
741			Staphylococcus capitis
742			Staphylococcus capitis ss urealyticus
743			Staphylococcus cohnii
744			Staphylococcus cohnii ss urealyticus
745			Staphylococcus condimenti
746			Staphylococcus epidermidis
747			Staphylococcus haemolyticus
748			Staphylococcus hominis
749			Staphylococcus intermedius
750			Staphylococcus lugdunensis
751			Staphylococcus simulans
752			Staphylococcus species
753			Staphylococcus warneri
754			Staphylococcus, coagulase negative
755			Stenotrophomonas maltophilia
756			Stenotrophomonas species
757			Streptobacillus moniliformis
758			Streptobacillus species
759			Streptococcus agalactiae
760			Streptococcus alactolyticus
761			Streptococcus anginosus
762			Streptococcus canis
763			Streptococcus constellatus
764			Streptococcus equinus
765			Streptococcus group C variant
766			Streptococcus intermedius
767			Streptococcus mitis
768			Streptococcus mutans

	AM	AN	AO	AP
720			Mouse_Deer, Guatemalan	Peromyscus guatemalensis
721			Mouse_Deer, Mexican	Peromyscus mexicanus
722			Mouse_Deer, Michoacan	Osgoodomys banderanus
723			Mouse_Deer, Nelson's Giant	Megadontomys nelsoni
724			Mouse_Deer, Northwestern	Peromyscus keeni
725			Mouse_Deer, Pemberton's	Peromyscus pembertoni
726			Mouse_Deer, Puebla	Peromyscus mekisturus
727			Mouse_Deer, Slender-tailed	Habromys lepturus
728			Mouse_Deer, Stirton's	Peromyscus stirtoni
729			Mouse_Deer, Thomas' Giant	Megadontomys thomasi
730			Mouse_Deer, Yucatan	Peromyscus yucatanicus
731			Mouse_Deer, Zacatecan	Peromyscus difficilis
732			Mouse_Deer, Zempoaltepec	Peromyscus melanocarpus
733			Mouse_Dormouse, Common	Muscardinus avellanarius
734			Mouse_False Canyon	Peromyscus pseudocrinitus
735			Mouse_Florida	Podomys floridanus
736			Mouse_Golden	Ochrotomys nuttalli
737			Mouse_Hairy-tailed Bolo	Bolomys lasiurus
738			Mouse_Harvest (Genus Reithrodontomys)	Reithrodontomys (Genus)
739			Mouse_Harvest, Chiriqui	Reithrodontomys creper
740			Mouse_Harvest, Darien	Reithrodontomys darienensis
741			Mouse_Harvest, Eastern	Reithrodontomys humulis
742			Mouse_Harvest, Fulvous	Reithrodontomys fulvescens
743			Mouse_Harvest, Hairy	Reithrodontomys hirsutus
744			Mouse_Harvest, Mexican	Reithrodontomys mexicanus
745			Mouse_Harvest, Narrow-nosed	Reithrodontomys tenuirostris
746			Mouse_Harvest, Plains	Reithrodontomys montanus
747			Mouse_Harvest, Rodriguez's	Reithrodontomys rodriguezi
748			Mouse_Harvest, Saltmarsh	Reithrodontomys raviventris
749			Mouse_Harvest, Short-nosed	Reithrodontomys brevirostris
750			Mouse_Harvest, Slender	Reithrodontomys gracilis
751			Mouse_Harvest, Small-toothed	Reithrodontomys microdon
752			Mouse_Harvest, Sonoran	Reithrodontomys burti
753			Mouse_Harvest, Sumichrast's	Reithrodontomys sumichrasti
754			Mouse_Harvest, Volcano	Reithrodontomys chrysopsis
755			Mouse_Harvest, Western	Reithrodontomys megalotis
756			Mouse_House	Mus musculus
757			Mouse_Jumping, Meadow	Zapus hudsonius
758			Mouse_Jumping, Pacific	Zapus trinotatus
759			Mouse_Jumping, Western	Zapus princeps
760			Mouse_Marsh	Peromyscus perfulvus
761			Mouse_Merriam's (Mesquite)	Peromyscus merriami
762			Mouse_Nayarit	Peromyscus simulus
763			Mouse_Neonatal (Generic name)	[Mouse_Neonatal]
764			Mouse_Northern Grasshopper	Onychomys leucogaster
765			Mouse_Oldfield	Peromyscus polionotus
766			Mouse_Perote	Peromyscus bullatus
767			Mouse_Pinyon	Peromyscus truei
768			Mouse_Plateau	Peromyscus melanophrys

	AQ	AR	AS	AT	AU	AV
720				Paratyphloceras oregonensis		
721				Pecari tajacu		
722				Pediculus sp (Genus) Nit, Louse		
723				Perdix perdix		
724				Perognathus alticola		
725				Perognathus amplus		
726				Perognathus fasciatus		
727				Perognathus flavescens		
728				Perognathus flavus		
729				Perognathus inornatus		
730				Perognathus longimembris		
731				Perognathus merriami		
732				Perognathus parvus		
733				Perognathus parvus subsp xanthonotus		
734				Peromyscopsylla catatina		
735				Peromyscopsylla draco		
736				Peromyscopsylla ebrighti		
737				Peromyscopsylla hamifer		
738				Peromyscopsylla hesperomys		
739				Peromyscopsylla ostsibirica		
740				Peromyscopsylla scotti		
741				Peromyscopsylla selenis		
742				Peromyscus (Genus)		
743				Peromyscus aztecus		
744				Peromyscus boylii		
745				Peromyscus bullatus		
746				Peromyscus californicus		
747				Peromyscus caniceps		
748				Peromyscus crinitus		
749				Peromyscus dickeyi		
750				Peromyscus difficilis		
751				Peromyscus eremicus		
752				Peromyscus furvus		
753				Peromyscus gossypinus		
754				Peromyscus grandis		
755				Peromyscus guardia		
756				Peromyscus guatemalensis		
757				Peromyscus keeni		
758				Peromyscus leucopus		
759				Peromyscus maniculatus		
760				Peromyscus megalops		
761				Peromyscus mekisturus		
762				Peromyscus melanocarpus		
763				Peromyscus melanophrys		
764				Peromyscus melanotis		
765				Peromyscus merriami		
766				Peromyscus mexicanus		
767				Peromyscus nastus		
768				Peromyscus ochraventer		



	A	B	C
769			Streptococcus pluranimalium
770			Streptococcus pneumoniae
771			Streptococcus pyogenes
772			Streptococcus salivarius
773			Streptococcus sanguinis
774			Streptococcus species
775			Streptococcus suis
776			Streptococcus viridans
777			Streptococcus, Alpha-hemolytic
778			Streptococcus, Beta-hemolytic
779			Streptococcus, group A
780			Streptococcus, group B
781			Streptococcus, group C
782			Streptococcus, group F
783			Streptomyces species
784			Strongyloides species
785			Strongyloides stercoralis
786			Syncephalastrum racemosum
787			Taenia solium
788			Taenia species
789			Tapeworm
790			Tatlockia (Legionella) micdadei
791			Torulopsis species
792			Toxocara canis
793			Toxocara cati
794			Toxocara species
795			Toxoplasma gondii
796			Toxoplasma species
797			Trematode
798			Treponema pallidum
799			Treponema species
800			Trichinella species
801			Trichinella spiralis
802			Trichomonas species
803			Trichomonas vaginalis
804			Trichophyton mentagrophytes var. mentagrophytes
805			Trichophyton raubitschekii
806			Trichophyton rubrum
807			Trichophyton schoenleinii
808			Trichophyton soudanense
809			Trichophyton species
810			Trichophyton tonsurans
811			Trichophyton verrucosum
812			Trichophyton violaceum
813			Trichosporon asahii
814			Trichosporon species
815			Trichuris species
816			Trichuris trichuria
817			Trypanosoma brucei

	AM	AN	AO	AP
769			Mouse_Pocket, Arizona	Perognathus amplus
770			Mouse_Pocket, Bailey's	Chaetodipus baileyi
771			Mouse_Pocket, California	Chaetodipus californicus
772			Mouse_Pocket, Desert	Chaetodipus penicillatus
773			Mouse_Pocket, Goldman's	Chaetodipus goldmani
774			Mouse_Pocket, Great Basin	Perognathus parvus
775			Mouse_Pocket, Hispid	Chaetodipus hispidus
776			Mouse_Pocket, Lined	Chaetodipus lineatus
777			Mouse_Pocket, Little	Perognathus longimembris
778			Mouse_Pocket, Little Desert	Chaetodipus arenarius
779			Mouse_Pocket, Long-tailed	Chaetodipus formosus
780			Mouse_Pocket, Merriam's	Perognathus merriami
781			Mouse_Pocket, Olive-backed	Perognathus fasciatus
782			Mouse_Pocket, Plains	Perognathus flavescens
783			Mouse_Pocket, Rock	Chaetodipus intermedius
784			Mouse_Pocket, San Diego	Chaetodipus fallax
785			Mouse_Pocket, San Joaquin	Perognathus inornatus
786			Mouse_Pocket, Silky	Perognathus flavus
787			Mouse_Pocket, Sinaloan	Chaetodipus pernix
788			Mouse_Pocket, Spiny	Chaetodipus spinatus
789			Mouse_Pocket, White-eared	Perognathus alticola
790			Mouse_Pocket, Yellow-eared	Perognathus parvus subsp xanthonotus
791			Mouse_San Esteban Island	Peromyscus stephani
792			Mouse_Santa Cruz	Peromyscus sejugis
793			Mouse_Sitka	Peromyscus sitkensis
794			Mouse_Slevin's	Peromyscus slevini
795			Mouse_Southern Grasshopper	Onychomys torridus
796			Mouse_White-ankled	Peromyscus pectoralis
797			Mouse_White-footed Deer	Peromyscus leucopus
798			Muskrat	Ondatra zibethicus
799			Nit, Louse	Pediculus sp (Genus) Nit, Louse
800			Nutria	Myocastor coypus
801			Ocelot	Leopardus pardalis
802			Opossum_Virginia	Didelphis virginiana
803			Orangutan	Pongo pygmaeus
804			Oryx (Genus Oryx)	Orxy (Genus)
805			Otter_River	Lontra canadensis
806			Otter_Sea	Enhydra lutris
807			Owl (Generic name)	[Owl]
808			Owl, Great Horned	Bubo virginianus
809			Oxen, True cattle (Genus Bos)	Bos (Genus)
810			Oyster (Generic name)	[Oyster]
811			Panda_Red (Lesser)	Ailurus fulgens
812			Partridge_Gray (Hungarian)	Perdix perdix
813			Pig (Generic name)	Sus (Genus)
814			Pig_Feral	Sus scrofa
815			Pigeon (Generic name)	[Pigeon]
816			Pika (Genus Ochotona)	Ochotona (Genus)
817			Pika_American (Rocky Mountain)	Ochotona princeps

	AQ	AR	AS	AT	AU	AV
769				Peromyscus pectoralis		
770				Peromyscus pambertoni		
771				Peromyscus perfulvus		
772				Peromyscus polionotus		
773				Peromyscus polius		
774				Peromyscus pseudocrinitus		
775				Peromyscus sejugis		
776				Peromyscus simulus		
777				Peromyscus sitkensis		
778				Peromyscus slevini		
779				Peromyscus stephani		
780				Peromyscus stirtoni		
781				Peromyscus zarhynchus		
782				Petaurus breviceps		
783				Petrogale (Genus)		
784				Phalacrotylla allos		
785				Phalacrotylla hamata		
786				Phalacrotylla morlani		
787				Phalacrotylla nivalis		
788				Phalacrotylla oregonensis		
789				Phalacrotylla paradisea		
790				Phenacomys intermedius		
791				Phoca vitulina		
792				Phyllostomus (Genus)		
793				Phyllostomus hastatus		
794				Physignathus cocincinus		
795				Pipistrellus hesperus		
796				Pipistrellus subflavus		
797				Pituophis melanoleucus		
798				Plecotus townsendii		
799				Pleochaetis exilis		
800				Pleochaetis mundus		
801				Pleochaetis paramundus		
802				Pleochaetis sp. (Genus)		
803				Plusaetis asetis		
804				Plusaetis aztecus		
805				Plusaetis dolens		
806				Plusaetis mathesoni		
807				Plusaetis parus		
808				Plusaetis ponsi		
809				Plusaetis sibynus		
810				Plusaetis soberoni		
811				Podomys floridanus		
812				Polygenis adocetus		
813				Polygenis floridanus		
814				Polygenis gwyni		
815				Polygenis martinezbaezi		
816				Polygenis odiosus		
817				Polygenis rozeboomi		



	A	B	C
818			Trypanosoma cruzi
819			Trypanosoma species
820			Tsukamurella inchnonensis
821			Tsukamurella pulmonis
822			Tsukamurella species
823			Tsukamurella tyrosinosolvens
824			Unknown
825			Ustilago species
826			Vaccinia virus (smallpox vaccine)
827			Variola virus (smallpox)
828			Vibrio alginolyticus
829			Vibrio cholerae
830			Vibrio cidicii
831			Vibrio cincinnatiensis
832			Vibrio fluvialis
833			Vibrio furnissii
834			Vibrio harveyi
835			Vibrio hollisae
836			Vibrio metoecus
837			Vibrio metschnikovii
838			Vibrio mimicus
839			Vibrio navarrensis
840			Vibrio parahaemolyticus
841			Vibrio species
842			Vibrio vulnificus
843			Virus
844			Wangiella dermatitidis
845			Weissella paramesenteroides
846			Whipworm (Trichuris trichiura)
847			Williamsia species
848			Wuchereria bancrofti
849			Wuchereria species
850			Xanthomonas species
851			Yersinia enterocolitica
852			Yersinia frederiksenii
853			Yersinia intermedia
854			Yersinia kristensenii
855			Yersinia massiliensis
856			Yersinia pestis
857			Yersinia pseudotuberculosis
858			Yersinia ruckeri
859			Yersinia species
860			Yokenella regensburgei
861			Zika virus
862			Zygomycetes
863			Zygosaccharomyces species
864			
865			
866			

	AM	AN	AO	AP
818			Polecat_European	Mustela putorius subsp furo
819			Porcupine	Erethizon dorsatum
820			Prairie dog (Genus Cynomys)	Cynomys (Genus)
821			Prairie Dog, Utah	Cynomys parvidens
822			Prairie Dog_Black-tailed	Cynomys ludovicianus
823			Prairie Dog_Gunnison's	Cynomys gunnisoni
824			Prairie Dog_Mexican	Cynomys mexicanus
825			Prairie Dog_White-tailed	Cynomys leucurus
826			Primate (Order Primates)	Primates (Order)
827			Primate_Nonhuman (Generic name)	[Primate_Nonhuman]
828			Quail (Generic name)	[Quail]
829			Rabbit (Generic name)	[Rabbit]
830			Rabbit_Brush	Sylvilagus bachmani
831			Rabbit_Cottontail, Desert	Sylvilagus audubonii
832			Rabbit_Cottontail, Eastern	Sylvilagus floridanus
833			Rabbit_Cottontail, Mexican	Sylvilagus cunicularius
834			Rabbit_Cottontail, New England	Sylvilagus transitionalis
835			Rabbit_Cottontail, Tres Marias	Sylvilagus graysoni
836			Rabbit_Cottontails (Genus Sylvilagus)	Sylvilagus (Genus)
837			Rabbit_European	Oryctolagus cuniculus
838			Rabbit_European (Genus Oryctolagus)	Oryctolagus (Genus)
839			Rabbit_Forest	Sylvilagus brasiliensis
840			Rabbit_Marsh	Sylvilagus palustris
841			Rabbit_Nuttall's	Sylvilagus nuttallii
842			Rabbit_Omilteme	Sylvilagus insonus
843			Rabbit_Pygmy	Brachylagus idahoensis
844			Rabbit_San Jose Brush	Sylvilagus mansuetus
845			Rabbit_Swamp	Sylvilagus aquaticus
846			Raccoon, Common	Procyon lotor
847			Raccoon_Cozumel (Pygmy)	Procyon pygmaeus
848			Raccoon_Crab-eating	Procyon cancrivorus
849			Rat (Genus Rattus)	Rattus (Genus)
850			Rat_Black (Roof)	Rattus rattus
851			Rat_Cotton	Sigmodon alleni
852			Rat_Cotton, Arizona	Sigmodon arizonae
853			Rat_Cotton, White-eared	Sigmodon leucotis
854			Rat_Cotton, Yellow-nosed	Sigmodon ochrognathus
855			Rat_Cotton, Zacatecan (Tawny-bellied)	Sigmodon fulviventor
856			Rat_Himalayan	Rattus nitidus
857			Rat_Hispid Cotton	Sigmodon hispidus
858			Rat_Isthmus, Mount Pirri	Isthmomys pirrensis
859			Rat_Norway	Rattus norvegicus
860			Rat_Polynesian	Rattus exulans
861			Rat_Pygmy rice (Genus Oligoryzomys)	Oligoryzomys (Genus)
862			Rat_Terraced rice	Oryzomys subflavus
863			Rat_Woosnam's Brush-furred	Lophuromys woosnami
864			Rat_Yellow Isthmus	Isthmomys flavidus
865			Rattlesnake_Aruba Island	Crotalus dirissus subsp unicolor
866			Rattlesnake_Tiger	Crotalus tigris

WA-KINGCO-20-0492-G-000142

	AQ	AR	AS	AT	AU	AV
818				Polygenis sp. (Genus)		
819				Polygenis vazquezi		
820				Polygenis vulcanius		
821				Pongo pygmaeus		
822				Potos flavus		
823				Primates (Order)		
824				Procyon cancrivorus		
825				Procyon lotor		
826				Procyon pygmaeus		
827				Pteronotus macleayi		
828				Pteronotus parnelli		
829				Pteronotus quadridens		
830				Pteropus (Genus)		
831				Pteropus giganteus		
832				Pteropus rodricensis		
833				Pulex alverazi		
834				Pulex irritans		
835				Pulex porcinus		
836				Pulex simulans		
837				Pulex sinoculus		
838				Pulex sp. (Genus)		
839				Puma concolor		
840				Puma yagouaroundi		
841				Pythonidae (Family)		
842				Rangifer tarandus		
843				Rattus (Genus)		
844				Rattus exulans		
845				Rattus nitidus		
846				Rattus norvegicus		
847				Rattus rattus		
848				Reithrodontomys (Genus)		
849				Reithrodontomys brevirostris		
850				Reithrodontomys burti		
851				Reithrodontomys chrysopsis		
852				Reithrodontomys creper		
853				Reithrodontomys darienensis		
854				Reithrodontomys fulvescens		
855				Reithrodontomys gracilis		
856				Reithrodontomys hirsutus		
857				Reithrodontomys humulis		
858				Reithrodontomys megalotis		
859				Reithrodontomys mexicanus		
860				Reithrodontomys microdon		
861				Reithrodontomys montanus		
862				Reithrodontomys raviventris		
863				Reithrodontomys rodriguezi		
864				Reithrodontomys sumichrasti		
865				Reithrodontomys tenuirostris		
866				Reptilia (Class)		

	AM	AN	AO	AP
867			Redpoll_Common	Carduelis flammea
868			Reindeer (Caribou)	Rangifer tarandus
869			Reptile (Class Reptilia)	Reptilia (Class)
870			Rhinoceros_Black	Diceros bicornis
871			Rhinoceros_White	Ceratotherium simum (organism)
872			Rodent (Order Rodentia)	Rodentia (Order)
873			Sea Lion_California	Zalophus californianus
874			Seal (Generic name)	[Seal]
875			Seal_Harbor	Phoca vitulina
876			Sheep	Ovis aries
877			Sheep (Genus Ovis)	Ovis (Genus)
878			Sheep_Bighorn	Ovis canadensis
879			Sheep_Dall's	Ovis dalli
880			Shrew_American Short-tailed (Genus Blarina)	Blarina (Genus)
881			Shrew_Arctic	Sorex arcticus
882			Shrew_Carmen Mountain	Sorex milleri
883			Shrew_Dwarf	Sorex nanus
884			Shrew_Gaspe	Sorex gaspensis
885			Shrew_Glacier Bay Water	Sorex alaskanus
886			Shrew_House	Suncus murinus
887			Shrew_Inyo	Sorex tenellus
888			Shrew_Large-toothed	Sorex macrodon
889			Shrew_Least	Cryptotis parva
890			Shrew_Long-tailed	Sorex dispar
891			Shrew_Masked	Sorex cinereus
892			Shrew_Merriam's	Sorex merriami
893			Shrew_Mexican Long-tailed	Sorex oreopolus
894			Shrew_Mt. Lyell	Sorex lyelli
895			Shrew_Ornate	Sorex ornatus
896			Shrew_Pacific Water	Sorex bendirii
897			Shrew_Preble's	Sorex preblei
898			Shrew_Pribilof	Sorex pribilofensis
899			Shrew_Pygmy	Sorex hoyi
900			Shrew_San Cristobal	Sorex stizodon
901			Shrew_Santa Catalina	Sorex ornatus subsp willetti
902			Shrew_Saussure's	Sorex saussurei
903			Shrew_Sclater's	Sorex sclateri
904			Shrew_Smoky	Sorex fumeus
905			Shrew_Southeastern	Sorex longirostris
906			Shrew_St. Lawrence Island	Sorex jacksoni
907			Shrew_Trowbridge's	Sorex trowbridgii
908			Shrew_Vagrant	Sorex vagrans
909			Shrew_Verapaz	Sorex veraepacis
910			Shrew_Water	Sorex palustris
911			Siskin_Pine (Eurasian)	Carduelis spinus
912			Skunk (Family Mephitidae)	Mephitidae (Family)
913			Skunk_Eastern Hog-nosed	Conepatus leuconotus
914			Skunk_Hooded	Mephitis macroura

	AQ	AR	AS	AT	AU	AV
867				Rhadinopsylla arborea		
868				Rhadinopsylla difficilis		
869				Rhadinopsylla fraterna		
870				Rhadinopsylla heiseri		
871				Rhadinopsylla linta		
872				Rhadinopsylla liventricosa		
873				Rhadinopsylla media		
874				Rhadinopsylla mexicana		
875				Rhadinopsylla multidenticulata		
876				Rhadinopsylla orama		
877				Rhadinopsylla sectilis goodi		
878				Rhadinopsylla sectilis sectilis		
879				Rhadinopsylla sp. (Genus)		
880				Rhipicephalus microplus		
881				Rhipicephalus sanguineus		
882				Rhipicephalus spp.		
883				Rhombomys opimus		
884				Rodentia (Order)		
885				Rousettus aegyptiacus		
886				Rousettus lanosus		
887				Saguinus (Genus)		
888				Saguinus oedipus		
889				Saimiri sciureus		
890				Scalopus aquaticus		
891				Scapanus latimanus		
892				Scapanus orarius		
893				Scapanus townsendii		
894				Sciuridae (Family)		
895				Sciurus aberti		
896				Sciurus alleni		
897				Sciurus arizonensis		
898				Sciurus aureogaster		
899				Sciurus carolinensis		
900				Sciurus coliaiei		
901				Sciurus deppei		
902				Sciurus granatensis		
903				Sciurus griseus		
904				Sciurus nayaritensis		
905				Sciurus niger cinereus		
906				Sciurus oculatus		
907				Sciurus richmondi		
908				Sciurus variegatoides		
909				Sciurus vulgaris		
910				Sciurus yucatanensis		
911				Scuirus (Genus)		
912				Serpentes (Suborder)		
913				Sigmodon alleni		
914				Sigmodon arizonae		

	AM	AN	AO	AP
915			Skunk_Spotted (Genus)	Spilogale (Genus)
916			Skunk_Spotted, Eastern	Spilogale putorius
917			Skunk_Spotted, Pygmy	Spilogale pygmaea
918			Skunk_Spotted, Southern	Spilogale angustifrons
919			Skunk_Spotted, Western	Spilogale gracilis
920			Skunk_Striped	Mephitis mephitis
921			Snake (Suborder Serpentes)	Serpentes (Suborder)
922			Snake_Boa, Red-tailed	Boa constrictor subsp constrictor
923			Snake_Pine	Pituophis melanoleucus
924			Snake_Python (Family Pythonidae)	Pythonidae (Family)
925			Snake_Rat, Red (Corn)	Pantherophis guttatus
926			Spiders (Order Araneae)	Order Araneae
927			Squirrel (Family Sciuridae)	Sciuridae (Family)
928			Squirrel, Rock	Spermophilus variegatus
929			Squirrel_Allen's	Sciurus alleni
930			Squirrel_American Red	Tamiasciurus hudsonicus
931			Squirrel_Americian Flying (Genus Glaucomys)	Glaucomys (Genus)
932			Squirrel_Arizona Gray	Sciurus arizonensis
933			Squirrel_Collie's	Sciurus coliaei
934			Squirrel_Deppe's	Sciurus deppei
935			Squirrel_Douglas'	Tamiasciurus douglasii
936			Squirrel_Eastern Fox	Sciurus niger cinereus
937			Squirrel_Eastern Gray	Sciurus carolinensis
938			Squirrel_Espiritu Santo Island Antelope	Ammospermophilus insularis
939			Squirrel_Eurasian Red	Sciurus vulgaris
940			Squirrel_Ground (Genus Spermophilus)	Spermophilus (Genus)
941			Squirrel_Ground, Baja California Rock	Spermophilus atricapillus
942			Squirrel_Ground, Belding's	Spermophilus beldingi
943			Squirrel_Ground, California	Spermophilus beecheyi
944			Squirrel_Ground, Cascade Golden-mantled	Spermophilus saturatus
945			Squirrel_Ground, Columbian	Spermophilus columbianus
946			Squirrel_Ground, Franklin's	Spermophilus franklinii
947			Squirrel_Ground, Golden-mantled	Spermophilus lateralis
948			Squirrel_Ground, Little	Spermophilus pygmaeus
949			Squirrel_Ground, Long-clawed	Spermophilopsis leptodactylus
950			Squirrel_Ground, Long-tailed	Spermophilus undulatus
951			Squirrel_Ground, Mexican	Spermophilus mexicanus
952			Squirrel_Ground, Mohave	Spermophilus mohavensis
953			Squirrel_Ground, Perote	Spermophilus perotensis
954			Squirrel_Ground, Richardson's	Spermophilus richardsonii
955			Squirrel_Ground, Ring-tailed	Spermophilus annulatus
956			Squirrel_Ground, Round-tailed	Spermophilus tereticaudus
957			Squirrel_Ground, Sierra Madre	Spermophilus madrensis
958			Squirrel_Ground, Spotted	Spermophilus spilosoma
959			Squirrel_Ground, Thirteen-lined	Spermophilus tridecemlineatus
960			Squirrel_Ground, Townsend's	Spermophilus townsendii
961			Squirrel_Ground, Tropical	Spermophilus adocetus
962			Squirrel_Ground, Uinta	Spermophilus armatus
963			Squirrel_Ground, Washington	Spermophilus washingtoni

WA-KINGCO-20-0492-G-000146

	AQ	AR	AS	AT	AU	AV
915				Sigmodon fulviventor		
916				Sigmodon hispidus		
917				Sigmodon leucotis		
918				Sigmodon ochrognathus		
919				Simulium nigricoxum		
920				Sorex alaskanus		
921				Sorex arcticus		
922				Sorex bendirii		
923				Sorex cinereus		
924				Sorex dispar		
925				Sorex fumeus		
926				Sorex gaspensis		
927				Sorex hoyi		
928				Sorex jacksoni		
929				Sorex longirostris		
930				Sorex lyelli		
931				Sorex macrodon		
932				Sorex merriami		
933				Sorex milleri		
934				Sorex nanus		
935				Sorex oreopolus		
936				Sorex ornatus		
937				Sorex ornatus subsp willetti		
938				Sorex palustris		
939				Sorex preblei		
940				Sorex pribilofensis		
941				Sorex saussurei		
942				Sorex sclateri		
943				Sorex stizodon		
944				Sorex tenellus		
945				Sorex trowbridgii		
946				Sorex vagrans		
947				Sorex veraepacis		
948				Spermophilopsis leptodactylus		
949				Spermophilus (Genus)		
950				Spermophilus adocetus		
951				Spermophilus annulatus		
952				Spermophilus armatus		
953				Spermophilus atricapillus		
954				Spermophilus beecheyi		
955				Spermophilus beldingi		
956				Spermophilus columbianus		
957				Spermophilus franklinii		
958				Spermophilus lateralis		
959				Spermophilus madrensis		
960				Spermophilus mexicanus		
961				Spermophilus mohavensis		
962				Spermophilus perotensis		
963				Spermophilus pygmaeus		

	AM	AN	AO	AP
964			Squirrel_Harris' Antelope	Ammospermophilus harrisi
965			Squirrel_Mexican Gray	Sciurus aureogaster
966			Squirrel_Nayarit	Sciurus nayaritensis
967			Squirrel_Nelson's (San Joaquin Antelope)	Ammospermophilus nelsoni
968			Squirrel_Northern flying	Glaucomys sabrinus
969			Squirrel_Peter's	Sciurus oculatus
970			Squirrel_Red-tailed	Sciurus granatensis
971			Squirrel_Richmond's	Sciurus richmondi
972			Squirrel_Southern flying	Glaucomys volans
973			Squirrel_Tassel-eared (Abert's)	Sciurus aberti
974			Squirrel_Texas Antelope	Ammospermophilus interpres
975			Squirrel_Tree (Genus Scuirus)	Scuirus (Genus)
976			Squirrel_Variagated	Sciurus variegatoides
977			Squirrel_Western Gray	Sciurus griseus
978			Squirrel_White-tailed Antelope	Ammospermophilus leucurus
979			Squirrel_Yucatan	Sciurus yucatanensis
980			Sugar Glider	Petaurus breviceps
981			Tick (Amblyomma americanum)	Amblyomma americanum
982			Tick (Amblyomma dubitatum)	Amblyomma dubitatum
983			Tick (Amblyomma imitator)	Amblyomma imitator
984			Tick (Amblyomma inornatum)	Amblyomma inornatum
985			Tick (Amblyomma interandinium)	Amblyomma interandinium
986			Tick (Amblyomma maculatum)	Amblyomma maculatum
987			Tick (Amblyomma ovale)	Amblyomma ovale
988			Tick (Amblyomma patinoi)	Amblyomma patinoi
989			Tick (Amblyomma sculptum)	Amblyomma sculptum
990			Tick (Amblyomma spp.)	Amblyomma spp.
991			Tick (Amblyomma tonelliae)	Amblyomma tonelliae
992			Tick (Amblyomma triste)	Amblyomma triste
993			Tick (Amblyomma tuberculatum)	Amblyomma tuberculatum
994			Tick (Amblyomma variegatum)	Amblyomma variegatum
995			Tick (Amblyomma mixtum)	Amblyomma mixtum
996			Tick (Dermacentor albipictus)	Dermacentor albipictus
997			Tick (Dermacentor andersoni)	Dermacentor andersoni
998			Tick (Dermacentor hunteri)	Dermacentor hunteri
999			Tick (Dermacentor marginatus)	Dermacentor marginatus
1000			Tick (Dermacentor nitens)	Dermacentor nitens
1001			Tick (Dermacentor occidentalis)	Dermacentor occidentalis
1002			Tick (Dermacentor parumapertus)	Dermacentor parumapertus
1003			Tick (Dermacentor reticulatus)	Dermacentor reticulatus
1004			Tick (Dermacentor spp.)	Dermacentor spp.
1005			Tick (Dermacentor variabilis)	Dermacentor variabilis
1006			Tick (Haemaphysalis spp.)	Haemaphysalis spp.
1007			Tick (Ixodes affinis)	Ixodes affinis
1008			Tick (Ixodes angustus)	Ixodes angustus
1009			Tick (Ixodes brunneus)	Ixodes brunneus

WA-KINGCO-20-0492-G-000148

	AQ	AR	AS	AT	AU	AV
964				Spermophilus richardsonii		
965				Spermophilus saturatus		
966				Spermophilus spilosoma		
967				Spermophilus tereticaudus		
968				Spermophilus townsendii		
969				Spermophilus tridecemlineatus		
970				Spermophilus undulatus		
971				Spermophilus variegatus		
972				Spermophilus washingtoni		
973				Spicata botticeps		
974				Spicata comis		
975				Spicata minidoka		
976				Spicata monticola		
977				Spicata moorei		
978				Spicata nuditenacula		
979				Spicata pacifica		
980				Spicata rara		
981				Spilogale (Genus)		
982				Spilogale angustifrons		
983				Spilogale gracilis		
984				Spilogale putorius		
985				Spilogale pygmaea		
986				Stenistomera alpina		
987				Stenistomera hubbardi		
988				Stenistomera macrodactyla		
989				Stenoponia americana		
990				Stenoponia ponera		
991				Sternopsylla distincta		
992				Sternopsylla distincta texana		
993				Strepsylla dalmati		
994				Strepsylla davisae		
995				Strepsylla fautini		
996				Strepsylla machadoi		
997				Strepsylla mina		
998				Strepsylla schmidtii		
999				Strepsylla taluna		
1000				Strepsylla villai		
1001				Subfamily Triatominae		
1002				Suborder Ixodides		
1003				Subphylum Crustacea		
1004				Suncus murinus		
1005				Suricata suricatta		
1006				Sus (Genus)		
1007				Sus scrofa		
1008				Sylvilagus (Genus)		
1009				Sylvilagus aquaticus		

	AM	AN	AO	AP
1010			Tick (<i>Ixodes cookei</i>)	<i>Ixodes cookei</i>
1011			Tick (<i>Ixodes dentatus</i>)	<i>Ixodes dentatus</i>
1012			Tick (<i>Ixodes kingi</i>)	<i>Ixodes kingi</i>
1013			Tick (<i>Ixodes marxi</i>)	<i>Ixodes marxi</i>
1014			Tick (<i>Ixodes muris</i>)	<i>Ixodes muris</i>
1015			Tick (<i>Ixodes ovatus</i>)	<i>Ixodes ovatus</i>
1016			Tick (<i>Ixodes pacificus</i>)	<i>Ixodes pacificus</i>
1017			Tick (<i>Ixodes persulcatus</i>)	<i>Ixodes persulcatus</i>
1018			Tick (<i>Ixodes ricinus</i>)	<i>Ixodes ricinus</i>
1019			Tick (<i>Ixodes scapularis</i>)	<i>Ixodes scapularis</i>
1020			Tick (<i>Ixodes sculptus</i>)	<i>Ixodes sculptus</i>
1021			Tick (<i>Ixodes</i> spp.)	<i>Ixodes</i> spp.
1022			Tick (<i>Rhipicephalus microplus</i>)	<i>Rhipicephalus microplus</i>
1023			Tick (<i>Rhipicephalus sanguineus</i>)	<i>Rhipicephalus sanguineus</i>
1024			Tick (<i>Rhipicephalus</i> spp.)	<i>Rhipicephalus</i> spp.
1025			Ticks (Suborder Ixodides)	Suborder Ixodides
1026			Tiger	<i>Panthera tigris</i>
1027			Tongueworm	<i>Linguatula</i> (Genus)
1028			Turkey (Generic name)	[Turkey]
1029			Turtle (Generic name)	[Turtle]
1030			Turtle_Slider, Red-eared	<i>Trachemys scripta</i> subsp <i>elegans</i>
1031			Turtle_Snapping, American	<i>Chelydra serpentina</i>
1032			Unknown	Unknown
1033			Unknown	Unknown
1034			Vole (Generic name)	[Vole]
1035			Vole (Genus <i>Microtus</i>)	<i>Microtus</i> (Genus)
1036			Vole, Red Tree	<i>Arborimus longicaudus</i>
1037			Vole_Bank	<i>Clethrionomys glariolus</i>
1038			Vole_Beach	<i>Microtus breweri</i>
1039			Vole_Coronation Island	<i>Microtus longicaudus</i> subsp <i>coronarius</i>
1040			Vole_Creeping	<i>Microtus oregoni</i>
1041			Vole_European water	<i>Arvicola terrestris</i>
1042			Vole_Gapper's Red-backed	<i>Clethrionomys gapperi</i> subsp <i>occidentalis</i>
1043			Vole_Guatemalan	<i>Microtus guatemalensis</i>
1044			Vole_Insular (St. Matthews Island)	<i>Microtus abbreviatus</i>
1045			Vole_Jalapan Pine	<i>Microtus quasiater</i>
1046			Vole_Long-tailed	<i>Microtus longicaudus</i>
1047			Vole_Meadow	<i>Microtus pennsylvanicus</i>
1048			Vole_Meadow mouse, California	<i>Microtus californicus</i>
1049			Vole_Mexican	<i>Microtus mexicanus</i>
1050			Vole_Montane	<i>Microtus montanus</i>
1051			Vole_Northern Red-backed	<i>Clethrionomys rutilus</i>
1052			Vole_Pine	<i>Microtus pinetorum</i>
1053			Vole_Prairie	<i>Microtus ochrogaster</i>
1054			Vole_Red-backed (Genus <i>Clethrionomys</i>)	<i>Clethrionomys</i> (Genus)
1055			Vole_Rock	<i>Microtus chrotorrhinus</i>
1056			Vole_Sagebrush	<i>Lemmiscus curtatus</i>

	AQ	AR	AS	AT	AU	AV
1010				Sylvilagus audubonii		
1011				Sylvilagus bachmani		
1012				Sylvilagus brasiliensis		
1013				Sylvilagus cunicularius		
1014				Sylvilagus floridanus		
1015				Sylvilagus graysoni		
1016				Sylvilagus insonus		
1017				Sylvilagus mansuetus		
1018				Sylvilagus nuttallii		
1019				Sylvilagus palustris		
1020				Sylvilagus transitionalis		
1021				Tadarida (Genus)		
1022				Tadarida brasiliensis		
1023				Talpidae (Family)		
1024				Tamias (Genus)		
1025				Tamias alpinus		
1026				Tamias amoenus		
1027				Tamias bulleri		
1028				Tamias cinereicollis		
1029				Tamias dorsalis		
1030				Tamias merriami		
1031				Tamias minimus		
1032				Tamias palmeri		
1033				Tamias panamintinus		
1034				Tamias quadrimaculatus		
1035				Tamias quadrivittatus		
1036				Tamias ruficaudus		
1037				Tamias rufus		
1038				Tamias senex		
1039				Tamias sonomae		
1040				Tamias speciosus		
1041				Tamias striatus		
1042				Tamias townsendii		
1043				Tamias umbrinus		
1044				Tamiasciurus douglasii		
1045				Tamiasciurus hudsonicus		
1046				Tarsopsylla octodecimdentata		
1047				Taurotragus (Genus)		
1048				Taxidea taxus		
1049				Thomasomys (Genus)		
1050				Thomomys (Genus)		
1051				Thomomys bottae		
1052				Thomomys bulbivorus		
1053				Thomomys monticola		
1054				Thomomys talpoides		
1055				Thomomys townsendii		
1056				Thomomys umbrinus		

	AM	AN	AO	AP
1057			Vole_Singing	Microtus miurus
1058			Vole_Southern Red-backed	Clethrionomys gapperi
1059			Vole_Townsend's	Microtus townsendii
1060			Vole_Tundra	Microtus oeconomus
1061			Vole_Water	Microtus richardsoni
1062			Vole_Western heather	Phenacomys intermedius
1063			Vole_White-footed	Arborimus albipes
1064			Vole_Yellow-cheeked	Microtus xanthognathus
1065			Vole_Zempoaltepec	Microtus umbrosus
1066			Wallaby (Generic name)	[Wallaby]
1067			Wallaby_Rock (Genus Petrogale)	Petrogale (Genus)
1068			Wallaroo	Macropus robustus
1069			Weasel (Genus Mustela)	Mustela (Genus)
1070			Weasel_Long-tailed	Mustela frenata
1071			Weasel_Short-tailed	Mustela erminea
1072			Weasel_Siberian	Mustela siberica
1073			Wildebeest (Genus Connochaetes)	Connochaetes (Genus)
1074			Wildebeest, Blue	Connochaetes taurinus
1075			Wolf_Gray	Canis lupus
1076			Wolf_Gray X Dog Hybrid	Canis lupus X Canis lupus familiaris hybrid
1077			Wolf_Red	Canis lupus subsp rufus
1078			Wolverine	Gulo gulo
1079			Wolverine_North American subspcies	Gulo gulo subsp luscus
1080			Woodchuck (Groundhog)	Marmota monax
1081			Woodrat (Packrat) (Genus Neotoma)	Neotoma (Genus)
1082			Woodrat_Allen's	Hodomys alleni
1083			Woodrat_Anthony's	Neotoma anthonyi
1084			Woodrat_Bolanos	Neotoma palatina
1085			Woodrat_Bryant's	Neotoma bryanti
1086			Woodrat_Bunker's	Neotoma bunkereri
1087			Woodrat_Bushy-tailed	Neotoma cinerea
1088			Woodrat_Desert	Neotoma lepida
1089			Woodrat_Dusky-footed	Neotoma fuscipes
1090			Woodrat_Eastern	Neotoma floridana
1091			Woodrat_Goldman's	Neotoma goldmani
1092			Woodrat_Mexican	Neotoma mexicana
1093			Woodrat_Nelson's	Neotoma nelsoni
1094			Woodrat_San Martin Island	Neotoma martinensis
1095			Woodrat_Sonoran	Neotoma phenax
1096			Woodrat_Southern Plains	Neotoma micropus
1097			Woodrat_Stephens'	Neotoma stephensi
1098			Woodrat_Tamaulipan	Neotoma augustapalata
1099			Woodrat_Turner Island	Neotoma varia
1100			Woodrat_White-throated	Neotoma albigula
1101			Zebra	Equus zebra
1102			Zebra_Burchell's (Plains)	Equus burchellii
1103			Zorilla	Ictonyx striatus

	AQ	AR	AS	AT	AU	AV
1057				Thrassis acamantis		
1058				Thrassis aridis		
1059				Thrassis arizonensis		
1060				Thrassis bacchi		
1061				Thrassis fatus		
1062				Thrassis francisi		
1063				Thrassis pandorae		
1064				Thrassis petiolatus		
1065				Thrassis sp. (Genus)		
1066				Thrassis spenceri		
1067				Thrassis stanfordi		
1068				Tiamastus cavicola		
1069				Trachemys scripta subsp elegans		
1070				Traubella neotomae		
1071				Trichoglossus haematodus moluccanus		
1072				Trichopsylloides oregonensis		
1073				Tunga monositus		
1074				Tunga penetrans		
1075				Uncia uncia		
1076				Unknown		
1077				Unknown		
1078				Urocyon cinereoargenteus		
1079				Urocyon littoralis		
1080				Ursus (Genus)		
1081				Ursus americanus		
1082				Ursus arctos		
1083				Ursus arctos subsp horribilis		
1084				Ursus maritimus		
1085				Vulpes (Genus)		
1086				Vulpes lagopus		
1087				Vulpes macrotis		
1088				Vulpes velox		
1089				Vulpes vulpes		
1090				Vulpes vulpes subsp fulvus		
1091				Vulpes zerda		
1092				Xenopsylla brasiliensis		
1093				Xenopsylla cheopis		
1094				Xenopsylla eridos		
1095				Xenopsylla philoxera		
1096				Xenopsylla phyllomae		
1097				Xenopsylla vexabilis		
1098				Zalophus californianus		
1099				Zapus hudsonius		
1100				Zapus princeps		
1101				Zapus trinotatus		
1102						
1103						

Disclaimer:

The Centers for Disease Control and Prevention (CDC), an agency of the Department of Health and Human Services, is authorized to collect this information, including the Social Security number (if applicable), under provisions of the Public Health Service Act, Section 301 (42 U.S.C. 241). Supplying the information is voluntary and there is no penalty for not providing it. The data will be used to increase understanding of disease patterns, develop prevention and control programs, and communicate new knowledge to the health community. Data will become part of CDC Privacy Act system 09-20-0106, "Specimen Handling for Testing and Related Data" and may be disclosed: to appropriate State or local public health departments and cooperating medical authorities to deal with conditions of public health significance; to private contractors assisting CDC in analyzing and refining records; to researchers under certain limited circumstances to conduct further investigations; to organizations to carry out audits and reviews on behalf of HHS; to the Department of Justice in the event of litigation, and to a congressional office assisting individuals in obtaining their records. An accounting of the disclosures that have been made by CDC will be made available to the subject individual upon request. Except for permissible disclosures expressly authorized by the Privacy Act, no other disclosure may be made without the subject individual's written consent.

Please refer to the CDC Infectious Diseases Laboratories Test Directory for information on specimen requirements. CDC must maintain and document specific acceptance criteria to perform laboratory tests on samples obtained from humans pursuant to the Clinical Laboratory Improvement Amendments of 1988 (CLIA) and accompanying regulations. 42 U.S.C. § 263a; 42 C.F.R. § 493.1241.

Samples transferred to the CDC for testing or any other purpose will become the legal property of the agency unless otherwise agreed upon in writing. Samples will not be returned to the submitting entity.

	A	B	C	D	E	F	G
					☐ Short List	☐ Short List	
1	Package ID	CSID	CUID	Origin (This field is required)	Test Order Name	Suspected Agent	Date Sent to CDC
2	CENTRALRECEIVING	CENTRALRECEIVING	SAMPLECONTAINER	CENTRALRECEIVING	CENTRALRECEIVING.METADATA_REPOSITORY	CENTRALRECEIVING.METADATA	CENTRALRECEIVING.CENTRAL
3				Human	Respiratory Virus (Non-Influenza) Special Study		

	H	J	K	L	M	N	O	P
1	At CDC, bring to the attention of:	CDC Local Patient ID	Patient name, Last	Patient name, First	Patient name, Middle Initial	Patient name, Suffix	Patient Birthdate	Patient Age
2	CENTRALRECEIVING.N	PATIENTS_DEPTID.PA	CENTRALRECEIVING.CEN	CENTRALRECEIVING.CEN	CENTRALRECEIVING	CENTRALRECEIV	CENTRALRECEIVIN	CENTRALREC
3								

	Q	R	S	T	U	V	W	X	Y	Z
				☐ Short List						☐ Short List
1	Age units	Patient Sex	Pregnant	Clinical Diagnosis	Date of onset	Fatal	Date of Death	Specimen collected date	Specimen collected time	Material submitted
2	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING
3										

	AA	AB	AC	AD	AE	AF
	☐ Short List	☐ Short List	☐ Short List	☐ Short List	☐ Short List	☐ Short List
1	Specimen source (Type)	Specimen source site	Specimen source site modifier	Collection method	Treatment of specimen	
2	ORDERS.METADATA_REPOS	CENTRALRECEIVING.ME	CENTRALRECEIVING.METADATA	CENTRALRECEIVING	ORDERS.METADATA_REPO	
3						

	AG	AH	AI	AJ	AK
	Short List				
1	Transport medium/Specimen preservative	Specimen handling	SPHL Submitter ID	SPHL Submitter Institution Name	SPHL Contact ID
2	ORDERS.METADATA_REPOSITORY.FIELD_VARC	ORDERS.METADATA_	CENTRALRECEIVIN	SPHL.DUMMY.DUMMY.	VING.CENTRALRECEIVI
3					

	AL	AM	AN	AO	AP	AQ	AR
1	SPHL Submitter Point of Contact Name, Prefix	SPHL Submitter Point of Contact Name, Last	SPHL Submitter Point of Contact Name, First	SPHL Submitter Point of Contact Name, Middle Initial	SPHL Submitter Point of Contact Name, Suffix	SPHL Submitter Point of Contact Name, Degree	SPHL Submitter Point of Contact Phone, Country Code
2	SPHL-POC.RASCLIENT	SPHL-POC.RASCLIENTCON	SPHL-POC.RASCLIENTCON	SPHL-POC.RASCLIENTCONT	SPHL-POC.RASCL	SPHL-POC.RASCLIENTC	SPHL-POC.RASCLIENTC
3							

	AS	AT	AU	AV	AW	AX	AY	AZ
1	SPHL Submitter Point of Contact Phone, Area Code	SPHL Submitter Point of Contact Phone, Local Number	SPHL Submitter Point of Contact Phone, Extension	SPHL Submitter Point of Contact Email	SPHL Submitter Patient ID	SPHL Submitter Alternative Patient ID	SPHL Submitter Specimen ID	SPHL Submitter Alternative Specimen ID
2	SPHL-POC.RASCLIENTC	SPHL-POC.RASCLIENTC	SPHL-POC.RASCLIENTC	SPHL-POC.RASCLIENTC	CENTRALRECE	CENTRALRECEIVIN	CENTRALRECEIV	CENTRALRECEIVING.
3								

	BA	BB	BC	BD	BE	BF	BG	BH
	☐ Private List							
1	Original Submitter ID	Original Submitter Lab Director or Designee Name, Prefix	Original Submitter Lab Director or Designee Name, Last	Original Submitter Lab Director or Designee Name, First	Original Submitter Lab Director or Designee Name, Middle Initial	Original Submitter Lab Director or Designee Name, Suffix	Original Submitter Lab Director or Designee Name, Degree	Original Submitter Institution Name
2	CENTRALRECEIVING.CE	ORIG-DES.RASCLIEN'	ORIG-DES.RASCLIEN'	ORIG-DES.RASCLIEN'	ORIG-DES.RASCLIEN'	ORIG-DES.RASCLIEN'	ORIG-DES.RASCLIEN'	ORIG.RASCLIEN'
3								

	BI	BJ	BK	BL	BM	BN	BO	BP
1	Original Submitter Address, Street Address Line 1	Original Submitter Address, Street Address Line 2	Original Submitter Address, City	Original Submitter Address, Zip/Postal Code	Original Submitter Address, State	Original Submitter Address, Country	Original Submitter Fax, Country Code	Original Submitter Fax, Area Code
2	ORIG.RASCLIENTS.	ORIG.RASCLIENTS.	ORIG.RASCLIENTS.	ORIG.RASCLIENTS.ZIP	ORIG.RASCLIENTS.	ORIG.RASCLIENTS.C	ORIG.RASCLIENTS.FAXC	ORIG.RASCLIENTS.FAXAR
3								

	BQ	BR	BS	BT	BU	BV	BW
1	Original Submitter Fax, Local Number	Original Submitter Email	Original Submitter Contact ID	Original Submitter Point of Contact Name, Prefix	Original Submitter Point of Contact Name, Last	Original Submitter Point of Contact Name, First	Original Submitter Point of Contact Name, Middle Initial
2	ORIG.RASCLIENTS.FAXLOCAL	ORIG.RASCLIENTS.EMAIL	ORIG.RASCLIENTS.ID	ORIG-POC.RASCLIENTPREFIX	ORIG-POC.RASCLIENTLAST	ORIG-POC.RASCLIENTFIRST	ORIG-POC.RASCLIENTMID
3							

	BX	BY	BZ	CA	CB	CC
1	Original Submitter Point of Contact Name, Suffix	Original Submitter Point of Contact Name, Degree	Original Submitter Point of Contact Phone, Country Code	Original Submitter Point of Contact Phone, Area Code	Original Submitter Point of Contact Phone, Local Number	Original Submitter Point of Contact Phone, Extension
2	ORIG-POC.RASCLIEN	ORIG-POC.RASCLIEN	ORIG-POC.RASCLIEN	ORIG-POC.RASCLIEN	ORIG-POC.RASCLIEN	ORIG-POC.RASCLIEN
3						

	CD	CE	CF	CG	CH	CI	CJ	CK
						☐ Private List		
1	Original Submitter Point of Contact Email	Original Submitter Patient ID	Original Submitter Alternative Patient ID	Original Submitter Specimen ID	Original Submitter Alternative Specimen ID	Intermediate Submitter ID	Intermediate Submitter Lab Director or Designee Name, Prefix	Intermediate Submitter Lab Director or Designee Name, Last
2	ORIG-POC.RASCLIENTC	CENTRALRECE	CENTRALRECEIVIN	CENTRALRECEIV	CENTRALRECEIVING	CENTRALRECEIVING.CE	INTER-DES.RASCLIENT	INTER-DES.RASCLIENTC
3								

	CL	CM	CN	CO	CP	CQ	CR	CS	CT
1	Intermediate Submitter Lab Director or Designee Name, First	Intermediate Submitter Lab Director or Designee Name, Middle Initial	Intermediate Submitter Lab Director or Designee Name, Suffix	Intermediate Submitter Lab Director or Designee Name, Degree	Intermediate Submitter Address, Street Address Line 1	Intermediate Submitter Address, Street Address Line 2	Intermediate Submitter Address, City	Intermediate Submitter Address, Zip/Postal Code	
2	INTER-DES.RASCLIENTC	INTER-DES.RASCLIENTC	INTER-DES.RASCLIENTC	INTER-DES.RASCLIENTC	INTER.RASCLIENT	INTER.RASCLIENT	INTER.RASCLIE	INTER.RASCLIENT	
3									

	CU	CV	CW	CX	CY	CZ
1	Intermediate Submitter Address, State	Intermediate Submitter Address, Country	Intermediate Submitter Fax, Country Code	Intermediate Submitter Fax, Area Code	Intermediate Submitter Fax, Local Number	Intermediate Submitter Email
2	INTER.RASCLIENTS.STA	INTER.RASCLIENTS.C	INTER.RASCLIENTS.FAXCOU	INTER.RASCLIENTS.FAXAR	INTER.RASCLIENTS.FAXLOCAL	INTER.RASCLIENT
3						

	DA	DB	DC	DD	DE	DF
1	Intermediate Submitter Contact ID	Intermediate Submitter Point of Contact Name, Prefix	Intermediate Submitter Point of Contact Name, Last	Intermediate Submitter Point of Contact Name, First	Intermediate Submitter Point of Contact Name, Middle Initial	Intermediate Submitter Point of Contact Name, Suffix
2	ING.CENTRALRECEIVING	INTER-POC.RASCLIENTCON	INTER-POC.RASCLIENTCON	INTER-POC.RASCLIENTCON	INTER-POC.RASCLIENTCONT	INTER-POC.RASCLIENTC
3						

	DG	DH	DI	DJ	DK	DL
1	Intermediate Submitter Point of Contact Name, Degree	Intermediate Submitter Point of Contact Phone, Country Code	Intermediate Submitter Point of Contact Phone, Area Code	Intermediate Submitter Point of Contact Phone, Local Number	Intermediate Submitter Point of Contact Phone, Extension	Intermediate Submitter Point of Contact Email
2	INTER-POC.RASCLIENTCC	INTER-POC.RASCLIENTCON	INTER-POC.RASCLIENTCONT	INTER-POC.RASCLIENTCONTACT	INTER-POC.RASCLIENTCONT	INTER-POC.RASCLIENTCC
3						

	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV
1	Intermediate Submitter Patient ID	Intermediate Submitter Alternative Patient ID	Intermediate Submitter Specimen ID	Intermediate Submitter Alternative Specimen ID	Brief Clinical Summary	State of Illness, Symptomatic	State of Illness, Asymptomatic	State of Illness, Acute	State of Illness, Chronic	State of Illness, Convalescent
2	CENTRALRECEI	CENTRALRECEIVING	CENTRALRECEIV	CENTRALRECEIVING.	CENTRALRECEIVI	CENTRALRECEB	CENTRALRECE	CENTRALRI	CENTRALR	CENTRALRECI
3										

	DW	DX	DY	DZ	EA	EB	EC	ED
1	State of Illness, Recovered	Type of Infection, Upper respiratory	Type of Infection, Lower respiratory	Type of Infection, Cardiovascular	Type of Infection, Gastrointestinal	Type of Infection, Genital	Type of Infection, Urinary tract	Type of Infection, Sepsis
2	CENTRALRE	CENTRALRECEIVING.METAI	CENTRALRECEIVING.M	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVIN	CENTRALRECEIVIN	CENTRALRECEIVIN
3								

	EE	EF	EG	EH	EI	EJ	EK	EL
								☐ Short List
1	Type of Infection, Central nervous system	Type of Infection, Skin/soft tissue	Type of Infection, Joint/bone	Type of Infection, Disseminated	Type of Infection, Other	Type of Infection, Other (specify)	Therapeutic Agent(s) During Illness, Agent 1	
2	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	CENTRALRECEIVING	
3								

	EM	EN	EO	EP	EQ	ER	ES	ET
			☐ Short List			☐ Short List		
1	Therapeutic Agent(s) During Illness, Agent 1 Start Date		Therapeutic Agent(s) During Illness, Agent 2	Therapeutic Agent(s) During Illness, Agent 2 Start Date	Therapeutic Agent(s) During Illness, Agent 2 End Date	Therapeutic Agent(s) During Illness, Agent 3	Therapeutic Agent(s) During Illness, Agent 3 Start Date	Therapeutic Agent(s) During Illness, Agent 3 End Date
2	CENTRALRECEIVING.		CENTRALRECEIVING.MET	CENTRALRECEIVING.	CENTRALRECEIVING.	CENTRALRECEIVING.MET	CENTRALRECEIVING.	CENTRALRECEIVING
3								

	EU	EV	EW	EX	EY	EZ	FA	FB	FC	FD
1	Extent, Isolated Case	Extent, Carrier	Extent, Contact	Extent, Outbreak	Extent, Outbreak Text	Extent, Family	Extent, Community	Extent, Healthcare-associated	Extent, Epidemic	Travel
2	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECEI	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECEIVIN	CENTRALRECE
3										

	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN	FO
1	Travel, Start Date	Travel, End Date	Travel: Foreign (Countries) 1	Travel: Foreign (Countries) 2	Travel: Foreign (Countries) 3	Foreign Residence (Country)	Travel: United States (States) 1	Travel: United States (States) 2	Travel: United States (States) 3	United States Residence (State)	Exposure
2	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECE
3											

	FP	FQ	FR	FS	FT	FU	FV	FW
				☐ Short List	☐ Short List			☐ Short List
1	Date of Exposure	Animal Exposure	Animal Type of Exposure	Animal Common Name	Animal Scientific Name	Arthropod Exposure	Arthropod Type of Exposure	Arthropod Common Name
2	CENTRALRECE	CENTRALRECE	CENTRALRECE	CENTRALRECEIVING.METADAT	CENTRALRECEIVING.METADATA_REP	CENTRALRECE	CENTRALREC	CENTRALRECEIVING.MET
3								

	FX	FY	FZ	GA	GB	GC	GD	GE	GF
	☐ Short List	☐ Short List		☐ Short List		☐ Short List		☐ Short List	
1	Arthropod Scientific Name	Immunization 1	Immunization 1, Date Received	Immunization 2	Immunization 2, Date Received	Immunization 3	Immunization 3, Date Received	Immunization 4	Immunization 4, Date Received
2	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME
3									

	GG	GH	GI	GJ	GK	GL	GM	GN
1	Previous Laboratory Results	Comments	Delivered to Unit #	Date received at CDC	Specimen Received at STAT Date (STAT only)	Condition, Outer Package, STAT Laboratory (STAT only)	Condition, Specimen, STAT Laboratory (STAT only)	
2	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	ORDERS.METADATA_REF	PACKAGES.PACKAGES.DA	CENTRALRECEIVING.CEN	CENTRALRECEIVING	CENTRALRECEIVING.M	
3								

	GO	GP	GQ	GR	GS	GT	GU
							☐ Short List
1	CDC Local Aliquot ID	Specimen Received in Lab Date (Unit only)	Condition, Outer Package, Testing Laboratory (Unit only)	Condition, Specimen container, Testing Laboratory (Unit only)	Condition, Specimen, Testing Laboratory (Unit only)	Additional ID 1	Additional Type 1
2	SAMPLECONTAINERS_DE	CENTRALRECEIVING	ORDERS.METADATA_RE	SAMPLECONTAINERS.MET	ORDERS.METADATA_RIC	CENTRALRECEIV	CENTRALRECEIVIN
3							

	GV	GW	GX	GY	GZ	HA	HB	HC
		☐ Short List						
1	Additional ID 2	Additional Type 2	Suspected Agent Category		Date 01	Date 02	Numeric 01	Numeric 02
2	CENTRALRECEIV	CENTRALRECEIVING	CENTRALRECEIVING.MET	CENTRALRECEIVING.MET	CENTRALRECEIVING.MET	CENTRALRECEIVING.MET	CENTRALRECEIVING.MET	CENTRALRECEIVING.MET
3								

	HD	HE	HF	HG	HH	HI	HJ
1	Decimal 01	Alpha Numeric 01	Alpha Numeric 02	Alpha Numeric 03	Alpha Numeric 04	Alpha Numeric 05	Volume
2	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	CENTRALRECEIVING.ME	SAMPLECONTA
3							

	HK	HL	HM	HN	HO	HP	HQ	HR
			Help On Storage Fields					
1	Unit of Measure	Container Type	Storage Locations - Location	Storage Locations - Building	Storage Locations - Room	Storage Locations - Storage Unit	Storage Locations - Shelf	Storage Locations - Rack
2	SAMPLECONTAS	SAMPLECONTAINERS.S	STORAGELOCATION.STORAGELOC	STORAGELOCATIC	STORAGELOCATION.S	STORAGELOCA	STORAGELOCA	STORAGELOCA
3								

	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB	IC
						Help Using Event					
1	Storage Locations - Box	Storage Locations - Absolute Position	Storage Locations - Custodian (User ID)		CDC EVENT ID	Event Name (Only displays for 1 event ID)	CDC CASE ID	Date Subsample Received in Lab	Subsample Comment	Date Aliquot Received in Lab	Aliquot Comment
2	STORAGELOCA	STORAGELOCA	STORAGELOCA	EVENTS_ACCE	EVENTS_ACCESSIONS.DUM	CASE_ACCESSIO	ORDERS.META	ORDERS.META	SAMPLECONTA	SAMPLECONTA	
3											

	A	B	C
1	Origin	Lab Examination Requested	Specific agent
2	ORIGIN	TEST_ORDER_NAME	SPECIFIC_AGENT
3	G001	A282	A160
4	Human	Acanthamoeba Molecular Detection	Abiotrophia adiacens
5	Animal	Adenovirus Molecular Detection and Typing	Abiotrophia defectiva
6	Food	Aerobic Actinomycetes - Identification	Abiotrophia species
7	Environmental	Aerobic Actinomycetes - Identification and Antimicrobial Susceptibility Testing	Acanthamoeba species
8	Medical Device	Alkhurma Hemorrhagic Fever Serology and Molecular Detection	Achromobacter species
9	Biologic	Ameba Identification (Acanthamoeba, Balamuthia, Naegleria)	Acidovorax species
10		Ameba Serology (Acanthamoeba, Balamuthia, Naegleria)	Acinetobacter baumannii
11		Ameba Special Study	Acinetobacter calcoaceticus
12		Anaerobic Bacteria Identification	Acinetobacter calcoaceticus-Acinetobacter baumannii complex
13		Anaplasma Molecular Detection	Acinetobacter haemolyticus
14		Anaplasma Serology	Acinetobacter lwoffii
15		Anaplasma Special Study	Acinetobacter species
16		Angiostrongylus cantonensis Molecular Detection	Acremonium species
17		Antimicrobial Resistant Bacteria - Colonization Screening	Actinobacillus species
18		Antimicrobial Susceptibility Testing (AST) - Bacteria	Actinobaculum species
19		Arbovirus Isolation and Identification	Actinomadura nitritigenes
20		Arbovirus Molecular Detection	Actinomadura species
21		Arbovirus Neutralization Antibody	Actinomyces catuli
22		Arbovirus Serology	Actinomyces dentocariosus
23		Arbovirus Special Study	Actinomyces species
24		Arenavirus (New World) Testing	Actinomycetes (Subclass)
25		Arenavirus (Old World) Testing	Adenovirus
26		Atypical Bacterial Pneumonia Agents (Chlamydia pneumoniae, Mycoplasma pneumoniae)	Aerobic actinomycetes
27		Babesia Molecular Detection	Aerococcus urinae
28		Babesiosis Serology	Aerococcus viridans
29		Bacillus anthracis Detection in Clinical Specimens	Aeromonas hydrophila
30		Bacillus anthracis Genotyping and AST	Aeromonas punctata
31		Bacillus anthracis Serology	Aeromonas species
32		Bacillus anthracis Study	Aeromonas trota
33		Bacillus cereus Detection - Foodborne Outbreak	Aggregatibacter actinomycetemcomitans
34		Bacillus cereus Genotyping	Aggregatibacter segnis
35		Bacillus species Identification (Not B. anthracis)	Agrobacterium species
36		Bacterial Identification from Clinical Specimens (16S rRNA Polymerase Chain Reaction)	Alcaligenes species
37		Bacterial Identification of Unknown Isolate (Not Strict Anaerobe)	Alloiococcus otitis
38		Balamuthia Molecular Detection	Alternaria species
39		Bartonella henselae/B. quintana Indirect Fluorescent Antibody (IFA) test	Amycolatopsis species
40		Bartonella Special Study	Anaerobe
41		Baylisascariasis Serology	Anaerobic Gram positive coccobacillus
42		Biodefense R&D Study	Anaerobic Gram-negative bacillus
43		Bio-Rad avidity-based incidence (BRAI) assay	Anaerobic Gram-negative coccobacillus
44		Biothreat Event	Anaerobic Gram-negative coccus
45		Blood Disorders Coagulation Study	Anaerobic Gram-positive bacillus
46		Bordetella pertussis and Related Species Detection and Identification	Anaerobic Gram-positive coccus
47		Bordetella pertussis Serology	Anaerobic non-sporing Gram-positive bacillus

WORKING COPY - 20-0492-G-000185

	D	E	F	G	H	I	J
1	Age type	Sex - Human	Sex - Animal	Clinical diagnosis	Prefix	Suffix	Material submitted (Submitted as)
2	AGE_TYPE	SEX	SEX	DIAGNOSIS	Multiple	Multiple	SUBMITTED_AS
3	B03W	A278	A278	A279	X120	X121	G002
4	Year	Female	Female	Abdominal pain	Dr	Jr	Bacteria
5	Month	Male	Male	Actinomycosis	Mr	Sr	Concentrate
6	Week	Ambiguous	Multiple genders	Acute bacterial endocarditis	Mrs	II	Data_Sequence
7	Day	Not applicable	Neutered female	Acute hemorrhagic conjunctivitis	Ms	III	DNA-Deoxyribonucleic acid
8	Hour	Other	Neutered male	Acute hemorrhagic cystitis		IV	Grid (Electron Microscopy)
9	Minute	Unknown	Not applicable	Adiaspiromycosis		V	Image
10	Second			African Tick Bite Fever		VI	Isolate
11	Unknown			African trypanosomiasis			Original material
12	Gestational-Month			AIDS			Plasmid
13	Gestational-Week			Amebiasis			Protein
14				Anaplasmosis			RNA-Ribonucleic acid
15				Anthrax			Slide
16				Aplastic anemia			TC Supernatant
17				Arthropathy			TNA-Nucleic acid (Total)
18				Ascariasis			
19				Aseptic meningitis			
20				Aspergillosis			
21				Asthma			
22				Asymptomatic			
23				Atypical pneumonia			
24				Babesiosis			
25				Bacteremia			
26				Basidiobolomycosis			
27				Blastomycosis			
28				Bloody Diarrhea			
29				Botulism			
30				Botulism toxoid recipient			
31				Brain lesion			
32				Bronchiolitis			
33				Bronchiolitis obliterans			
34				Bronchitis			
35				Brucellosis			
36				Campylobacteriosis			
37				Cancer			
38				Candidemia			
39				Candidiasis			
40				Cat-Scratch fever			
41				Central nervous system disease			
42				Cerebral hemorrhage			
43				Chagas disease			
44				Chancroid			
45				Cholera			
46				Chromoblastomycosis			
47				Chronic infectious disease			

	K	L	M	N
1	Specimen type - All	Specimen type - Human and Animal	Specimen type - FEMB	Serology information
2	CLASS_NAME	CLASS_NAME	CLASS_NAME	Specimen type modifier
3	X107			SPECIMEN_TAKEN_AT
4	Abscess	Abscess	Aerator	X111
5	Aerator	Arthropod	Aerosol	Acute
6	Aerosol	Aspirate	Air (environmental sample)	Aneurysm
7	Air (environmental sample)	Bile	Bedding_Animal	Baseline
8	Arthropod	Biopsy specimen	Bedding_Animal, Wood shavings	Bloody
9	Aspirate	Blood	Blood product	Boil (Furuncle)
10	Bedding_Animal	Blood clot specimen	Building Product	Branchial cleft
11	Bedding_Animal, Wood shavings	Blood_whole	Burrow swab	Calcification_Pathologic
12	Bile	Bone marrow	Catheter	Control
13	Biopsy specimen	Bone specimen	Cell line	Convalescent
14	Blood	Brain	Central line	Mycotic aneurysm
15	Blood clot specimen	Brain biopsy	Chili	Necrotic debris
16	Blood product	Breast Milk	Commercial Products (usually drugs)	Pseudomembrane
17	Blood_whole	Bronchial washings	Condiment	Purpura
18	Bone marrow	Buccal swab	Condiment_Salsa	Rash
19	Bone specimen	Buffy coat	Contraceptive devices	s1
20	Brain	Bullae	Dairy	S10
21	Brain biopsy	Capillary blood specimen	Dairy_Butter	s2
22	Breast Milk	Carcass specimen	Dairy_Cheese	s3
23	Bronchial washings	CD4- leukocytes	Dairy_Ice cream	s4
24	Buccal swab	CD4+ lymphocytes	Dairy_Milk	s5
25	Buffy coat	Cell line	Dairy_Yogurt	s6
26	Building Product	Colonic polyp sample	DNA-Deoxyribonucleic acid	S7
27	Bullae	Contraceptive devices	Dust	S8
28	Burrow swab	Corneal impression	Dust_wood	S9
29	Capillary blood specimen	Crust	Egg	Seroma
30	Carcass specimen	Cyto-Chex	Endoscope	Unknown
31	Catheter	Cytologic material	Environmental swab	
32	CD4- leukocytes	Dialysate	Faucet component	
33	CD4+ lymphocytes	DNA-Deoxyribonucleic acid	Feed, Animal	
34	Cell line	Dried blood spot (DBS)	Feed_Avian	
35	Central line	Dried plasma spot	Filter	
36	Chili	Dried tube specimen (DTS)	Food	
37	Colonic polyp sample	Egg	Foreign object (body)	
38	Commercial Products (usually drugs)	Endoscope	Formula, Infant	
39	Condiment	Eschar	Formula, Infant_ Liquid	
40	Condiment_Salsa	Eschar swab	Formula, Infant_Powdered	
41	Contraceptive devices	Esophageal brushings sample	Formula, Infant_Soy	
42	Corneal impression	Exhaled breath condensate	Fruit, Papaya	
43	Crust	Exudate	Grain	
44	Cyto-Chex	Eye (Lacrimal) secretions	Grain, Bread	
45	Cytologic material	Eye swab	Grain, Cereal	
46	Dairy	Fistula	Grain, Rice	
47	Dairy_Butter	Flea	HEPA-sock	

WA KINGCO 20-0492-G-000187

	O	P	Q
1	Anatomic site	Anatomic site modifier	Collection method - All
2	SPECIMEN_SITE	ANATOM_SITE_MOD	COLLECTION_PROC
3	X100	X101	B1W9
4	Abdomen	Anterior	Abdominal hysterectomy
5	Abdominal cavity	Apical	Aptima™ Collection Kit
6	Abdominal wall	Axillary	Aspiration
7	Achilles tendon	Basal	Autopsy examination
8	Acromioclavicular joint	Bilateral (Right and left)	Biopsy
9	Adenoid	Central	Biopsy_brush
10	Amniotic sac	Deep	Biopsy_Fine needle
11	Amputation stump	Distal	Biopsy_Punch
12	Anal region	Dorsal	Biopsy_Punch, Skin
13	Ankle	Exterior	Biopsy_Shave
14	Anterior chamber of eye	Fragmented	Biopsy_skin
15	Anterior descending branch of left coronary artery	Great	Blood collection
16	Anterior longitudinal ligament	Inferior	Bronchial washing
17	Anterior stomach wall	Interior	Bronchoalveolar lavage
18	Anterior tibial muscle tendon	Left	Bronchoscopy
19	Aorta	Left anterior	Carbon dioxide (dry ice) trap
20	Aortic valve	Left dorsal	Catch-All™
21	Aortic valve leaflet	Left frontal	Catheterization
22	Appendix	Left inner	Cesarean section
23	Appendix epiploica	Left lateral	Clipping nails of patient
24	Arm	Left lower	Colonoscopy
25	Arm_Forearm	Left medial	Colonoscopy and biopsy of colon
26	Arm_Upper	Left outer	Composite
27	Axilla	Left posterior	Corneal transplant
28	Axilla and Groin	Left upper	Debridement
29	Back	Left ventral	Endoscopy
30	Basal ganglion	Lower	Enema
31	Bile duct	Mesenteric	Environmental
32	Bladder	Mid left dorsal	Finger-prick (stick)
33	Bone	Mid left ventral	Grab-sample
34	Bone_Acetabulum	Mid right dorsal	Irrigation
35	Bone_Clavicle	Mid right ventral	Knee arthroplasty (replacement)
36	Bone_Coccyx	Middle	Lavage
37	Bone_Ethmoid process	Peripheral	Lavage_cervical
38	Bone_Femur	Posterior	Magnetic resonance imaging
39	Bone_Mandible	Proximal	PAP smear preparation
40	Bone_Mastoid	Right	Resection (Excision)
41	Bone_Metacarpal	Right anterior	Resection (Excision)_Partial
42	Bone_Metatarsal	Right dorsal	Right hemicolectomy
43	Bone_Rib	Right frontal	Rinse
44	Bone_Sacrum	Right inner	Scraping
45	Bone_Scapula	Right lateral	Slide
46	Bone_sphenoid	Right lower	Sternotomy
47	Bone_Sternum	Right medial	Swab

	R	S
1	Collection method - Human and Animal	Collection method - FEMB
2	COLLECTION_PROC	COLLECTION_PROC
3	B1W9	B1W9
4	Abdominal hysterectomy	Aptima™ Collection Kit
5	Aptima™ Collection Kit	Aspiration
6	Aspiration	Autopsy examination
7	Autopsy examination	Carbon dioxide (dry ice) trap
8	Biopsy	Composite
9	Biopsy_brush	Environmental
10	Biopsy_Fine needle	Grab-sample
11	Biopsy_Punch	Irrigation
12	Biopsy_Punch, Skin	Rinse
13	Biopsy_Shave	Scraping
14	Biopsy_skin	Swab
15	Blood collection	Tick drag/flag
16	Bronchial washing	Unknown
17	Bronchoalveolar lavage	Vacuum
18	Bronchoscopy	WECK-CEL
19	Catch-All™	Wipe
20	Catheterization	
21	Cesarean section	
22	Clipping nails of patient	
23	Colonoscopy	
24	Colonoscopy and biopsy of colon	
25	Composite	
26	Corneal transplant	
27	Debridement	
28	Endoscopy	
29	Enema	
30	Finger-prick (stick)	
31	Irrigation	
32	Knee arthroplasty (replacement)	
33	Lavage	
34	Lavage_cervical	
35	Magnetic resonance imaging	
36	PAP smear preparation	
37	Resection (Excision)	
38	Resection (Excision)_Partial	
39	Right hemicolectomy	
40	Rinse	
41	Scraping	
42	Slide	
43	Sternotomy	
44	Swab	
45	TearFlo strip	
46	Thoracentesis	
47	Tick drag/flag	

	T	U	V
1	Transport medium/Additive	Processing	Specimen Handling
2	SUBMITTED_ON	PROCESSING	SPECIMEN_HANDLING
3	A291	X105	X122
4	Acid Citrate Dextrose (ACD)	Centrifugation	Ambient temperature
5	Amies Charcoal Transport medium	Concentration	Cold (Ice Pack)
6	Amies Transport Medium	Culture	Freeze dried (Lyophilized)
7	Aptima specimen transport medium	Decontamination	Frozen (Dry Ice)
8	BacT/ALERT Broth	Dilution	Silica Gel pack
9	BacT/ALERT MP	DNA extraction	
10	Blood agar_Horse	Elution	
11	Blood agar_Rabbit	Enrichment	
12	Blood agar_Sheep	Filtration_bagmediated	
13	Bold's Basal (BB) Medium	Filtration_cafe	
14	Bordet Gengou agar	Formalin-Fixation	
15	Brain-Heart Infusion agar (BHIA)	Homogenization	
16	Brain-Heart Infusion broth (BHIB)	Lyophilization	
17	Brilliant Green (BG) Agar	Lysate	
18	Bromo Thymol Blue (BTB) Lactose Agar	Membrane Filtration	
19	Buffered Charcoal Yeast Extract (BCYE) Agar	Methanol	
20	Buffered Glycerol Saline (BGS)	Neutralization	
21	Buffered salt solution (BSS)	Nucleic_acid_extraction	
22	Campy CVA agar	Paraffin embedding	
23	Campy-BAP agar	RNA extraction	
24	Campy-Thio broth	Stain_DFA	
25	Cary-Blair Transport Medium	Stain_H&E	
26	Chloroform	Staining method	
27	Chocolate agar	TNA extraction	
28	Chopped Meat Glucose Broth with Vitamin K and Hemin	Two-phase	
29	Citrate, theophylline, adenosine, dipyridamole (CTAD)	Ultrafilter Backflush	
30	Cooked (Chopped) Meat agar	Ultrafiltration	
31	Cooked (Chopped) Meat broth	Unknown	
32	Dextrose starch agar		
33	Ecofix, Unifix, Protifix, or Totalfix		
34	Egg_Embryonated Chicken		
35	Enteric Plus medium		
36	Enteric Transport Medium (ETM)		
37	Ethanol (70%)		
38	Ethylenediaminetetraacetic acid (EDTA)		
39	Formalin		
40	Formalin (10%)_Physiological saline solution		
41	Formalin_Buffered Neutral (10%)		
42	FTA card		
43	Fusobacterium egg yolk agar		
44	Glycerol (20%) - Trypicase Soy broth		
45	Glycerol saline solution		
46	Gram Negative Broth (GN)		
47	Heart Infusion Agar (HIA)		

	W	X	Y	Z
1	State, USA Travel (1) (2) (3), USA residence	Country, Foreign Travel (1) (2) (3), Foreign residence	Treatments (1) (2) (3)	Yes/No/Unknown
2	Multiple	Multiple	Multiple	Multiple
3	B02T	B02P	B026	X113
4	Alabama	United States	Acyclovir	Yes
5	Alaska	Afghanistan	Amantadine	No
6	American Samoa	Aland Islands	Amikacin	Unknown
7	Arizona	Albania	Amoxicillin	
8	Arkansas	Algeria	Amoxicillin+Clavulanic Acid	
9	Baker Island	American Samoa	Amphotericin	
10	California	Andorra	Ampicillin	
11	Colorado	Angola	Ampicillin+sulbactam	
12	Connecticut	Anguilla	Antibiotic	
13	Delaware	Antarctica	Azithromycin	
14	District of Columbia	Antigua and Barbuda	Azlocillin	
15	Federated States of Micronesia	Argentina	Bacitracin	
16	Florida	Armenia	Benzylpenicillin (penicillin G)	
17	Georgia	Aruba	Botulinum antitoxin	
18	Guam	Australia	Cadmium	
19	Hawaii	Austria	Capreomycin	
20	Howland Island	Azerbaijan	Carbenicillin	
21	Idaho	Bahamas	Cefaclor	
22	Illinois	Bahrain	Cefaloridine	
23	Indiana	Bangladesh	Cefamandole	
24	Iowa	Barbados	Cefatrizine	
25	Jarvis Island	Belarus	Cefixime	
26	Johnston Atoll	Belgium	Cefonicid	
27	Kansas	Belize	Cefoperazone	
28	Kentucky	Benin	Ceforanide	
29	Kingman Reef	Bermuda	Cefotaxime	
30	Louisiana	Bhutan	Cefotetan	
31	Maine	Bolivia	Cefoxitin	
32	Marshall Islands	Bosnia and Herzegovina	Cefpodoxime	
33	Maryland	Botswana	Cefsulodin	
34	Massachusetts	Bouvet Island	Ceftazidime	
35	Michigan	Brazil	Ceftizoxime	
36	Midway Islands	British Indian Ocean Territory	Ceftriaxone	
37	Minnesota	Brunei Darussalam	Cefuroxime	
38	Mississippi	Bulgaria	Cephalexin	
39	Missouri	Burkina Faso	Cephapirin	
40	Montana	Burundi	Cephazolin	
41	Navassa Island	Cambodia	Cephradine	
42	Nebraska	Cameroon	Chloramphenicol	
43	Nevada	Canada	Cidofovir	
44	New Hampshire	Cape Verde	Cinoxacin	
45	New Jersey	Cayman Islands	Ciprofloxacin	
46	New Mexico	Central African Republic	Clavulanic acid	
47	New York	Chad	Clindamycin	

WA KINGCO 20-0492-G-000191

	AA	AB	AC	AD
1	Type of exposure	Animal - Common name	Animal -Scientific name	Animal category
2	Multiple	Multiple	Multiple	Multiple
3	R002	B08F	SPC1	X106
4	Bite	Alpaca	[Bearded dragon]	Breeding stock
5	No known exposure	Amphibian (Class Amphibia)	[Coyote-dog hybrid]	Circus
6	Nonbite (contact only)	Antelope_Pronghorn	[Deer]	Companion (Pet)
7	Nonbite (scratch)	Antelope_Roan	[Donkey]	Competition
8	Unknown	Antelope_Sable	[Duck]	Domestic animal (livestock) - Dairy
9		Antelope_Sable (Genus Hippotragus)	[Elephant]	Domestic animal (livestock) - Draft
10		Armadillo_Nine-banded	[Ferret]	Domestic animal (livestock) - Fiber
11		Baboon (Genus Papio)	[Fox]	Feral
12		Badger_American	[Frog]	Game
13		Bandicoot_Rat, Lesser	[Frog_Toad]	Layer (Poultry)
14		Bat (Order Chiroptera)	[Gecko]	Livestock, Meat
15		Bat_Allen's Big-eared	[Gerbil]	Multipurpose
16		Bat_Antillean Ghost-faced	[Goldfinch]	Petting Zoo Animal
17		Bat_Arizona Myotis	[Goose_Domestic]	Rescue
18		Bat_Big brown	[Hamster]	Research
19		Bat_Big Free-tailed	[Hawk]	Service
20		Bat_Black mastiff	[Iguana]	Unknown
21		Bat_Brazilian (Mexican) Free-Tailed	[Kangaroo]	Wild (Domesticated)
22		Bat_California Leaf-nosed	[Lizard]	Wildlife
23		Bat_California Myotis	[Lorikeet]	Zoo Animal
24		Bat_Cave Myotis	[Monkey]	
25		Bat_Eastern Pipistrelle	[Mouse]	
26		Bat_Eastern Red	[Mouse_Neonatal]	
27		Bat_Eastern Small-footed Myotis	[Owl]	
28		Bat_Egyptian Rousette	[Oyster]	
29		Bat_Evening	[Pigeon]	
30		Bat_Fishing	[Primate_Nonhuman]	
31		Bat_Fishing (Genus Noctilio)	[Quail]	
32		Bat_Flying foxes (Genus Pteropus)	[Rabbit]	
33		Bat_Free-tailed (Family Molossidae)	[Seal]	
34		Bat_Free-tailed (Genus Tadarida)	[Turkey]	
35		Bat_Fringed Myotis	[Turtle]	
36		Bat_Ghost-Faced	[Vole]	
37		Bat_Gray	[Wallaby]	
38		Bat_Hoary	Acinonyx jubatus	
39		Bat_Indian Flying Fox	Ailuropoda melanoleucus	
40		Bat_Indiana	Ailurus fulgens	
41		Bat_Jamaican Fruit-eating	Alces alces	
42		Bat_Keen's Myotis	Ammospermophilus harrisi	
43		Bat_Little Brown Bat	Ammospermophilus insularis	
44		Bat_Long-Eared Myotis	Ammospermophilus interpres	
45		Bat_Long-Haired Rousette	Ammospermophilus leucurus	
46		Bat_Long-Legged Myotis	Ammospermophilus nelsoni	
47		Bat_Long-nosed, Southern	Amphibia (Class)	

WA KINGCO 20-0492-G-000192

	AE	AF	AG	AH
1	Arthropod - Common name	Arthropod - Scientific name	Immunization #1, #2, #3, #4 - Human	Immunization #1, #2, #3, #4 - Animal
2	Multiple	Multiple	Multiple	Multiple
3	B0ZV	SPC3	B0Z0	B0Z0
4	Arachnids (Class)	[Blow fly]	Adenovirus	Adenovirus
5	Black fly (Family Simuliidae)	[Fly]	Anthrax vaccination	Avian encephalomyelitis
6	Black fly (Simulium nigricoxum)	[Hornet]	BCG vaccination	Avian infectious bursal disease antibodies
7	Blow fly	[Maggot]	Botulism antitoxin vaccine	Avian infectious laryngotracheitis
8	Bot fly (Family Oestridae)	Actenopsylla suavis	DPT vaccination	Avian pox
9	Crustacean (Subphylum Crustacea)	Adoratopsylla intermedia	Haemophilus influenzae type b vaccination	Blackleg
10	Deer fly (Genus Chrysops)	Aetheca thamba	Influenza - Pan. H1N1 Inactivated	Bordetella ("kennel cough")
11	Flea (Actenopsylla suavis)	Aetheca wagneri	Influenza - Pan. H1N1 Live	Bordetella bronchiseptica
12	Flea (Adoratopsylla intermedia)	Amaradix bitterrootensis	Influenza - PrePan. H5N1 Inactivated	Canine coronavirus
13	Flea (Aetheca thamba)	Amaradix euphorbi	Influenza - PrePan. H5N1 Live	Canine distemper virus (CDV)
14	Flea (Aetheca wagneri)	Amblyomma americanum	Influenza vaccination	Canine leptospirosis
15	Flea (Amaradix bitterrootensis)	Amblyomma dubitatum	Influenza - Seasonal Inactivated	Canine parainfluenza virus
16	Flea (Amaradix euphorbi)	Amblyomma imitator	Influenza - Seasonal Live	Canine parvovirus (CPV)
17	Flea (Amphipsylla sibirica pollionis)	Amblyomma inornatum	Inactivated Influenza Vaccination	Chlamydiosis
18	Flea (Amphipsylla sibirica washingtona)	Amblyomma interandinum	Lyme disease	Dermatophytosis (ringworm)
19	Flea (Amphipsylla sibirica)	Amblyomma maculatum	Measles vaccine	Duck plague
20	Flea (Anomiopsyllus amphibolus)	Amblyomma mixtum	Meningococcus vaccination	Egg drop syndrome
21	Flea (Anomiopsyllus durangoensis)	Amblyomma ovale	MMR	Enterotoxemia
22	Flea (Anomiopsyllus falsicalifornicus)	Amblyomma patinoi	MMR vaccination	Feline calicivirus (FCV)
23	Flea (Anomiopsyllus martini)	Amblyomma sculptum	MR vaccine (measles and rubella)	Feline infectious peritonitis (FIP)
24	Flea (Anomiopsyllus montanus)	Amblyomma spp.	Mumps vaccination	Feline leukemia virus (FeLV)
25	Flea (Anomiopsyllus nidiophilus)	Amblyomma tonelliae	Mumps vaccine	Feline panleukopenia (FPL)
26	Flea (Anomiopsyllus novomexicanensis)	Amblyomma triste	Plague vaccination	Feline viral rhinotracheitis (FVR)
27	Flea (Anomiopsyllus nudatus)	Amblyomma tuberculatum	Pneumococcal vaccination	Foot-and-Mouth Disease
28	Flea (Anomiopsyllus oaxacae)	Amblyomma variegatum	Poliomyelitis vaccination	Haemophilus paragallinarum (HPG)
29	Flea (Anomiopsyllus sinuatus)	Amphipsylla sibirica	Q Fever Vaccination	Infectious Bronchitis
30	Flea (Anomiopsyllus sp (Genus))	Amphipsylla sibirica pollionis	Rabies vaccination	Infectious necrotic hepatitis
31	Flea (Anomiopsyllus traubi)	Amphipsylla sibirica washingtona	Rocky Mountain spotted fever vaccination	Influenza
32	Flea (Anomiopsyllus walkeri)	Anomiopsyllus amphibolus	Rubella vaccination	Influenza_Avian
33	Flea (Atheropsylla cochisei)	Anomiopsyllus durangoensis	Rubeola vaccination	Lyme disease
34	Flea (Athyphloceras bishopi)	Anomiopsyllus falsicalifornicus	Smallpox vaccination	Mycoplasma gallisepticum
35	Flea (Athyphloceras echis)	Anomiopsyllus martini	Tetanus vaccination	Newcastle Disease
36	Flea (Athyphloceras multidentatus)	Anomiopsyllus montanus	Tularaemia vaccination	Rabies
37	Flea (Athyphloceras tancitari)	Anomiopsyllus nidiophilus	Typhoid vaccination	Rattlesnake
38	Flea (Baculomeris almani)	Anomiopsyllus novomexicanensis	Unknown	Swine fever
39	Flea (Baculomeris schmidt)	Anomiopsyllus nudatus	Varicella vaccination	Swine Pasteurella multocida
40	Flea (Callistopsyllus terinus campestris)	Anomiopsyllus oaxacae	Yellow fever vaccination	Swine Streptococcal Septicemia
41	Flea (Callistopsyllus terinus deuterus)	Anomiopsyllus sinuatus	Zoster vaccination	Unknown
42	Flea (Callistopsyllus terinus terinus)	Anomiopsyllus sp (Genus)	Unknown	
43	Flea (Carteretta carteri)	Anomiopsyllus traubi		
44	Flea (Carteretta clavata)	Anomiopsyllus walkeri		
45	Flea (Catallagia arizonae)	Atheropsylla cochisei		
46	Flea (Catallagia borealis)	Athyphloceras bishopi		
47	Flea (Catallagia calisher)	Athyphloceras echis		

WA KINGCO 20-0492-G-000193

	AI	AJ	AK	AL
1	Conditions	Local Types	Suspected Agent Category	STAT Package Condition
2	Multiple	Multiple	Multiple	Multiple
3	X104	A297	A283	CND1
4	Ambient temperature	ABC Accession Number	Babesia species	Damaged
5	Bloody	ABC Number	Bacteria	Good
6	Cold	ABC State ID	Chemical or external agent	Wet
7	Fixed	Aliquot No.	Free-living amoeba	
8	Fresh	APHL	Fungi	
9	Frozen	ARL Clinical #	Fusobacterium species	
10	Good	Battelle Memorial Institute	Mycobacterium	
11	Inadequate volume	BRRAT Batch	Non-infectious	
12	Inappropriate specimen	BT Number	Other	
13	Insufficient sample	Bureau of Labs	Parasite	
14	Lipemic	Campylobacter Ref Lab ID	Prion	
15	Lyophilized	Campylobacter Reference Lab ID	Rabies	
16	Missing submission data	Case Number	Rabies-confirmed	
17	Mixed	CDC	Rabies-rule out	
18	Primary	CDC Outbreak ID:	Rickettsia	
19	Pure	City Health Department	Toxin	
20	Refrigerated	Clinic	Unknown	
21	Sample broken	Collaborating Lab	Virus	
22	Sample clotted	Commercial lab		
23	Sample Cloudy	Correctional Institution		
24	Sample contaminated	Country		
25	Sample hemolyzed	Country Health Department		
26	Sample icteric	County Health Department		
27	Sample incorrectly labelled	County ID		
28	Sample leaked	Culture Collection #		
29	Sample missing	Date Of Birth		
30	Sample turbid	Dept of Health & Senior Services		
31	Sample undocumented	Dept of HRS		
32	Sample unlabelled	District Health Department		
33	Sample with noticeable liquid content	Drug Resistance Lab ID		
34	Secondary	Dx Lab		
35	Specimen rejected / not processed	EIS Officer		
36	Specimen unsatisfactory for evaluation	Emory Yerkes Primate Center		
37	Thawed	EPA		
38	Warm	Epi-Aid Number:		
39		FDA		
40		Federal Bureau of Prisons		
41		Federal Agency/Institution		
42		Federal Hospital		
43		Foreign National Public Health Lab		
44		Hospital		
45		International Institution		
46		International Submitter		
47		Journal of Infectious Disease		

WA KINGCO 20-0492-G-000194

	AM	AN	AO	AP
1	STAT Container Condition	STAT Specimen Condition	Combined Common Name	Combined Scientific Name
2	Multiple	Multiple	Multiple	Multiple
3	CND2	CND3	B08F/B0ZV	SPC1/SPC3
4	Ambient temperature	Bloody	Alpaca	Lama pacos
5	Cold	Fixed	Amphibian (Class Amphibia)	Amphibia (Class)
6	Frozen	Fresh	Antelope_Pronghorn	Antilocapra americana
7	Thawed	Good	Antelope_Roan	Hippotragus equinus
8	Warm	Inadequate volume	Antelope_Sable	Hippotragus niger
9		Inappropriate specimen	Antelope_Sable (Genus Hippotragus)	Hippotragus (Genus)
10		Insufficient sample	Arachnids (Class)	Class Arachnida
11		Lipemic	Armadillo_Nine-banded	Dasypus novemcinctus
12		Lyophilized	Baboon (Genus Papio)	Papio (Genus)
13		Refrigerated	Badger_American	Taxidea taxus
14		Sample broken	Bandicoot_Rat, Lesser	Bandicota bengalensis
15		Sample clotted	Bat (Order Chiroptera)	Chiroptera (Order)
16		Sample cloudy	Bat_Allen's Big-eared	Idionycteris phyllotis
17		Sample contaminated	Bat_Antillean Ghost-faced	Mormoops blainvillii
18		Sample hemolyzed	Bat_Arizona Myotis	Myotis occultus
19		Sample icteric	Bat_Big brown	Eptesicus fuscus
20		Sample incorrectly labelled	Bat_Big Free-tailed	Nyctinomops macrotis
21		Sample leaked	Bat_Black mastiff	Molossus ater
22		Sample missing	Bat_Brazilian (Mexican) Free-Tailed	Tadarida brasiliensis
23		Sample turbid	Bat_California Leaf-nosed	Macrotus californicus
24		Sample undocumented	Bat_California Myotis	Myotis californicus
25		Sample unlabelled	Bat_Cave Myotis	Myotis velifer
26		Sample with noticeable liquid co	Bat_Eastern Pipistrelle	Pipistrellus subflavus
27		Secondary	Bat_Eastern Red	Lasiurus borealis
28		Specimen rejected / not processe	Bat_Eastern Small-footed Myotis	Myotis leibii
29		Specimen unsatisfactory for eval	Bat_Egyptian Rousette	Rousettus aegyptiacus
30		Thawed	Bat_Evening	Nycticeius humeralis
31			Bat_Fishing	Noctilio leporinus
32			Bat_Fishing (Genus Noctilio)	Noctilio (Genus)
33			Bat_Flying foxes (Genus Pteropus)	Pteropus (Genus)
34			Bat_Free-tailed (Family Molossidae)	Molossidae (Family)
35			Bat_Free-tailed (Genus Tadarida)	Tadarida (Genus)
36			Bat_Fringed Myotis	Myotis thysanodes
37			Bat_Ghost-Faced	Mormoops megalophylla
38			Bat_Gray	Myotis grisescens
39			Bat_Hoary	Lasiurus cinereus
40			Bat_Indian Flying Fox	Pteropus giganteus
41			Bat_Indiana	Myotis sodalis
42			Bat_Jamaican Fruit-eating	Artibeus jamaicensis
43			Bat_Keen's Myotis	Myotis keenii
44			Bat_Little Brown Bat	Myotis lucifugus
45			Bat_Long-Eared Myotis	Myotis evotis
46			Bat_Long-Haired Rousette	Rousettus lanosus
47			Bat_Long-Legged Myotis	Myotis volans

WA KINGCO 20-0492-G-000195

	AQ	AR	AS	AT	AU	AV
1	Storage Locations	Absolute Position	Storage Location Building	Combined Scientific Name	Checkbox	Pregnant
2	LOCATION	Position	Building	[Bearded dragon]	Y	Yes
3	None	None	None	[Blow fly]		No
4	Anchorage	Auto Assign	BLD 10	[Coyote-dog hybrid]		Unknown
5	Atlanta - Roybal	A , 1	BLD 14	[Deer]		NA
6	Atlanta - Chamblee	A , 2	BLD 15	[Donkey]		
7	San Juan	A , 3	BLD 16	[Duck]		
8	Fort Collins	A , 4	BLD 17	[Elephant]		
9		A , 5	BLD 18	[Ferret]		
10		A , 6	BLD 19	[Fly]		
11		A , 7	BLD 20	[Fox]		
12		A , 8	BLD 21	[Frog]		
13		A , 9	BLD 23	[Frog_Toad]		
14		A , 10	BLD 24	[Gecko]		
15		A , 11	BLD 34	[Gerbil]		
16		A , 12	BLD 43	[Goldfinch]		
17		A , 13	BLD 45	[Goose_Domestic]		
18		A , 14	BLD 47	[Hamster]		
19		A , 15	BLD 48	[Hawk]		
20		B , 1	BLD 52	[Hornet]		
21		B , 2	BLD 54	[Iguana]		
22		B , 3		[Kangaroo]		
23		B , 4		[Lizard]		
24		B , 5		[Lorikeet]		
25		B , 6		[Maggot]		
26		B , 7		[Monkey]		
27		B , 8		[Mouse]		
28		B , 9		[Mouse_Neonatal]		
29		B , 10		[Owl]		
30		B , 11		[Oyster]		
31		B , 12		[Pigeon]		
32		B , 13		[Primate_Nonhuman]		
33		B , 14		[Quail]		
34		B , 15		[Rabbit]		
35		C , 1		[Seal]		
36		C , 2		[Turkey]		
37		C , 3		[Turtle]		
38		C , 4		[Vole]		
39		C , 5		[Wallaby]		
40		C , 6		Acinonyx jubatus		
41		C , 7		Actenopsylla suavis		
42		C , 8		Adoratopsylla intermedia		
43		C , 9		Aetheca thamba		
44		C , 10		Aetheca wagneri		
45		C , 11		Ailuropoda melanoleucus		
46		C , 12		Ailurus fulgens		
47		C , 13		Alces alces		

	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG
1	Container	Units	SPHL Name								
2	Cell Preparation Tube (CPT)	%	AK State Public Health Lab, State Health Department								
3	Centrifuge tube	% v/v	AL Dept. of Public Health Bureau of Clinical Laboratories								
4	Citrate tubes (Yellow top)	% w/w	AR Dept. of Health-PHL, Clinical Micro Lab								
5	Cyto-Chex BCT	%Label Cl	AR Dept. of Health-PHL, Molecular Diagnostics								
6	DBS Card	/100ml	AR Dept. of Health-PHL, TB/Mycology Lab								
7	Matrix tube	/ml	AR Dept. of Health-PHL, Zoonotic Disease Section								
8	Microcentrifuge Tube	API	AR Dept. of Health-PHL/Chemical Terrorism								
9	PaxGene Blood DNA tubes	Atm	AR Dept. of Health-Pub. Health Lab, Immunology Lab								
10	Plasma Preparation Tube (PPT)	C	AR Dept. of Health-Public Health Lab								
11	Red top tube	cc	AUS-Centre for ID and Microbiology Lab Services								
12	Screw Cap Tube	Cells	AZ SPHL, Arizona Department of Health Services								
13	Serum Separation Tube (SST)	CFU/g	CA-LAC+USC Medical Center								
14	Specimen Transport Tube	CFU/kg	CA-Los Angeles County Public Health Laboratory								
15	Swab sleeve	CFU/m3	CAN-British Columbia PH Micro and Ref. Lab, PHSA, Parasitology Sec								
16	Tempus Blood RNA	CFU/mg	CAN-British Columbia PH Microbiology and Ref. Laboratory								
17	Thin Prep	CFU/mL	CAN-Cadham Provincial Lab								
18		cm	CAN-Natl Reference Centre for Parasitology (NRCP)								
19		COL/GM	CAN-PH Agency of Canada, National Microbiology Lab								
20		Copies/mL	CAN-Public Health Agency of Canada, Zoonotic and Special Pathogens Division								
21		CT	CAN-The Toronto Hospital, Tropical Disease Unit								
22		day	CAP-College of American Pathologists								
23		deg rot	CA-Placer County Public Health Laboratory								
24		each	CA-Santa Clara County Public Health Laboratory								
25		F	CA-Veterans Affairs Palo Alto Healthcare System								
26		Fiber/cc	CDC Occupational Health Clinic								
27		g	CDPH, Microbial Diseases Laboratory								
28		g/L	CDPH, Viral and Rickettsial Disease Laboratory								
29		g/mL	CDPH-Vector-Borne Disease Section								
30		gallon	CDPH-Vector-Borne Disease Section - Ontario								
31		gm/dL	CO Dept. of Public Health and Environment, Lab Services Division								
32		hm/cell	COL-Instituto Nacional de Salud								
33		hr	CO-United States Olympic Committee								
34		Index Value	CSTOR Public Health Lab								
35		ISR	CT-Dr. Katherine A. Kelley State Public Health Lab								
36		iu/L	DC - Peace Corps Headquarters								
37		IU/mL	DC -Bureau of Medical Services , US Dept. of State								
38		K	DC Public Health Lab/ Dept. of Forensic Sciences								
39		kg	DC-The Parasitology Laboratory of Washington								
40		Kit	DE Public Health Laboratory								
41		km	DNK-Tech. University of Denmark, Natl Food Institute								
42		L	ETH-Public Health Institute/Virology Research Team								
43		lb	FDA-Arkansas Regional Laboratory-Denver Analyst								
44		m	FDA-Natl Center for Toxicological Research								
45		mcg/mg cre	FDA-Northeast Regional Laboratory, U.S. FDA								
46		mEq/L	FL Bur. of Public Health Laboratories-Jacksonville								
47		mg	FL Bureau of Public Health Laboratories-Miami								

	A	B	C
48		Bordetella species Study	Anaerobic spore-forming Gram-positive bacillus
49		Bordetella spp. Identification (not B. pertussis/parapertussis)	Anaerobiospirillum species
50		Borrelia burgdorferi (Lyme Disease) Serology	Anaplasma phagocytophilum
51		Borrelia Culture and Identification	Anaplasma species
52		Borrelia hermsii (Tick-borne Relapsing Fever) Serology	Angiostrongylus cantonensis
53		Borrelia Molecular Detection — Relapsing Fever	Angiostrongylus species
54		Borrelia Special Study	Apophysomyces elegans
55		Botulism Laboratory Confirmation	Arcanobacterium species
56		Botulism Special Study	Arthrobacter species
57		Brucella species Identification, Genotyping and Antimicrobial Susceptibility Testing	Arthrographis species
58		Brucella species Molecular Detection	Ascaris lumbricoides
59		Brucella species Serology	Ascaris species
60		Brucella species Study	Aspergillus calidoustus
61		Burkholderia mallei/pseudomallei Identification, Genotyping and AST	Aspergillus flavus group
62		Burkholderia mallei/pseudomallei Molecular Detection	Aspergillus fumigatus
63		Burkholderia mallei/pseudomallei Study	Aspergillus niger
64		Burkholderia pseudomallei Serology	Aspergillus species
65		Burkholderia spp. Identification (not B. mallei/pseudomallei)	Aspergillus sydowii
66		Campylobacter and Helicobacter Study	Aspergillus terreus complex
67		Campylobacter, Helicobacter, and Related Organisms Identification	Aspergillus versicolor Group
68		Campylobacter, Helicobacter, and Related Organisms Identification and Subtyping	Aureobacterium species
69		Campylobacter species Serology	Aureobasidium pullulans
70		Chagas Disease Molecular Detection	Averyella dalhousiensis
71		Chagas Disease Serology	Babesia microti
72		Chlamydia pneumoniae Molecular Detection	Babesia species
73		Chlamydia psittaci Molecular Detection	Bacillus anthracis
74		Chlamydia Species (Respiratory) Molecular Detection	Bacillus cereus
75		Chlamydia trachomatis / Neisseria gonorrhoeae - Molecular Detection Nucleic Acid	Bacillus cereus group
76		Chlamydia trachomatis LGV Molecular Detection	Bacillus megaterium
77		Chlamydia trachomatis, Genital - Study	Bacillus simplex
78		Clostridioides (Clostridium) difficile - Outbreak Strain Typing	Bacillus species
79		Clostridium perfringens Detection - Foodborne Outbreak	Bacillus subtilis
80		Corynebacterium diphtheriae Study	Bacillus thuringiensis
81		Corynebacterium diphtheriae/ulcerans/pseudotuberculosis Detection, Identification, and	Bacillus tusciae
82		Corynebacterium species Identification (not C. diphtheriae)	Bacillus vedderi
83		Coxiella burnetii Molecular Detection	Bacterium
84		Coxiella burnetii Serology	Bacteroides fragilis
85		Coxiella Special Study	Balamuthia species
86		Crimean-Congo Hemorrhagic Fever Testing	Balantidium coli
87		Cryptosporidium Special Study	Bartonella (Rochalimaea) species
88		Cyclospora Molecular Detection	Bartonella bacilliformis
89		Cysticercosis Serology	Bartonella henselae
90		Cytomegalovirus (CMV) Detection	Bartonella koehlerae
91		Cytomegalovirus (CMV) Serology	Bartonella quintana
92		Dengue Virus Detection and Serology	Basidiobolus species
93		Detection of Mycoplasma genitalium Antimicrobial Resistance Markers Study	Bifidobacterium species
94		Ebola Hemorrhagic Fever Serology and Molecular Detection	Bipolaris spicifera

	D	E	F	G	H	I	J
48				Chronic obstructive pulmonary disease			
49				Cladosporiosis			
50				Clonorchiasis			
51				Coccidioidomycosis			
52				Coccidiosis			
53				Colorado tick fever			
54				Congenital toxoplasmosis			
55				Conidiobolomycosis			
56				Conjunctivitis			
57				Croup			
58				Cryptococcosis			
59				Cryptosporidiosis			
60				Cutaneous dermatophilosis			
61				Cystic fibrosis			
62				Cysticercosis			
63				Cystitis			
64				Dehydration			
65				Dementia			
66				Dengue			
67				Dermatophytosis			
68				Diabetes			
69				Diarrhea			
70				Diphtheria			
71				Drug abuse			
72				Dysentery			
73				Ear infection			
74				Echinococcosis			
75				Ehrlichiosis			
76				Empyema			
77				Encephalitis			
78				Eosinophilia			
79				Epidemic keratoconjunctivitis (EKC)			
80				Epiglottitis			
81				Erysipelas			
82				Erythema Infectiosum			
83				Failure to thrive			
84				Fever			
85				Filariasis			
86				Food poisoning			
87				Gangrene			
88				Gastritis			
89				Gastroenteritis			
90				Geotrichosis			
91				Giardiasis			
92				Glanders			
93				Gonococcal meningitis			
94				Gonorrhea			

	K	L	M	N
48	Dairy_Cheese	Fluid_Amniotic	Honey	
49	Dairy_Ice cream	Fluid_Ascitic	Isolate	
50	Dairy_Milk	Fluid_Body	IV Medications	
51	Dairy_Yogurt	Fluid_Bronchial	IV Tubing	
52	Dialysate	Fluid_Bronchoalveolar lavage (BAL)	Jelly	
53	DNA-Deoxyribonucleic acid	Fluid_Bursa	Juice	
54	Dried blood spot (DBS)	Fluid_Cerebrospinal (CSF)	Juice, Apple	
55	Dried plasma spot	Fluid_Cyst fluid sample	Juice, Carrot	
56	Dried tube specimen (DTS)	Fluid_Drainage	Juice, Vegetable	
57	Dust	Fluid_Empyema	Meat	
58	Dust_wood	Fluid_lesion	Meat, Bear	
59	Egg	Fluid_Pericardial	Meat, Beef	
60	Endoscope	Fluid_Peritoneal	Meat, Beef, Ground_cooked	
61	Environmental swab	Fluid_Pleural	Meat, Beef, Ground_raw	
62	Eschar	Fluid_Pustule (pus)	Meat, Chicken	
63	Eschar swab	Fluid_Synovial	Meat, Ham	
64	Esophageal brushings sample	Fluid_Thoracentesis	Meat, Pork	
65	Exhaled breath condensate	Fluid_Tracheal aspirate	Meat, Sausage	
66	Exudate	Fluid_Unknown origin	Meat, Turkey	
67	Eye (Lacrimal) secretions	Fluid_Vesicle (blister)	Meat, Turkey, Ground_cooked	
68	Eye swab	Fluid_Vitreous Humor	Meat, Turkey, Ground_raw	
69	Faucet component	Fly	Meat, Veal	
70	Feed, Animal	Foreign object (body)	Meat, Venison	
71	Feed_Avian	Formalin-fixed paraffin-embedded tissue	Medical Equipment	
72	Filter	Gastric contents	Moonshine (Pruno brew)	
73	Fistula	Graft specimen from patient	Nest material	
74	Flea	Granulocyte	Nuts	
75	Fluid_Amniotic	Hair specimen	Nuts, Peanuts	
76	Fluid_Ascitic	Head	Oil	
77	Fluid_Body	Incision Site	Pellet_wood	
78	Fluid_Bronchial	Internal nose swab	Plant matter	
79	Fluid_Bronchoalveolar lavage (BAL)	Isolate	Plasmid	
80	Fluid_Bursa	Lavage cervical supernatant	P-trap	
81	Fluid_Cerebrospinal (CSF)	Lavage_cervical	Reference Strain	
82	Fluid_Cyst fluid sample	Lavage_rectal	RNA-Ribonucleic acid	
83	Fluid_Drainage	Lesion	Sample Tanker	
84	Fluid_Empyema	Louse	Sand	
85	Fluid_lesion	Lymph Node	Seafood	
86	Fluid_Pericardial	Lymph Node aspirate	Seafood, Clams	
87	Fluid_Peritoneal	Macule	Seafood, Crab	
88	Fluid_Pleural	Monocyte	Seafood, Fish	
89	Fluid_Pustule (pus)	Mucosa specimen	Seafood, Shellfish	
90	Fluid_Synovial	Mucus	Seafood, Shrimp	
91	Fluid_Thoracentesis	Nail specimen (specimen)	Seafood, Squid	
92	Fluid_Tracheal aspirate	Nasal secretions	Sediment_Water	
93	Fluid_Unknown origin	Nasal wash	Sewage	
94	Fluid_Vesicle (blister)	Nasogastric aspirate	Shower component	

	O	P	Q
48	Bone_Tibia	Right outer	TearFlo strip
49	Bone_Tibial tarsal bone (Talus)	Right posterior	Thoracentesis
50	Bone_Trochanter of femur	Right upper	Tick drag/flag
51	Brachial plexus	Right ventral	Transbronchial biopsy
52	Brain	Superficial	Transparent (Scotch) tape method (Fungi)
53	Brain fornix	Superior	Transthoracic echocardiography
54	Brain_Cerebellum	Unknown	Unknown
55	Brain_Dura mater	Upper	Vacuum
56	Brain_Frontal lobe		Venipuncture
57	Brain_Meninges		WECK-CEL
58	Brain_Occipital cortex region		Wick
59	Brain_Occipital lobe		Wipe
60	Brain_Parietal lobe		
61	Brain_Parietal lobe cortex		
62	Brain_Pons		
63	Brainstem		
64	Breast		
65	Bronchus		
66	Buccal mucosa		
67	Bursa		
68	Buttock		
69	Cardiac valve		
70	Cardiac ventricle		
71	Cardioesophageal junction		
72	Carpal canal		
73	Cecum		
74	Central nervous system		
75	Cerebellopontine angle		
76	Cerebral structure		
77	Cervical lymph node		
78	Cervix		
79	Chest		
80	Chest wall		
81	Chin		
82	Cisterna magna		
83	Colon		
84	Colon_Sigmoid		
85	Colonic epiploicae		
86	Common bile duct		
87	Conjunctiva		
88	Cornea		
89	Coronary artery		
90	Duodenal mucous membrane		
91	Duodenum		
92	Ear		
93	Ear_canal		
94	Ear_External		

	R	S
48	Transbronchial biopsy	
49	Transparent (Scotch) tape method (Fungi)	
50	Transthoracic echocardiography	
51	Unknown	
52	Vacuum	
53	Venipuncture	
54	WECK-CEL	
55	Wick	
56	Wipe	
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		
76		
77		
78		
79		
80		
81		
82		
83		
84		
85		
86		
87		
88		
89		
90		
91		
92		
93		
94		

	T	U	V
48	Heart Infusion agar with 5% rabbit blood		
49	Heart Infusion Broth (HIB)		
50	Hektoen Enteric Agar		
51	Heparin		
52	K2 EDTA		
53	K3 EDTA		
54	King B broth		
55	Lithium Heparin		
56	Liver Veal agar		
57	Loeffler's agar		
58	Low Viscosity polyvinyl Alcohol (LV-PVA)		
59	Low Viscosity polyvinyl Alcohol with 10% Formalin (LV-PVA 10% Formalin)		
60	Lowenstein-Jensen (LJ) medium		
61	Lowenstein-Jensen (LJ) w/Fe		
62	Lowenstein-Jensen (LJ) w/NaCl		
63	Lysis buffer		
64	MacConkey Broth (MAC)		
65	MacConkey Sorbitol broth		
66	Martin Lewis (ML) agar		
67	MGIT Broth		
68	Middlebrook 7H10 agar		
69	Middlebrook 7H11 agar		
70	Middlebrook 7H9 broth		
71	Minimal Essential Medium + 10% Fetal Calf Serum (MEM-10)		
72	Modified Cary Blair medium		
73	Modified Thayer Martin (MTM) agar		
74	Motility medium		
75	Mycobacteria Growth Indicator Tube (MGIT)		
76	Mycoplasma SP4 Broth Medium		
77	Mycosel Agar		
78	Neopeptone agar		
79	No additive		
80	Nutrient Agar		
81	Paraffin		
82	Polyvinyl alcohol_Copper (CU-PVA)		
83	Polyvinyl alcohol_Copper (mod) & 10% formalin.		
84	Polyvinyl alcohol_Zinc sulphate (Zn-PVA)		
85	Polyvinyl alcohol_Zinc sulphate (Zn-PVA) + 10% Formalin		
86	Potassium hydroxide (KOH)		
87	Potassium hydroxide (KOH) + chloroform		
88	Potassium oxalate/sodium fluoride		
89	Potato Dextrose Agar (PDA)		
90	PreservCyt		
91	Regan-Lowe Transport medium		
92	Sabouraud Brain Heart Infusion Agar (SBHIA)		
93	Sabouraud Brain Heart Infusion Agar with Blood (SBHIBA)		
94	Sabouraud dextrose agar		

	W	X	Y	Z
48	North Carolina	Chile	Clofazimine	
49	North Dakota	China	Cloxacillin	
50	Northern Mariana Islands	Christmas Island	Colistin	
51	Ohio	Cocos (Keeling) Islands	Corticosteroids	
52	Oklahoma	Colombia	Co-trimoxazole (Sulfamethoxazole-trimethoprim)	
53	Oregon	Comoros	Cycloserine	
54	Palau	Congo	Dapsone	
55	Palmyra Atoll	Congo, The Democratic Republic of the	Dicloxacillin	
56	Pennsylvania	Cook Islands	Doxycycline	
57	Puerto Rico	Costa Rica	Enoxacin	
58	Rhode Island	Cote D'Ivoire	Erythromycin	
59	South Carolina	Croatia	Ethambutol	
60	South Dakota	Cuba	Ethionamide	
61	Tennessee	Cyprus	Fusidic acid	
62	Texas	Czech Republic	Gentamicin	
63	Utah	Denmark	Imipenem	
64	Vermont	Djibouti	Immune globulin immunization	
65	Virgin Islands of the U.S.	Dominica	Isoniazid	
66	Virginia	Dominican Republic	Kanamycin	
67	Wake Island	Ecuador	Levofloxacin	
68	Washington	Egypt	Lincomycin	
69	West Virginia	El Salvador	Lysostaphin	
70	Wisconsin	Equatorial Guinea	Lysostaphin (Glycyl-glycine endopeptidase)	
71	Wyoming	Eritrea	Mecillinam	
72		Estonia	Mercury	
73		Ethiopia	Methicillin	
74		Falkland Islands (Malvinas)	Metronidazole	
75		Faroe Islands	Mezlocillin	
76		Federated States of Micronesia	Minocycline	
77		Fiji	Moxalactam	
78		Finland	Moxifloxacin	
79		France	Nafcillin	
80		French Guiana	Nalidixic acid	
81		French Polynesia	Natural penicillin	
82		French Southern Territories	Neomycin	
83		Gabon	Netilmicin	
84		Gambia	Nitrofurantoin	
85		Georgia	Norfloxacin	
86		Germany	Novobiocin	
87		Ghana	Nystatin	
88		Gibraltar	Oleandomycin	
89		Greece	Oseltamivir phosphate (Tamiflu)	
90		Greenland	Other	
91		Grenada	Oxacillin	
92		Guadeloupe	Oxytetracycline	
93		Guam	Palivizumab (Synagis)	
94		Guatemala	Piperacillin	

	AA	AB	AC	AD
48		Bat_Long-tongued (Genus Choeronycteris)	Antilocapra americana	
49		Bat_Macleay's Moustached	Antrozous pallidus	
50		Bat_Mexican Long-nosed	Aotus (Genus)	
51		Bat_Mexican Long-tongued	Aplodontia rufa	
52		Bat_Mexican Myotis	Ara (Genus)	
53		Bat_Myotis (Genus Myotis)	Arborimus albipes	
54		Bat_Northern Yellow	Arborimus longicaudus	
55		Bat_Pallid (Desert)	Arctictis binturong	
56		Bat_Parnell's Moustached	Artibeus jamaicensis	
57		Bat_Pocketed Free-tailed	Arvicola terrestris	
58		Bat_Rodriguez Flying Fox	Atelerix albiventris	
59		Bat_Seminole	Aves (Class)	
60		Bat_Silver-haired	Bandicota bengalensis	
61		Bat_Sooty Moustached	Bassariscus astutus	
62		Bat_Southeastern Myotis	Bassariscus sumichrasti	
63		Bat_Southern Yellow	Bison bison	
64		Bat_Southwestern Myotis	Blarina (Genus)	
65		Bat_Spear-nosed (Genus Phyllostomus)	Boa constrictor subsp constrictor	
66		Bat_Spear-nosed, Greater	Bolomys lasiurus	
67		Bat_Spotted	Bos (Genus)	
68		Bat_Townsend's Big-eared	Bos taurus	
69		Bat_Underwoods Mastiff	Brachylagus idahoensis	
70		Bat_Vampire	Bubo virginianus	
71		Bat_Wagner's Mastiff	Callithrix (Genus)	
72		Bat_Waterhouses Leaf-nosed	Callithrix kuhlii	
73		Bat_Western Mastiff	Camelus (Genus)	
74		Bat_Western Pipistrelle	Camelus bactrianus	
75		Bat_Western Red	Camelus dromedarius	
76		Bat_Western Small Footed	Canis latrans	
77		Bat_Yuma Myotis	Canis lupus	
78		Bear (Genus Ursus)	Canis lupus subsp familiaris	
79		Bear_Black	Canis lupus subsp rufus	
80		Bear_Brown (Grizzly)	Canis lupus X Canis lupus familiaris hybrid	
81		Bear_Grizzly	Capra (Genus)	
82		Bear_Polar	Caracal caracal	
83		Beaver_American	Carduelis flammea	
84		Beaver_Mountain	Carduelis spinus	
85		Binturong	Castor canadensis	
86		Bird (Class Aves)	Cavia porcellus	
87		Bison_American	Caviidae (Family)	
88		Bobcat	Cebus (Genus)	
89		Cacomistle	Cebus apella	
90		Camel (Genus)	Cephalophus (Genus)	
91		Camel_Arabian (Dromedary-One humped)	Ceratotherium simum (organism)	
92		Camel_Bactrian (Two- humped)	Cercopithecus neglectus	
93		Caracal	Cervidae (Family)	
94		Caribou, deer, moose, elk (Family Cervidae)	Cervus elaphus	

	AE	AF	AG	AH
48	Flea (Catallagia charlottensis)	Atyphloceras multidentatus		
49	Flea (Catallagia decipiens)	Atyphloceras tancitari		
50	Flea (Catallagia jellisoni)	Baculomeris altmani		
51	Flea (Catallagia mathesoni)	Baculomeris schmidtii		
52	Flea (Catallagia neweyi)	Callistopsyllus terinus campestris		
53	Flea (Catallagia sculleni rutherfordi)	Callistopsyllus terinus deuterus		
54	Flea (Catallagia sculleni)	Callistopsyllus terinus terinus		
55	Flea (Catallagia sp. (Genus))	Carteretta carteri		
56	Flea (Catallagia wymani)	Carteretta clavata		
57	Flea (Cediopsylla inaequalis interrupta)	Catallagia arizonae		
58	Flea (Cediopsylla inaequalis)	Catallagia borealis		
59	Flea (Cediopsylla simplex)	Catallagia calisherii		
60	Flea (Cediopsylla tepolita)	Catallagia charlottensis		
61	Flea (Ceratophyllus adustus)	Catallagia decipiens		
62	Flea (Ceratophyllus affinis)	Catallagia jellisoni		
63	Flea (Ceratophyllus altus)	Catallagia mathesoni		
64	Flea (Ceratophyllus arcuegens)	Catallagia neweyi		
65	Flea (Ceratophyllus celsus)	Catallagia sculleni		
66	Flea (Ceratophyllus ciliatus)	Catallagia sculleni rutherfordi		
67	Flea (Ceratophyllus coahuilensis)	Catallagia sp. (Genus)		
68	Flea (Ceratophyllus garei)	Catallagia wymani		
69	Flea (Ceratophyllus gilvus)	Cediopsylla inaequalis		
70	Flea (Ceratophyllus idius)	Cediopsylla inaequalis interrupta		
71	Flea (Ceratophyllus lari)	Cediopsylla simplex		
72	Flea (Ceratophyllus lunatus tundrensis)	Cediopsylla tepolita		
73	Flea (Ceratophyllus niger)	Ceratophyllus adustus		
74	Flea (Ceratophyllus pelecani)	Ceratophyllus affinis		
75	Flea (Ceratophyllus petrochelidoni)	Ceratophyllus altus		
76	Flea (Ceratophyllus rauschi)	Ceratophyllus arcuegens		
77	Flea (Ceratophyllus riparius)	Ceratophyllus celsus		
78	Flea (Ceratophyllus rossittensis)	Ceratophyllus ciliatus		
79	Flea (Ceratophyllus scopulorum)	Ceratophyllus coahuilensis		
80	Flea (Ceratophyllus styx)	Ceratophyllus garei		
81	Flea (Ceratophyllus vison)	Ceratophyllus gilvus		
82	Flea (Chaetopsylla floridensis)	Ceratophyllus idius		
83	Flea (Chaetopsylla lotoris)	Ceratophyllus lari		
84	Flea (Chaetopsylla nidicola)	Ceratophyllus lunatus tundrensis		
85	Flea (Chaetopsylla setosa)	Ceratophyllus niger		
86	Flea (Chaetopsylla stewarti)	Ceratophyllus pelecani		
87	Flea (Chaetopsylla tuberculiceps)	Ceratophyllus petrochelidoni		
88	Flea (Conorhinopsylla stanfordi)	Ceratophyllus rauschi		
89	Flea (Coptopsylla lamellifer)	Ceratophyllus riparius		
90	Flea (Corrodopsylla barrerae)	Ceratophyllus rossittensis		
91	Flea (Corrodopsylla curvata)	Ceratophyllus scopulorum		
92	Flea (Corrodopsylla hamiltoni)	Ceratophyllus styx		
93	Flea (Corypsylla jordani)	Ceratophyllus vison		
94	Flea (Corypsylla kohlsi)	Chaetopsylla floridensis		

	AI	AJ	AK	AL
48		Local ID No.		
49		Local/Other Health Department		
50		Manufacturer		
51		Medical Center		
52		Medical Office		
53		Medical Record #		
54		Medical School		
55		Military		
56		NHanes		
57		NIH		
58		Pathology		
59		Patient ID		
60		Patient Initials		
61		Pharmaceutical		
62		PHL		
63		Physician		
64		Primary Sub ID		
65		Proficiency Testing		
66		Project		
67		Regional Health Department		
68		Secondary Sub ID		
69		Serial Sample No.		
70		Serotype		
71		Serotype ID		
72		Serum Bank		
73		Site		
74		SPB Job #		
75		Specimen ID		
76		Specimen No.		
77		State Health Department		
78		Strain ID		
79		Study		
80		Study ID		
81		University		
82		University Medical Center		
83		Unknown		
84		USDA		
85		USDA/APHIS/WS		
86		Vaccine Draw		
87		Vaccines		
88		Veterinary		
89		WHO		
90				
91				
92				
93				
94				

	AM	AN	AO	AP
48			Bat_Long-nosed, Southern	Leptonycteris curasoae
49			Bat_Long-tongued (Genus Choeronycteris)	Choeronycteris (Genus)
50			Bat_Macleay's Moustached	Pteronotus macleayi
51			Bat_Mexican Long-nosed	Leptonycteris nivalis
52			Bat_Mexican Long-tongued	Choeronycteris mexicana
53			Bat_Mexican Myotis	Myotis vivesi
54			Bat_Myotis (Genus Myotis)	Myotis (Genus)
55			Bat_Northern Yellow	Lasiurus intermedius
56			Bat_Pallid (Desert)	Antrozous pallidus
57			Bat_Parnell's Moustached	Pteronotus parnelli
58			Bat_Pocketed Free-tailed	Nyctinomops femorosaccus
59			Bat_Rodriguez Flying Fox	Pteropus rodricensis
60			Bat_Seminole	Lasiurus seminolus
61			Bat_Silver-haired	Lasionycteris noctivagans
62			Bat_Sooty Moustached	Pteronotus quadridens
63			Bat_Southeastern Myotis	Myotis austroriparius
64			Bat_Southern Yellow	Lasiurus ega
65			Bat_Southwestern Myotis	Myotis auriculus
66			Bat_Spear-nosed (Genus Phyllostomus)	Phyllostomus (Genus)
67			Bat_Spear-nosed, Greater	Phyllostomus hastatus
68			Bat_Spotted	Euderma maculatum
69			Bat_Townsend's Big-eared	Plecotus townsendii
70			Bat_Underwoods Mastiff	Eumops underwoodi
71			Bat_Vampire	Desmodus rotundus
72			Bat_Wagner's Mastiff	Eumops glacinus
73			Bat_Waterhouses Leaf-nosed	Macrotus waterhousii
74			Bat_Western Mastiff	Eumops perotis
75			Bat_Western Pipistrelle	Pipistrellus hesperus
76			Bat_Western Red	Lasiurus blossevillii
77			Bat_Western Small Footed	Myotis ciliolabrum
78			Bat_Yuma Myotis	Myotis yumanensis
79			Bear (Genus Ursus)	Ursus (Genus)
80			Bear_Black	Ursus americanus
81			Bear_Brown (Grizzly)	Ursus arctos
82			Bear_Grizzly	Ursus arctos subbsp horribilis
83			Bear_Polar	Ursus maritimus
84			Beaver_American	Castor canadensis
85			Beaver_Mountain	Aplodontia rufa
86			Binturong	Arctictis binturong
87			Bird (Class Aves)	Aves (Class)
88			Bison_American	Bison bison
89			Black fly (Family Simuliidae)	Family Simuliidae
90			Black fly (Simulium nigricoxum)	Simulium nigricoxum
91			Blow fly	[Blow fly]
92			Bobcat	Lynx rufus
93			Bot fly (Family Oestridae)	Family Oestridae
94			Cacomistle	Bassariscus sumichrasti

	AQ	AR	AS	AT	AU	AV
48		C , 14		Amaradix bitterrootensis		
49		C , 15		Amaradix euphorbi		
50		D , 1		Amblyomma americanum		
51		D , 2		Amblyomma dubitatum		
52		D , 3		Amblyomma imitator		
53		D , 4		Amblyomma inornatum		
54		D , 5		Amblyomma interandinum		
55		D , 6		Amblyomma maculatum		
56		D , 7		Amblyomma mixtum		
57		D , 8		Amblyomma ovale		
58		D , 9		Amblyomma patinoi		
59		D , 10		Amblyomma sculptum		
60		D , 11		Amblyomma spp.		
61		D , 12		Amblyomma tonelliae		
62		D , 13		Amblyomma triste		
63		D , 14		Amblyomma tuberculatum		
64		D , 15		Amblyomma variegatum		
65		E , 1		Ammospermophilus harrisi		
66		E , 2		Ammospermophilus insularis		
67		E , 3		Ammospermophilus interpres		
68		E , 4		Ammospermophilus leucurus		
69		E , 5		Ammospermophilus nelsoni		
70		E , 6		Amphibia (Class)		
71		E , 7		Amphipsylla sibirica		
72		E , 8		Amphipsylla sibirica pollionis		
73		E , 9		Amphipsylla sibirica washingtona		
74		E , 10		Anomiopsyllus amphilbolus		
75		E , 11		Anomiopsyllus durangoensis		
76		E , 12		Anomiopsyllus falsicalifornicus		
77		E , 13		Anomiopsyllus martini		
78		E , 14		Anomiopsyllus montanus		
79		E , 15		Anomiopsyllus nidiophilus		
80		F , 1		Anomiopsyllus novomexicanensis		
81		F , 2		Anomiopsyllus nudatus		
82		F , 3		Anomiopsyllus oaxacae		
83		F , 4		Anomiopsyllus sinuatus		
84		F , 5		Anomiopsyllus sp (Genus)		
85		F , 6		Anomiopsyllus traubi		
86		F , 7		Anomiopsyllus walkeri		
87		F , 8		Antilocapra americana		
88		F , 9		Antrozous pallidus		
89		F , 10		Aotus (Genus)		
90		F , 11		Aplodontia rufa		
91		F , 12		Ara (Genus)		
92		F , 13		Arborimus albipes		
93		F , 14		Arborimus longicaudus		
94		F , 15		Arctictis binturong		

	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG
48		mg/dl	FL Bureau of Public Health Laboratories-Pensacola								
49		mg/g	FL Bureau of Public Health Laboratories-Tampa								
50		mg/inch	FL Department of Health-Bureau of Epidemiology								
51		mg/kg	FRA-Institut Pasteur, Enteric Bacterial Pathogens Unit								
52		mg/L	GA Department of Public Health Laboratory								
53		mg/mL	HI Dept. of Health, State Laboratories Division								
54		mg/Tab	HTI-Laboratoire National de Sante Publique								
55		mg/yr	IA State Hygienic Laboratory								
56		microg/dl	IA-Natl Ctrs. for Animal Hlth, Nat. Vet Svcs. Lab								
57		Microg/fts	ID Bureau of Laboratories								
58		microg/L	IL Department of Public Health Chicago Laboratory								
59		min	IL Dept. of Public Health Carbondale Laboratory								
60		mL	IL Dept. of Public Health Springfield Laboratory								
61		mm	IN State Department of Health Laboratory Services								
62		MPN/100mL	KS Health and Environmental Laboratories								
63		N/A	KY State Public Health Lab								
64		newtest	LA Office of Public Health Laboratories								
65		nM/mg crea	MA State Public Health Laboratory								
66		No Units	MA-Tufts Medical Center, Send-out Department								
67		NTU	MD DOH Laboratories Administration								
68		PD	ME Health and Environmental Testing Laboratory								
69		pg/cell	MI Dept. of Community Health-Bureau of Laboratories								
70		pH	MN PHL Division, Minnesota Department of Health								
71		pint	MO State Public Health Laboratory								
72		ppb	MS Public Health Laboratory								
73		ppm	MT Public Health Laboratory								
74		ppt	NC State Laboratory of Public Health								
75		PSI	ND Dept. of Health Laboratory Services-Microbiology								
76		quart	NE Public Health Laboratory								
77		RNA/ml	NGA-Nigeria Centre For Disease Control								
78		sec	NH Dept. of Health and Human Services Public Health Labs								
79		Spots(s)	NIH Clinical Center, Dept. of Laboratory Medicine								
80		u/g	NJ Public Health and Environmental Laboratories								
81		U/L	NM Dept. Health, Scientific Laboratory Division								
82		U/mg	NV State Public Health Laboratory								
83		ug/dl	NV-Southern Nevada Health Dist. Office of Epidemiology								
84		ug/kg	NV-Southern Nevada Public Health Laboratory								
85		ug/L	NYC Department of Health and Mental Hygiene								
86		UIU/ml	NY-Jacobi Med. Ctr.-Parasitic and Trop. Disease Lab								
87		uL	NYSDOH Wadsworth Center								
88		um	NYSDOH Wadsworth Center, Bacteriology Lab								
89		umhos/cm	NYSDOH Wadsworth Center, Biodefense Lab								
90		umol/L	NYSDOH Wadsworth Center, Bloodborne Virus Lab								
91		Unit	NYSDOH Wadsworth Center, Diag. Immunology Lab								
92		Units	NYSDOH Wadsworth Center, Mycology Lab								
93		yr	NYSDOH Wadsworth Center, Parasitology Lab								
94			NYSDOH Wadsworth Center, Tuberculosis Lab								

	A	B	C
95		Echinococcosis Serology	Blastococcus species
96		Ehrlichia Molecular Detection	Blastocystis species
97		Ehrlichia Serology	Blastomyces dermatitidis
98		Ehrlichia Special Study	Blastomyces species
99		Elizabethkingia species Special Study	Bordetella avium
100		Entamoeba histolytica/dispar Molecular Detection	Bordetella bronchiseptica
101		Enteric Isolation - Primary Specimen	Bordetella holmesii
102		Enteric Special Study	Bordetella parapertussis
103		Enterovirus Detection and Identification	Bordetella pertussis
104		Enterovirus-D68 Detection	Bordetella species
105		Entomology Special Study	Borrelia burgdorferi
106		Epstein Barr Virus (EBV) Detection	Borrelia hermsii
107		Escherichia and Shigella Identification, Serotyping, and Virulence Profiling	Borrelia recurrentis
108		Escherichia and Shigella study	Borrelia species
109		Escherichia coli (STEC) Serology (not serotyping)	Bosea species
110		Escherichia coli and Shigella Subtyping	Botryomyces caespitosus
111		Fascioliasis Serology	Bovine papular stomatitis virus
112		Filariasis Serology	Brachyspira species
113		Francisella tularensis Culture and Identification	Brevibacterium species
114		Francisella tularensis Serology	Brochothrix thermosphacta
115		Francisella tularensis Special Study	Brucella abortus
116		Fungal Identification	Brucella melitensis
117		Fungal Serology - Histoplasma, Blastomyces, Coccidioides	Brucella species
118		Fungal Serology - Paracoccidioides	Brucella suis
119		Fungal Study	Brugia malayi
120		Gastroenteritis Virus Special Study	Brugia species
121		Genital Ulcer Disease (Syphilis, Chancroid, Herpes) Molecular Detection	Burkholderia cenocepacia
122		Gram Negative Bacillus (non-enteric/nonfermenter) Identification	Burkholderia cepacia
123		Gram Positive Bacillus Identification	Burkholderia cepacia complex
124		Gram-negative Coccus (not Gonococcus or meningococcus), Neisseria species, and	Burkholderia gladioli
125		Haemophilus ducreyi Molecular Detection Study	Burkholderia mallei
126		Haemophilus influenzae Identification and Serotyping	Burkholderia pseudomallei
127		Haemophilus influenzae Surveillance	Burkholderia species
128		Haemophilus species (not H. influenza/ H. ducrey) Identification	Burkholderia stabilis
129		Hantavirus Testing	Burkholderia thailandensis
130		Healthcare-Associated Infections (HAI) - Outbreak Strain Identification (ID) and	Buttiauxella agrestis
131		Helicobacter pylori Special Study	Campylobacter coli
132		Hendra Hemorrhagic Fever Serology and Molecular Detection	Campylobacter fetus
133		Hepatitis A NAT and Genotyping	Campylobacter gracilis
134		Hepatitis A Serology	Campylobacter helveticus
135		Hepatitis B Genotyping	Campylobacter insulaenigrae
136		Hepatitis B Serology and Quantitative PCR	Campylobacter jejuni
137		Hepatitis C Serology, Quantitative PCR, and Genotyping	Campylobacter jejuni subsp jejuni
138		Hepatitis D Serology, NAT and Genotyping	Campylobacter species
139		Hepatitis E Serology, NAT and Genotyping	Campylobacter upsaliensis
140		Hepatitis Special Study	Candida albicans
141		Hepatitis Surveillance	Candida auris
142		Herpes Simplex Virus 1/2 Detection	Candida dubliniensis

WA KINGCO-20-0492-G-000211

	D	E	F	G	H	I	J
95				Guillain-Barre syndrome			
96				Hemolytic Uremic Syndrome (HUS)			
97				Hepatic abscess			
98				Hepatic cyst			
99				Hepatomegaly			
100				Herpangina			
101				Histoplasmosis			
102				Human Immunodeficiency Virus (HIV) infection			
103				Human T-Lymphotropic Virus (HTLV) infection			
104				Hydrops fetalis			
105				Hypertension			
106				Immunocompromised host disease			
107				Impetigo			
108				Infantile botulism			
109				Infectious mononucleosis			
110				Influenza			
111				Influenza - Avian H5N1			
112				Influenza - Novel H1N1			
113				Influenza A infection			
114				Influenza B infection			
115				Joint pain			
116				Kawasaki disease syndrome			
117				Kennel Cough			
118				Laryngitis			
119				Leishmaniasis			
120				Leprosy			
121				Listeriosis			
122				Lockjaw			
123				Louse-borne relapsing fever			
124				Lower respiratory illness			
125				Lyme disease			
126				Lymphadenopathy			
127				Lymphogranuloma venereum			
128				Malaria			
129				Malnutrition			
130				Measles			
131				Mediterranean Spotted Fever			
132				Melioidosis			
133				Meningitis			
134				Meningococcemia			
135				Molluscum contagiosum			
136				Mucormycosis			
137				Mumps			
138				Mycetoma			
139				Mycoses			
140				Myocarditis			
141				Neurologic disease			
142				Neurosyphilis			

	K	L	M	N
95	Fluid_Vitreous Humor	Nasopharyngeal (Throat) washings	Soil	
96	Fly	Nasopharyngeal and Oropharyngeal Swab	Solution_Contact lens	
97	Food	Nasopharyngeal aspirate	Solution_Disinfectant	
98	Foreign object (body)	Nasopharyngeal swab	Soup	
99	Formalin-fixed paraffin-embedded tissue	Nodule	Spice	
100	Formula, Infant	Oral swab	Spice, Peppers	
101	Formula, Infant_ Liquid	Papule	Spread	
102	Formula, Infant_Powdered	Peripheral Blood Mononuclear Cell	Spread, Peanut butter	
103	Formula, Infant_Soy	Peritoneal dialysate	Stew	
104	Fruit, Papaya	Peritoneal dialysis solution	Stool Suspension	
105	Gastric contents	Pernasal swab (Animal)	Surface wet wipe	
106	Graft specimen from patient	Pharyngeal (Throat) washings	Surface Wipe	
107	Grain	Plasma	Swab	
108	Grain, Bread	Plasmid	Swab_Drag	
109	Grain, Cereal	Pus	Synthetic	
110	Grain, Rice	Rectal swab	TNA-Nucleic acid (Total)	
111	Granulocyte	Red Blood Cell	Tubing	
112	Hair specimen	Reference Strain	Unknown	
113	Head	RNA-Ribonucleic acid	Unknown drink	
114	HEPA-sock	Saliva	Unknown food	
115	Honey	Semen	Vacuum cleaner bag	
116	Incision Site	Serum specimen	Vacuum cleaner filter	
117	Internal nose swab	Sinus	Vegetable	
118	Isolate	Skin swab	Vegetable, Beans	
119	IV Medications	Skin_Pustule	Vegetable, Cabbage	
120	IV Tubing	Skin_Vesicle	Vegetable, Lettuce	
121	Jelly	Smear	Vegetable, Spinach	
122	Juice	Specimen from burn injury	Vegetable, Sprouts	
123	Juice, Apple	Spleen specimen	Vegetable, Sprouts_Alfalfa	
124	Juice, Carrot	Sputum	Vegetable, Tomato	
125	Juice, Vegetable	Sputum_coughed	Wash_Fluid	
126	Lavage cervical supernatant	Sputum_induced	Wash_Carcass	
127	Lavage_cervical	Stool	Wastewater	
128	Lavage_rectal	Stool Suspension	Water (environmental sample)	
129	Lesion	Swab	Water Concentrate	
130	Louse	Sweat	Water_Aquarium	
131	Lymph Node	Synthetic	Water_Canal	
132	Lymph Node aspirate	Throat (Oropharyngeal) swab	Water_Irrigation	
133	Macule	Tick	Water_Irrigation pond	
134	Meat	Tissue	Water_Lake	
135	Meat, Bear	Tissue_Abscess	Water_Pond	
136	Meat, Beef	Tissue_Adipose	Water_Pool Filter Backwash	
137	Meat, Beef, Ground_cooked	Tissue_Brain	Water_Purified	
138	Meat, Beef, Ground_raw	Tissue_Cyst	Water_River	
139	Meat, Chicken	Tissue_Endometrium	Water_Run-off	
140	Meat, Ham	Tissue_Heart	Water_Swimming pool	
141	Meat, Pork	Tissue_Kidney	Water_Tap	
142	Meat, Sausage	Tissue_Liver	Water_Well	

WA KINGCO 20-0492-G-000213

	O	P	Q
95	Ear_Middle		
96	Elbow		
97	Endocardium		
98	Endometrium		
99	Environment		
100	Epidural space		
101	Epiglottis		
102	Esophagus		
103	Eye		
104	Eye_Orbit		
105	Eye_Vitreous body		
106	Eyebrow		
107	Eyelid		
108	Face		
109	Fallopian tube		
110	Fetus		
111	Finger		
112	Finger_Index		
113	Finger_Little		
114	Finger_Middle (Second)		
115	Finger_Ring (Third)		
116	Fingernail		
117	Flank		
118	Foot		
119	Foot_Sole		
120	Forehead		
121	Foreskin of penis		
122	Gallbladder		
123	Glabella		
124	Gland_Adrenal		
125	Gland_Parotid		
126	Gland_Salivary		
127	Gland_Submandibular salivary		
128	Groin		
129	Hand		
130	Head		
131	Heart		
132	Heart_Mitral valve leaflet		
133	Heel		
134	Hip region		
135	Hippocampus		
136	Ileocecal valve		
137	Ileum		
138	Iliac crest		
139	Inguinal lymph node		
140	Interventricular septum		
141	Intervertebral disc		
142	Intestine (Bowel)		

	T	U	V
95	Sabouraud dextrose agar + Gentamicin+Chloramphenicol		
96	Sabouraud dextrose agar, Emmons + Gentamicin+Chloramphenicol		
97	Sabouraud' s Dextrose agar + Chloramphenicol+Cyclohexamine		
98	Sabouraud' s Dextrose agar, Emmons + Chloramphenicol+Cyclohexamine		
99	Saline_Normal		
100	Silica Clot Activator		
101	Snap Frozen		
102	Sodium Acetate Formalin (SAF) Fixative		
103	Sodium Azide		
104	Sodium benzoate_ calcium propionate		
105	Sodium Citrate		
106	Sodium fluoride		
107	Sodium fluoride/Na2 EDTA		
108	Sodium polyanethol sulfonate (SPS)		
109	Sodium thiosulfate		
110	Specimen Transport Medium (STM)		
111	Streck Cell Preservative		
112	Stuart's Transport Medium		
113	SurePath		
114	Thioglycolate broth		
115	Thrombin-based clot activator		
116	Tissue culture_MDCK		
117	Tissue Culture_R-Mix		
118	Total-Fix transport vial		
119	Tryptic Soy Broth (TSB)		
120	Trypticase Soy Agar (TSA)		
121	Tryptone glucose yeast extract (TGY) agar		
122	Universal transport medium		
123	Unknown		
124	Veal agar		
125	Venketraman-Ramakrishnan Transport Medium		
126	VersaTREK Broth		
127	VersaTREK Myco		
128	Viral Transport Medium (VTM)		
129	Wang's Semisolid Medium		
130			
131			
132			
133			
134			
135			
136			
137			
138			
139			
140			
141			
142			



	W	X	Y	Z
95		Guernsey	Plasmapheresis	
96		Guinea	Polymyxin B	
97		Guinea-Bissau	Polymyxins	
98		Guyana	Pyrazinamide	
99		Haiti	Pyridostigmine	
100		Heard Island and McDonald Islands	Ribavirin	
101		Holy See (Vatican City State)	Rifampin	
102		Honduras	Rimantadine	
103		Hong Kong	Rosoxacin	
104		Hungary	Sisomicin	
105		Iceland	Spectinomycin	
106		India	Streptomycin	
107		Indonesia	Sulbactam	
108		Iran, Islamic Republic of	Sulfadiazine	
109		Iraq	Sulfamethoxazole	
110		Ireland	Sulfisoxazole	
111		Isle of Man	Sulfonamide	
112		Israel	Sulphathiazole	
113		Italy	Tetracycline	
114		Jamaica	Thiamphenicol - chemical	
115		Japan	Ticarcillin	
116		Jersey	Tobramycin	
117		Jordan	Trifluridine	
118		Kazakhstan	Trimethoprim	
119		Kenya	Unknown	
120		Kiribati	Valacyclovir	
121		Korea, Democratic People's Republic of	Vancomycin	
122		Korea, Republic of	Viomycin	
123		Kuwait	Zanamivir (Relenza)	
124		Kyrgyzstan		
125		Lao Peoples Democratic Republic		
126		Latvia		
127		Lebanon		
128		Lesotho		
129		Liberia		
130		Libyan Arab Jamahiriya		
131		Liechtenstein		
132		Lithuania		
133		Luxembourg		
134		Macao		
135		Macedonia, The Former Yugoslav Republic of		
136		Madagascar		
137		Malawi		
138		Malaysia		
139		Maldives		
140		Mali		
141		Malta		
142		Marshall Islands		

	AA	AB	AC	AD
95		Cat_Domestic	Cervus elaphus subsp nannodes	
96		Cat_Little spotted (Oncilla)	Cervus nippon	
97		Cat_Ring-tailed	Chaetodipus arenarius	
98		Cat_Wild (Montes de gato)	Chaetodipus artus	
99		Cattle	Chaetodipus baileyi	
100		Cavy (Family)	Chaetodipus californicus	
101		Cavy_Rock	Chaetodipus fallax	
102		Cavy_Spix's Yellow-toothed	Chaetodipus formosus	
103		Cheetah	Chaetodipus goldmani	
104		Chicken	Chaetodipus hispidus	
105		Chimpanzee (Genus Pan)	Chaetodipus intermedius	
106		Chinchilla	Chaetodipus lineatus	
107		Chipmunk (Genus Tamias)	Chaetodipus nelsoni	
108		Chipmunk_Alpine	Chaetodipus penicillatus	
109		Chipmunk_Buller's	Chaetodipus pernix	
110		Chipmunk_California (Allen's)	Chaetodipus spinatus	
111		Chipmunk_Cliff	Chamaeleonidae (Family)	
112		Chipmunk_Colorado	Chelydra serpentina	
113		Chipmunk_Eastern American	Chinchilla lanigera	
114		Chipmunk_Grey-collared	Chiroptera (Order)	
115		Chipmunk_Hopi	Chlamydosaurus kingii	
116		Chipmunk_Least	Choeronycteris (Genus)	
117		Chipmunk_Lodgepole	Choeronycteris mexicana	
118		Chipmunk_Long-eared (Tahoe)	Clethrionomys (Genus)	
119		Chipmunk_Merriam's	Clethrionomys gapperi	
120		Chipmunk_Palmer's	Clethrionomys gapperi subsp occidentalis	
121		Chipmunk_Panamint	Clethrionomys glariolus	
122		Chipmunk_Red-tailed	Clethrionomys rutilus	
123		Chipmunk_Sonoma	Conepatus leuconotus	
124		Chipmunk_Townsend's	Connochaetes (Genus)	
125		Chipmunk_Uinta	Connochaetes taurinus	
126		Chipmunk_Yellow-pine	Corvus (Genus)	
127		Coati (Genus Nasua)	Cricetulus (Genus)	
128		Coati_White-nosed	Cricetus cricetus	
129		Coatimundi (Coati)	Crotalus dirissus subsp unicolor	
130		Cougar (Mt Lion or Puma)	Crotalus tigris	
131		Coyote	Cryptotis parva	
132		Coyote-Dog hybrid (Generic name)	Cynomys (Genus)	
133		Crow (Genus Corvis)	Cynomys gunnisoni	
134		Deer (Generic name)	Cynomys leucurus	
135		Deer_Columbian Black-tailed	Cynomys ludovicianus	
136		Deer_Fallow	Cynomys mexicanus	
137		Deer_Mule	Cynomys parvidens	
138		Deer_Sika	Dama dama	
139		Deer_White-tailed	Dasypus novemcinctus	
140		Dog_Domestic	Desmodus rotundus	
141		Donkey (Generic name)	Diceros bicornis	
142		Duck (Generic name)	Didelphis virginiana	

WA KINGCO-20-0492-G-000217

	AE	AF	AG	AH
95	Flea (Corypsylla ornata)	Chaetopsylla lotoris		
96	Flea (Ctenocephalides canis)	Chaetopsylla nidicola		
97	Flea (Ctenocephalides felis)	Chaetopsylla setosa		
98	Flea (Ctenophthalmus cabelleri)	Chaetopsylla stewarti		
99	Flea (Ctenophthalmus cryptotis)	Chaetopsylla tuberculaticeps		
100	Flea (Ctenophthalmus expansis)	Class Arachnida		
101	Flea (Ctenophthalmus haagi)	Class Diplopoda		
102	Flea (Ctenophthalmus myodosus)	Conorhinopsylla stanfordi		
103	Flea (Ctenophthalmus pseudagyrtis)	Coptopsylla lamellifer		
104	Flea (Ctenophthalmus sanborni)	Corrodopsylla barrerae		
105	Flea (Ctenophyllus armatus)	Corrodopsylla curvata		
106	Flea (Dactylopsylla bluei)	Corrodopsylla hamiltoni		
107	Flea (Dactylopsylla digitenua)	Corypsylla jordani		
108	Flea (Dactylopsylla megasoma)	Corypsylla kohlsi		
109	Flea (Dactylopsylla neomexicana)	Corypsylla ornata		
110	Flea (Dactylopsylla pentachaeta)	Ctenocephalides canis		
111	Flea (Dactylopsylla percernis)	Ctenocephalides felis		
112	Flea (Delotelis hollandi)	Ctenophthalmus cabelleri		
113	Flea (Delotelis telegoni)	Ctenophthalmus cryptotis		
114	Flea (Diamanus montanus)	Ctenophthalmus expansis		
115	Flea (Dinopsyllus (Opisocrostis) hirsutus)	Ctenophthalmus haagi		
116	Flea (Dolichopsyllus stylosus)	Ctenophthalmus myodosus		
117	Flea (Doratopsylla blarinae)	Ctenophthalmus pseudagyrtis		
118	Flea (Doratopsylla wisemanni)	Ctenophthalmus sanborni		
119	Flea (Echidnophaga (Amphalius) runatus)	Ctenophyllus armatus		
120	Flea (Echidnophaga gallinacea)	Dactylopsylla bluei		
121	Flea (Epitedia cavernicola)	Dactylopsylla digitenua		
122	Flea (Epitedia faceta)	Dactylopsylla megasoma		
123	Flea (Epitedia neotomae)	Dactylopsylla neomexicana		
124	Flea (Epitedia scapani)	Dactylopsylla pentachaeta		
125	Flea (Epitedia stanfordi)	Dactylopsylla percernis		
126	Flea (Epitedia stewarti)	Delotelis hollandi		
127	Flea (Epitedia wenmanni)	Delotelis telegoni		
128	Flea (Euhoplopsyllus glacialis affinis)	Dermacentor albipictus		
129	Flea (Euhoplopsyllus glacialis foxi)	Dermacentor andersoni		
130	Flea (Euhoplopsyllus glacialis glacialis)	Dermacentor hunteri		
131	Flea (Euhoplopsyllus glacialis lynx)	Dermacentor marginatus		
132	Flea (Euhoplopsyllus glacialis)	Dermacentor nitens		
133	Flea (Eumolpianus (Ceratophyllus) ciliatus)	Dermacentor occidentalis		
134	Flea (Eumolpianus cyrturus)	Dermacentor parumapertus		
135	Flea (Eumolpianus eumolpi)	Dermacentor reticulatus		
136	Flea (Eumolpianus eutamiadis)	Dermacentor spp.		
137	Flea (Eumolpianus fornacis)	Dermacentor variabilis		
138	Flea (Eumolpianus oraius)	Diamanus montanus		
139	Flea (Eumolpianus polumus)	Dinopsyllus (Opisocrostis) hirsutus		
140	Flea (Foxella ignota)	Dolichopsyllus stylosus		
141	Flea (Geusibia ashcrafti)	Doratopsylla blarinae		
142	Flea (Haemaphysalis leporispalustris)	Doratopsylla wisemanni		

	AM	AN	AO	AP
95			Camel (Genus)	Camelus (Genus)
96			Camel_Arabian (Dromedary-One humped)	Camelus dromedarius
97			Camel_Bactrian (Two- humped)	Camelus bactrianus
98			Caracal	Caracal caracal
99			Caribou, deer, moose, elk (Family Cervidae)	Cervidae (Family)
100			Cat_Domestic	Felis catus
101			Cat_Little spotted (Oncilla)	Leopardus tigrinus
102			Cat_Ring-tailed	Bassariscus astutus
103			Cat_Wild (Montes de gato)	Felis silvestris
104			Cattle	Bos taurus
105			Cavy (Family)	Caviidae (Family)
106			Cavy_Rock	Kerodon rupestris
107			Cavy_Spix's Yellow-toothed	Galea spixii
108			Cheetah	Acinonyx jubatus
109			Chicken	Gallus gallus
110			Chimpanzee (Genus Pan)	Pan (Genus)
111			Chinchilla	Chinchilla lanigera
112			Chipmunk (Genus Tamias)	Tamias (Genus)
113			Chipmunk_Alpine	Tamias alpinus
114			Chipmunk_Buller's	Tamias bulleri
115			Chipmunk_California (Allen's)	Tamias senex
116			Chipmunk_Cliff	Tamias dorsalis
117			Chipmunk_Colorado	Tamias quadrivittatus
118			Chipmunk_Eastern American	Tamias striatus
119			Chipmunk_Grey-collared	Tamias cinereicollis
120			Chipmunk_Hopi	Tamias rufus
121			Chipmunk_Least	Tamias minimus
122			Chipmunk_Lodgepole	Tamias speciosus
123			Chipmunk_Long-eared (Tahoe)	Tamias quadrimaculatus
124			Chipmunk_Merriam's	Tamias merriami
125			Chipmunk_Palmer's	Tamias palmeri
126			Chipmunk_Panamint	Tamias panamintinus
127			Chipmunk_Red-tailed	Tamias ruficaudus
128			Chipmunk_Sonoma	Tamias sonomae
129			Chipmunk_Townsend's	Tamias townsendii
130			Chipmunk_Uinta	Tamias umbrinus
131			Chipmunk_Yellow-pine	Tamias amoenus
132			Coati (Genus Nasua)	Nasua (Genus)
133			Coati_White-nosed	Nasua narica
134			Coatimundi (Coati)	Nasua nasua
135			Cougar (Mt Lion or Puma)	Puma concolor
136			Coyote	Canis latrans
137			Coyote-Dog hybrid (Generic name)	[Coyote-dog hybrid]
138			Crow (Genus Corvis)	Corvus (Genus)
139			Crustacean (Subphylum Crustacea)	Subphylum Crustacea
140			Deer (Generic name)	[Deer]
141			Deer fly (Genus Chrysops)	Genus Chrysops
142			Deer_Columbian Black-tailed	Odocoileus hemionus subsp. columbianus

WA KINGCO-20-0492-C-000219

	AQ	AR	AS	AT	AU	AV
95		G , 1		Artibeus jamaicensis		
96		G , 2		Arvicola terrestris		
97		G , 3		Atelerix albiventris		
98		G , 4		Atheropsylla cochisei		
99		G , 5		Atyphloceras bishopi		
100		G , 6		Atyphloceras echis		
101		G , 7		Atyphloceras multidentatus		
102		G , 8		Atyphloceras tancitari		
103		G , 9		Aves (Class)		
104		G , 10		Baculomeris altmani		
105		G , 11		Baculomeris schmidtii		
106		G , 12		Bandicota bengalensis		
107		G , 13		Bassariscus astutus		
108		G , 14		Bassariscus sumichrasti		
109		G , 15		Bison bison		
110		H , 1		Blarina (Genus)		
111		H , 2		Boa constrictor subsp constrictor		
112		H , 3		Bolomys lasiurus		
113		H , 4		Bos (Genus)		
114		H , 5		Bos taurus		
115		H , 6		Brachylagus idahoensis		
116		H , 7		Bubo virginianus		
117		H , 8		Callistopsyllus terinus campestris		
118		H , 9		Callistopsyllus terinus deuterus		
119		H , 10		Callistopsyllus terinus terinus		
120		H , 11		Callithrix (Genus)		
121		H , 12		Callithrix kuhlii		
122		H , 13		Camelus (Genus)		
123		H , 14		Camelus bactrianus		
124		H , 15		Camelus dromedarius		
125		I , 1		Canis latrans		
126		I , 2		Canis lupus		
127		I , 3		Canis lupus subsp familiaris		
128		I , 4		Canis lupus subsp rufus		
129		I , 5		Canis lupus X Canis lupus familiaris hybrid		
130		I , 6		Capra (Genus)		
131		I , 7		Caracal caracal		
132		I , 8		Carduelis flammea		
133		I , 9		Carduelis spinus		
134		I , 10		Carteretta carteri		
135		I , 11		Carteretta clavata		
136		I , 12		Castor canadensis		
137		I , 13		Catallagia arizonae		
138		I , 14		Catallagia borealis		
139		I , 15		Catallagia calisherii		
140		J , 1		Catallagia charlottensis		
141		J , 2		Catallagia decipiens		
142		J , 3		Catallagia jellisoni		

	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG
95			NYSDOH Wadsworth Center, Virology Lab								
96			OH - Wright Patterson AFB HIV CLIA Activity								
97			OH Department of Health Laboratory								
98			OH-Cincinnati Childrens Hospital Medical Center								
99			OH-Wright-Patterson AFB								
100			OK Public Health Laboratory, Oklahoma State DOH								
101			OR State PHL-General Microbiology Section								
102			OR State PHL-Virology/Immunology Section								
103			PA Department of Health, Bureau of Laboratories								
104			PER-NAMRU-6								
105			PR - Biological and Chemical Emergencies Lab Office of Public Health Preparedness and Response								
106			PR Public Health Lab								
107			RI State Health Laboratories								
108			SC Dept of Health and Env. Control-Bureau of Laboratories								
109			SD Public Health Laboratory								
110			TN Division of Laboratory Services								
111			TTO-The Caribbean Public Health Agency (CARPHA)								
112			TX Brooke Army Medical Center								
113			TX DSHS, Lab Services Section MC 1947								
114			TX DSHS, Zoonosis Control Branch								
115			TX-Houston Health Department Laboratory								
116			University of Minnesota								
117			USDA ARS WRRRC, Produce Safety and MicroBio Research								
118			USDA/FSIS/OPHS/EL/MCB								
119			UT-Unified State Labs: Public Health Utah DOH								
120			VA-Division of Consolidated Laboratory Services								
121			VI-US Virgin Islands Department of Health								
122			VT Dept. of Health Laboratory								
123			WA State Department of Health								
124			WHO/NICD, External Quality Assessment Reference Unit								
125			WI State Laboratory of Hygiene								
126			WVDHHR - Office of Laboratory Services								
127			WY Public Health Laboratory								
128											
129											
130											
131											
132											
133											
134											
135											
136											
137											
138											
139											
140											
141											
142											

	A	B	C
143		Herpes Simplex Virus 1/2 Serology	Candida famata
144		Herpesvirus Encephalitis Panel	Candida glabrata
145		HIV Molecular Surveillance Study (International Only)	Candida guilliermondii
146		HIV Special Study	Candida krusei
147		HIV-1 Genotype Drug Resistance (International Only)	Candida lusitanae
148		HIV-1 Laboratory Algorithm for Dried Blood Spots (DBS)	Candida magnoliae
149		HIV-1 Nucleic Acid Amplification (Qualitative)	Candida parapsilosis
150		HIV-1 PCR (International Only) Qualitative	Candida pseudotropicalis
151		HIV-1 PCR (International Only) Quantitative Viral Load	Candida rugosa
152		HIV-1/2 Antibody (International Only) Rapid Test	Candida species
153		HIV-1/2 Laboratory Algorithm	Candida stellatoidea
154		HIV-1/2 Serology Diagnostic Algorithm (International Only)	Candida tropicalis
155		HIV-2 Nucleic Acid Amplification (Qualitative)	Capnocytophaga species
156		HIV-2 Serology	Capnocytophaga sputigena
157		Human Herpesvirus 6 Detection and Subtyping	Cardiobacterium hominis
158		Human Herpesvirus 6 Serology	Cardiobacterium species
159		Human Herpesvirus 7 Detection	Cardiovirus
160		Human Herpesvirus 8 Detection	Cardiovirus A
161		Human Herpesvirus 8 Serology	Cellulomonas species
162		Human Immunodeficiency Virus Type 1 (HIV-1) Nucleic Acid Testing and Sequencing	Cestode
163		Human Papillomavirus (HPV) Special Study	Chikungunya
164		Influenza Antiviral Resistance Diagnosis	Chitinophaga pinensis
165		Influenza Molecular Diagnosis	Chlamydia species
166		Influenza Serology	Chlamydia trachomatis
167		Influenza Special Study	Chlamydomydia pneumoniae
168		Influenza Surveillance	Chlamydomydia psittaci
169		Junin Hemorrhagic Fever Serology and Molecular Detection	Chlamydomydia species
170		Kyasanur Forest Disease Testing	Chromobacterium species
171		Laguna Hemorrhagic Fever Serology and Molecular Detection	Chromobacterium violaceum
172		Lassa Fever Testing	Chryseobacterium indologenes
173		Legionella species Detection and Identification	Chryseobacterium species
174		Legionella species Molecular Subtyping	Chrysosporium (Emmonsia) species
175		Leishmania species Identification	Citrobacter amalonaticus
176		Leishmaniasis Serology	Citrobacter braakii
177		Leptospira species Identification and Genotyping	Citrobacter farmeri
178		Leptospira species Molecular Detection	Citrobacter freundii
179		Leptospira species Serology	Citrobacter koseri
180		Leptospira species Study	Citrobacter species
181		Listeria Identification	Citrobacter youngae
182		Listeria monocytogenes Identification and Subtyping	Cladophialophora bantiana
183		Listeria Study	Cladophialophora species
184		LRN Biothreat Multi-Agent Screening-Environmental	Cladosporium species
185		Lymphocytic Choriomeningitis (LCM) Testing	Clonorchis sinensis
186		Machupo Hemorrhagic Fever Serology and Molecular Detection	Clonorchis species
187		Malaria Drug Resistance Surveillance	Clostridioides difficile
188		Malaria Molecular Identification	Clostridium botulinum
189		Malaria Serology	Clostridium botulinum group II
190		Malaria: Morphologic Identification	Clostridium butyricum

WA-KINGCO-20-0492-G-000222

	D	E	F	G	H	I	J
143				Nocardiosis			
144				Nosocomial infection			
145				Osteomyelitis			
146				Otitis media			
147				Paracoccidioidomycosis			
148				Paragonimiasis			
149				Paratyphoid fever			
150				Pelvic inflammatory disease			
151				Pertussis syndrome			
152				Phaeohyphomycosis			
153				Pharygoconjunctival fever			
154				Pharyngitis			
155				Pinta			
156				Plague			
157				Pleurisy			
158				Pneumococcal meningitis			
159				Pneumocystosis			
160				Pneumonia			
161				Poliomyelitis			
162				Poxvirus			
163				Proctitis			
164				Protothecosis			
165				Psittacosis			
166				Pulmonary fibrosis			
167				Pulmonary hypertension			
168				Pulmonary tuberculosis			
169				Pure red cell aplasia			
170				Pyoderma gangrenosum			
171				Q fever			
172				Rash			
173				Rat-bite fever			
174				Respiratory distress syndrome			
175				Rhinitis			
176				Rhinoscleroma			
177				Rhinosporidiosis			
178				Rickettsia parkeri			
179				Rickettsialpox			
180				Rocky Mountain spotted fever			
181				Rubella			
182				Salmonellosis			
183				Scarlet fever			
184				Schistosomiasis			
185				Scrub typhus			
186				Seizures			
187				Sepsis			
188				Septic arthritis			
189				Septic sore throat			
190				Septicemia			

	K	L	M	N
143	Meat, Turkey	Tissue_Lung	Whey samples	
144	Meat, Turkey, Ground_cooked	Tissue_Mass	Wipe	
145	Meat, Turkey, Ground_raw	Tissue_Muscle (Biopsy)	Wipe_skin Cleaning	
146	Meat, Veal	Tissue_Necrotic		
147	Meat, Venison	Tissue_Nodule		
148	Medical Equipment	Tissue_Placenta		
149	Monocyte	Tissue_Postmortem		
150	Moonshine (Pruno brew)	Tissue_Section		
151	Mucosa specimen	Tissue_Skin (biopsy)		
152	Mucus	TNA-Nucleic acid (Total)		
153	Nail specimen (specimen)	Ulcer		
154	Nasal secretions	Unknown		
155	Nasal wash	Urethral swab		
156	Nasogastric aspirate	Urine		
157	Nasopharyngeal (Throat) washings	Vomitus		
158	Nasopharyngeal and Oropharyngeal Swab	Wash_Carcass		
159	Nasopharyngeal aspirate	White blood cells		
160	Nasopharyngeal swab	Wipe		
161	Nest material	Wound		
162	Nodule	Wound drainage		
163	Nuts	Wound exudate		
164	Nuts, Peanuts	Wound_Surgical		
165	Oil			
166	Oral swab			
167	Papule			
168	Pellet_wood			
169	Peripheral Blood Mononuclear Cell			
170	Peritoneal dialysate			
171	Peritoneal dialysis solution			
172	Pernasal swab (Animal)			
173	Pharyngeal (Throat) washings			
174	Plant matter			
175	Plasma			
176	Plasmid			
177	P-trap			
178	Pus			
179	Rectal swab			
180	Red Blood Cell			
181	Reference Strain			
182	RNA-Ribonucleic acid			
183	Saliva			
184	Sample Tanker			
185	Sand			
186	Seafood			
187	Seafood, Clams			
188	Seafood, Crab			
189	Seafood, Fish			
190	Seafood, Shellfish			

	O	P	Q
143	Intestine (Bowel)_Large		
144	Intestine (Bowel)_Small		
145	Jaw region		
146	Jejunum		
147	Joint		
148	Joint_Hip		
149	Joint_Knee		
150	Joint_Synovial		
151	Joint_Wrist		
152	Jugular vein		
153	Kidney		
154	Kidney_Cortex		
155	Knee region		
156	Labia_Genital		
157	Larynx		
158	Leg		
159	Leg_Calf		
160	Leg_Lower		
161	Leg_Thigh		
162	Lip		
163	Liver		
164	Lumbar Disc Space		
165	Lung		
166	Lung_Lingula		
167	Lung_Lower lobe		
168	Lung_Middle lobe		
169	Lung_Upper lobe		
170	Lymph node		
171	Lymph node_Petracheal		
172	Lymph node_Retroperitoneal		
173	Lymph node_Submandibular		
174	Main bronchus		
175	Mitral valve		
176	Mouth		
177	Muscle_Biceps brachii		
178	Muscle_Iliopsoas		
179	Muscle_Psoas		
180	Muscle_Skeletal		
181	Nail		
182	Nail bed		
183	Nape of Neck		
184	Nasal septum		
185	Nasopharynx		
186	Neck		
187	Nose		
188	Nose_Turbinate		
189	Olecranon process		
190	Olfactory bulb		

	W	X	Y	Z
143		Martinique		
144		Mauritania		
145		Mauritius		
146		Mayotte		
147		Mexico		
148		Moldova, Republic of		
149		Monaco		
150		Mongolia		
151		Montenegro		
152		Montserrat		
153		Morocco		
154		Mozambique		
155		Myanmar		
156		Namibia		
157		Nauru		
158		Nepal		
159		Netherlands		
160		Netherlands Antilles		
161		New Caledonia		
162		New Zealand		
163		Nicaragua		
164		Niger		
165		Nigeria		
166		Niue		
167		Norfolk Island		
168		Northern Mariana Islands		
169		Norway		
170		Oman		
171		Pakistan		
172		Palau		
173		Palestinian Territory, Occupied		
174		Panama		
175		Papua New Guinea		
176		Paraguay		
177		Peru		
178		Philippines		
179		Pitcairn		
180		Poland		
181		Portugal		
182		Puerto Rico		
183		Qatar		
184		Reunion		
185		Romania		
186		Russian Federation		
187		Rwanda		
188		Saint Barthelemy		
189		Saint Helena		
190		Saint Kitts and Nevis		

	AA	AB	AC	AD
143		Duiker_Forest (Genus Cephalophus)	Dipodomys agilis	
144		Eland (Genus Taurotragus)	Dipodomys deserti	
145		Elephant (Generic name)	Dipodomys elator	
146		Elephant_African	Dipodomys gravipes	
147		Elk_American (Red Deer)	Dipodomys heermanni	
148		Elk_Tule	Dipodomys ingens	
149		Ferret (Generic name)	Dipodomys insularis	
150		Ferret_Black-footed	Dipodomys margaritae	
151		Ferret_Least	Dipodomys merriami	
152		Fisher	Dipodomys microps	
153		Fox (Generic name)	Dipodomys nelsoni	
154		Fox_Arctic	Dipodomys nitratoides	
155		Fox_Common Gray	Dipodomys ordii	
156		Fox_Fennec	Dipodomys panamintinus	
157		Fox_Island Grey	Dipodomys phillipsii	
158		Fox_Kit	Dipodomys spectabilis	
159		Fox_Red	Dipodomys stephensi	
160		Fox_Red (Kit) (Genus Vulpes)	Dipodomys venustus	
161		Fox_Swift	Dipodomys venustus subsp elephantinus	
162		Fox_Virginia	Enhydra lutris	
163		Frog (Generic name)	Eptesicus fuscus	
164		Frog_Toad (Generic name)	Equus (Genus)	
165		Galago (Genus Galago)	Equus burchellii	
166		Gazella (Genus Gazella)	Equus caballus	
167		Gemsbok	Equus zebra	
168		Gerbil (Generic name)	Erethizon dorsatum	
169		Gerbil (Genus Gerbillus)	Erinaceinae (Subfamily)	
170		Gerbil (Jird) (Genus Meriones)	Euderma maculatum	
171		Gerbil_Great	Eumops glacinus	
172		Giraffe	Eumops perotis	
173		Goat (Genus Capra)	Eumops underwoodi	
174		Goat_Mountain (Genus Oreamnos)	Felis catus	
175		Goldfinch (Generic name)	Felis silvestris	
176		Goose_Domestic (Generic name)	Galago (Genus)	
177		Gopher_Desert Pocket	Galea spixii	
178		Gopher_Plains Pocket	Gallus gallus	
179		Gopher_Pocket, Botta's	Gazella (Genus)	
180		Gopher_Pocket, Camas	Geomys arenarius	
181		Gopher_Pocket, Mountain	Geomys bursarius	
182		Gopher_Pocket, Yellow-faced	Geomys personatus	
183		Gopher_Pocket_Northern	Geomys pinetis	
184		Gopher_Pocket_Southern	Gerbillus (Genus)	
185		Gopher_Pocket_Townsend's	Giraffa camelopardalis	
186		Gopher_Southeastern Pocket	Glaucomys (Genus)	
187		Gopher_Texas Pocket	Glaucomys sabrinus	
188		Gophers_Pocket (Genus Thomomys)	Glaucomys volans	
189		Gorilla	Gorilla gorilla	
190		Guanaco	Gulo gulo	

WA-KINGCO-20-0492-G-000227

	AE	AF	AG	AH
143	Flea (Haemaphysalis sp. (Genus))	Echidnophaga (Amphalius) runatus		
144	Flea (Hoplopsyllus anomalus)	Echidnophaga gallinacea		
145	Flea (Hoplopsyllus pectinatus)	Epitedia cavernicola		
146	Flea (Hormopsylla kyriophila)	Epitedia faceta		
147	Flea (Hystrichopsylla dippiei)	Epitedia neotomae		
148	Flea (Hystrichopsylla kris)	Epitedia scapani		
149	Flea (Hystrichopsylla occidentalis linsdalei)	Epitedia stanfordi		
150	Flea (Hystrichopsylla occidentalis)	Epitedia stewarti		
151	Flea (Hystrichopsylla orophila)	Epitedia wenmanni		
152	Flea (Hystrichopsylla schefferi)	Euhoplopsyllus glacialis		
153	Flea (Hystrichopsylla sp. (Genus))	Euhoplopsyllus glacialis affinis		
154	Flea (Jellisoni doratopsylla)	Euhoplopsyllus glacialis foxi		
155	Flea (Jellisonia bonia)	Euhoplopsyllus glacialis glacialis		
156	Flea (Jellisonia bullisi)	Euhoplopsyllus glacialis lynx		
157	Flea (Jellisonia hayesi)	Eumolpianus (Ceratophyllus) ciliatus		
158	Flea (Jellisonia ironsi)	Eumolpianus cyrturus		
159	Flea (Jellisonia johnsonae)	Eumolpianus eumolpi		
160	Flea (Jellisonia klotsi)	Eumolpianus eutamiadis		
161	Flea (Jellisonia wisemani)	Eumolpianus fornacis		
162	Flea (Jordanopsylla allredi)	Eumolpianus oraius		
163	Flea (Kohlsia azuerensis)	Eumolpianus polumus		
164	Flea (Kohlsia campaniger)	Family Culicidae		
165	Flea (Kohlsia cora)	Family Oestridae		
166	Flea (Kohlsia felteni)	Family Simuliidae		
167	Flea (Kohlsia fournieri)	Foxella ignota		
168	Flea (Kohlsia gammonsi)	Genus Chrysops		
169	Flea (Kohlsia graphis)	Geusibia ashcrafti		
170	Flea (Kohlsia keenani)	Haemaphysalis leporispalustris		
171	Flea (Kohlsia linni)	Haemaphysalis sp. (Genus)		
172	Flea (Kohlsia martini)	Haemaphysalis spp.		
173	Flea (Kohlsia mojica)	Hoplopsyllus anomalus		
174	Flea (Kohlsia ortizi)	Hoplopsyllus pectinatus		
175	Flea (Kohlsia osgoodi)	Hormopsylla kyriophila		
176	Flea (Kohlsia pelaezi)	Hystrichopsylla dippiei		
177	Flea (Kohlsia tiptoni)	Hystrichopsylla kris		
178	Flea (Kohlsia traubi)	Hystrichopsylla occidentalis		
179	Flea (Kohlsia uniseta)	Hystrichopsylla occidentalis linsdalei		
180	Flea (Kohlsia whartoni)	Hystrichopsylla orophila		
181	Flea (Leptopsylla segnis)	Hystrichopsylla schefferi		
182	Flea (Malaraeus eremicus)	Hystrichopsylla sp. (Genus)		
183	Flea (Malaraeus sinomus)	Ixodes affinis		
184	Flea (Malaraeus sp. (Genus))	Ixodes angustus		
185	Flea (Malaraeus telchinus)	Ixodes brunneus		
186	Flea (Malaraeus vonfintelis)	Ixodes cookei		
187	Flea (Margopsylla tolli)	Ixodes dentatus		
188	Flea (Megabothris abantis)	Ixodes kingi		
189	Flea (Megabothris acerbus)	Ixodes marxi		
190	Flea (Megabothris adversus)	Ixodes muris		

	AM	AN	AO	AP
143			Deer_Fallow	Dama dama
144			Deer_Mule	Odocoileus hemionus
145			Deer_Sika	Cervus nippon
146			Deer_White-tailed	Odocoileus virginianus
147			Dog_Domestic	Canis lupus subsp familiaris
148			Donkey (Generic name)	[Donkey]
149			Duck (Generic name)	[Duck]
150			Duiker_Forest (Genus Cephalophus)	Cephalophus (Genus)
151			Eland (Genus Taurotragus)	Taurotragus (Genus)
152			Elephant (Generic name)	[Elephant]
153			Elephant_African	Loxodonta africana
154			Elk_American (Red Deer)	Cervus elaphus
155			Elk_Tule	Cervus elaphus subsp nannodes
156			Ferret (Generic name)	[Ferret]
157			Ferret_Black-footed	Mustela nigripes
158			Ferret_Least	Mustela nivalis subsp rixosa
159			Fisher	Martes pennanti
160			Flea (Actenopsylla suavis)	Actenopsylla suavis
161			Flea (Adoratopsylla intermedia)	Adoratopsylla intermedia
162			Flea (Aetheca thamba)	Aetheca thamba
163			Flea (Aetheca wagneri)	Aetheca wagneri
164			Flea (Amaradix bitterrootensis)	Amaradix bitterrootensis
165			Flea (Amaradix euphorbi)	Amaradix euphorbi
166			Flea (Amphipsylla sibirica pollionis)	Amphipsylla sibirica pollionis
167			Flea (Amphipsylla sibirica washingtona)	Amphipsylla sibirica washingtona
168			Flea (Amphipsylla sibirica)	Amphipsylla sibirica
169			Flea (Anomiopsyllus amphilbolus)	Anomiopsyllus amphilbolus
170			Flea (Anomiopsyllus durangoensis)	Anomiopsyllus durangoensis
171			Flea (Anomiopsyllus falsicalifornicus)	Anomiopsyllus falsicalifornicus
172			Flea (Anomiopsyllus martini)	Anomiopsyllus martini
173			Flea (Anomiopsyllus montanus)	Anomiopsyllus montanus
174			Flea (Anomiopsyllus nidiophilus)	Anomiopsyllus nidiophilus
175			Flea (Anomiopsyllus novomexicanensis)	Anomiopsyllus novomexicanensis
176			Flea (Anomiopsyllus nudatus)	Anomiopsyllus nudatus
177			Flea (Anomiopsyllus oaxacae)	Anomiopsyllus oaxacae
178			Flea (Anomiopsyllus sinuatus)	Anomiopsyllus sinuatus
179			Flea (Anomiopsyllus sp (Genus))	Anomiopsyllus sp (Genus)
180			Flea (Anomiopsyllus traubi)	Anomiopsyllus traubi
181			Flea (Anomiopsyllus walkeri)	Anomiopsyllus walkeri
182			Flea (Atheropsylla cochisei)	Atheropsylla cochisei
183			Flea (Atyphloceras bishopi)	Atyphloceras bishopi
184			Flea (Atyphloceras echis)	Atyphloceras echis
185			Flea (Atyphloceras multidentatus)	Atyphloceras multidentatus
186			Flea (Atyphloceras tancitari)	Atyphloceras tancitari
187			Flea (Baculomeris altmani)	Baculomeris altmani
188			Flea (Baculomeris schmidtii)	Baculomeris schmidtii
189			Flea (Callistopsyllus terinus campestris)	Callistopsyllus terinus campestris
190			Flea (Callistopsyllus terinus deuterus)	Callistopsyllus terinus deuterus

	AQ	AR	AS	AT	AU	AV
143		J , 4		Catallagia mathesoni		
144		J , 5		Catallagia neweyi		
145		J , 6		Catallagia sculleni		
146		J , 7		Catallagia sculleni rutherfordi		
147		J , 8		Catallagia sp. (Genus)		
148		J , 9		Catallagia wymani		
149		J , 10		Cavia porcellus		
150		J , 11		Caviidae (Family)		
151		J , 12		Cebus (Genus)		
152		J , 13		Cebus apella		
153		J , 14		Cediopsylla inaequalis		
154		J , 15		Cediopsylla inaequalis interrupta		
155		K , 1		Cediopsylla simplex		
156		K , 2		Cediopsylla tepolita		
157		K , 3		Cephalophus (Genus)		
158		K , 4		Ceratophyllus adustus		
159		K , 5		Ceratophyllus affinis		
160		K , 6		Ceratophyllus altus		
161		K , 7		Ceratophyllus arcuegens		
162		K , 8		Ceratophyllus celsus		
163		K , 9		Ceratophyllus ciliatus		
164		K , 10		Ceratophyllus coahuilensis		
165		K , 11		Ceratophyllus garei		
166		K , 12		Ceratophyllus gilvus		
167		K , 13		Ceratophyllus idius		
168		K , 14		Ceratophyllus lari		
169		K , 15		Ceratophyllus lunatus tundrensis		
170		L , 1		Ceratophyllus niger		
171		L , 2		Ceratophyllus pelecani		
172		L , 3		Ceratophyllus petrochelidoni		
173		L , 4		Ceratophyllus rauschi		
174		L , 5		Ceratophyllus riparius		
175		L , 6		Ceratophyllus rossittensis		
176		L , 7		Ceratophyllus scopulorum		
177		L , 8		Ceratophyllus styx		
178		L , 9		Ceratophyllus vison		
179		L , 10		Ceratotherium simum (organism)		
180		L , 11		Cercopithecus neglectus		
181		L , 12		Cervidae (Family)		
182		L , 13		Cervus elaphus		
183		L , 14		Cervus elaphus subsp nannodes		
184		L , 15		Cervus nippon		
185		M , 1		Chaetodipus arenarius		
186		M , 2		Chaetodipus artus		
187		M , 3		Chaetodipus baileyi		
188		M , 4		Chaetodipus californicus		
189		M , 5		Chaetodipus fallax		
190		M , 6		Chaetodipus formosus		

	A	B	C
191		Marburg Hemorrhagic Fever Serology and Molecular Detection	Clostridium difficile
192		Measles Avidity	Clostridium innocuum
193		Measles Detection and Genotyping	Clostridium perfringens
194		Measles Neutralization Antibody (Not for Immune Status)	Clostridium septicum
195		Measles Serology	Clostridium sordellii
196		Measles Special Study	Clostridium species
197		Measles Vaccine Virus Detection	Clostridium sporogenes
198		MERS-CoV Molecular Detection	Clostridium tetani
199		MERS-CoV PCR (Middle East Respiratory Syndrome Coronavirus Serology)	Coccidia species
200		Microsporidia Molecular Identification	Coccidioides immitis
201		Moraxella species Identification	Coccidioides posadasii
202		MPIR - Study	Coccidioides species
203		Multipathogen Respiratory Panel (Molecular Detection)	Coelomycete
204		Mumps Detection and Genotyping	Colletotrichum species
205		Mumps Neutralization Antibody (Not for Immune Status)	Conidiobolus species
206		Mumps Serology	Control
207		Mumps Special Study	Corynebacterium diphtheriae
208		Mycobacterium TB Complex - Drug Susceptibility Testing	Corynebacterium jeikeium
209		Mycobacterium TB Complex - Identification	Corynebacterium matruchotii
210		Mycobacterium TB Complex - Identification and Drug Susceptibility Testing	Corynebacterium minutissimum
211		Mycobacterium TB Complex - Identification and Pyrazinamide Susceptibility Testing	Corynebacterium phocae
212		Mycobacterium TB Complex - Molecular Detection of Drug Resistance (MDDR)	Corynebacterium pseudotuberculosis
213		Mycobacterium TB Complex - Pyrazinamide Susceptibility Testing	Corynebacterium species
214		Mycobacterium TB Complex - Special Study	Corynebacterium striatum
215		Mycobacterium TB Complex (International Only) Identification and Drug Susceptibility Testing	Corynebacterium ulcerans
216		Mycoplasma pneumoniae Macrolide Susceptibility Genotyping	Corynebacterium xerosis
217		Mycoplasma pneumoniae Molecular Detection	Coxiella burnetii
218		Naegleria Molecular Detection	Coxiella species
219		NARMS Susceptibility Testing	Coxsackievirus A16
220		Neisseria gonorrhoeae Genetic Analysis	Coxsackievirus A20
221		Neisseria gonorrhoeae Identification	Coxsackievirus B3
222		Neisseria gonorrhoeae Study	Coxsackievirus B5
223		Neisseria gonorrhoeae Susceptibility Testing	Cronobacter sakazakii
224		Neisseria meningitidis Identification and Serogrouping	Cronobacter species
225		Neisseria meningitidis Surveillance	Cryobacterium species
226		Neisseria species (not GC or meningococcus) Identification	Cryptococcus laurentii
227		Nipah Virus Testing	Cryptococcus luteolus
228		Nocardia species Identification	Cryptococcus neoformans
229		Nocardia species Identification and Antimicrobial Susceptibility Testing	Cryptococcus neoformans var gattii
230		Nontuberculous Mycobacteria (NTM) - Identification (ID)	Cryptosporidium species
231		Norovirus Genotyping	Cunninghamella bertholletiae
232		Norovirus Molecular Detection and Genotyping	Cupriavidus species
233		Orientia Molecular Detection	Curtobacterium species
234		Orientia Serology	Curvularia hawaiiensis
235		Orientia Special Study	Curvularia species
236		Paragonimiasis Serology	Cutibacterium acnes
237		Parasite - Special Study	Cyclospora species
238		Parasites: Morphologic Identification	Cysticercus species

	D	E	F	G	H	I	J
191				Severe Acute Respiratory Syndrome (SARS)			
192				Shigellosis			
193				Sinusitis			
194				Spinal injury			
195				Spirochetal jaundice			
196				Splenomegaly			
197				Spontaneous abortion			
198				Sporotrichosis			
199				Stroke			
200				Strongyloidiasis			
201				Subacute bacterial endocarditis			
202				Swollen joints			
203				Syphilis			
204				Systemic infection			
205				Tetanus			
206				Thrush			
207				Tick-borne relapsing fever			
208				Tinea nigra			
209				Tinea versicolor			
210				Tonsillitis			
211				Toxic shock syndrome			
212				Toxoplasmosis			
213				Tracheobronchitis			
214				Trachoma			
215				Trench fever			
216				Trichinosis			
217				Trichomoniasis			
218				Tuberculosis			
219				Tularemia			
220				Typhoid fever			
221				Unknown			
222				Upper respiratory infection			
223				Urethritis			
224				Urinary tract infection			
225				Vaginosis			
226				Venereal disease			
227				Vincent's angina			
228				Viral hepatitis			
229				Wegener's granulomatosis			
230				Whooping cough			
231				Wound infection			
232				Yaws			
233				Yellow fever			
234				Zygomycosis			
235							
236							
237							
238							

	K	L	M	N
191	Seafood, Shrimp			
192	Seafood, Squid			
193	Sediment_ Water			
194	Semen			
195	Serum specimen			
196	Sewage			
197	Shower component			
198	Sinus			
199	Skin swab			
200	Skin_Pustule			
201	Skin_Vesicle			
202	Smear			
203	Soil			
204	Solution_Contact lens			
205	Solution_Disinfectant			
206	Soup			
207	Specimen from burn injury			
208	Spice			
209	Spice, Peppers			
210	Spleen specimen			
211	Spread			
212	Spread, Peanut butter			
213	Sputum			
214	Sputum_coughed			
215	Sputum_induced			
216	Stew			
217	Stool			
218	Stool Suspension			
219	Surface wet wipe			
220	Surface Wipe			
221	Swab			
222	Swab_Drag			
223	Sweat			
224	Synthetic			
225	Throat (Oropharyngeal) swab			
226	Tick			
227	Tissue			
228	Tissue_Abscess			
229	Tissue_Adipose			
230	Tissue_Brain			
231	Tissue_Cyst			
232	Tissue_Endometrium			
233	Tissue_Heart			
234	Tissue_Kidney			
235	Tissue_Liver			
236	Tissue_Lung			
237	Tissue_Mass			
238	Tissue_Muscle (Biopsy)			

	O	P	Q
191	Omentum		
192	Oropharynx		
193	Ovary		
194	Palate		
195	Palate_Hard		
196	Pancreas		
197	Parietal pleura		
198	Penile shaft		
199	Penis		
200	Pericardial cavity		
201	Perihepatic region		
202	Perineum		
203	Periorbital region		
204	Perirectal region		
205	Peritoneal cavity		
206	Peritoneum		
207	Phrenic nerve		
208	Placenta		
209	Placental membrane		
210	Pleural cavity		
211	Pleural membrane		
212	Prepatellar bursa		
213	Prostate		
214	Pulmonary alveoli		
215	Pulmonary valve		
216	Pyloric (Gastric) antrum		
217	Rectum		
218	Rib cage		
219	Scalp		
220	Scrotum		
221	Segment of lower lobe of right lung		
222	Shoulder		
223	Sinus_Ethmoid		
224	Sinus_Frontal		
225	Sinus_Maxillary		
226	Sinus_Nasal		
227	Sinus_Sphenoid		
228	Skin		
229	Skull		
230	Skull_Mastoid Process		
231	Spinal cord		
232	Spine		
233	Spleen		
234	Sternum region		
235	Stomach		
236	Subgaleal area		
237	Subperiosteum		
238	Superior fascia of pelvic diaphragm		

	W	X	Y	Z
191		Saint Lucia		
192		Saint Martin (French part)		
193		Saint Pierre and Miquelon		
194		Saint Vincent and the Grenadines		
195		Samoa		
196		San Marino		
197		Sao Tome and Principe		
198		Saudi Arabia		
199		Senegal		
200		Serbia		
201		Seychelles		
202		Sierra Leone		
203		Singapore		
204		Slovakia		
205		Slovenia		
206		Solomon Islands		
207		Somalia		
208		South Africa		
209		South Georgia and the South Sandwich Islands		
210		South Sudan		
211		Spain		
212		Sri Lanka		
213		Sudan		
214		Suriname		
215		Svalbard and Jan Mayen		
216		Swaziland		
217		Sweden		
218		Switzerland		
219		Syrian Arab Republic		
220		Taiwan, Province of China		
221		Tajikistan		
222		Tanzania, United Republic of		
223		Thailand		
224		Timor-Leste		
225		Togo		
226		Tokelau		
227		Tonga		
228		Trinidad and Tobago		
229		Tunisia		
230		Turkey		
231		Turkmenistan		
232		Turks and Caicos Islands		
233		Tuvalu		
234		Uganda		
235		Ukraine		
236		United Arab Emirates		
237		United Kingdom		
238		United States Minor Outlying Islands		

	AA	AB	AC	AD
191		Guinea pig	Gulo gulo subsp luscus	
192		Gull_Ring-billed	Habromys lepturus	
193		Hamster (Generic name)	Habromys lophurus	
194		Hamster (Genus Cricetulus)	Herpestes javanicus	
195		Hamster (Genus Mesocricetus)	Herpestidae (Family)	
196		Hamster_Brandt's	Hippotragus (Genus)	
197		Hamster_Ciscaucasian	Hippotragus equinus	
198		Hamster_European	Hippotragus niger	
199		Hamster_Romanian	Hodomys alleni	
200		Hamster_Syrian	Ictonyx striatus	
201		Hare (Genus Lepus)	Idionycteris phyllotis	
202		Hare_Alaskan	Isthmomyx flavidus	
203		Hare_Arctic	Isthmomyx pirrensis	
204		Hare_Brown (European)	Kerodon rupestris	
205		Hare_Snowshoe	Lagomorpha (Order)	
206		Hawk (Generic name)	Lama glama	
207		Hedgehog (Subfamily)	Lama guanicoe	
208		Hedgehog_Pygmy	Lama pacos	
209		Horse	Larus delawarensis	
210		Horse (Genus Equus)	Lasionycteris noctivagans	
211		Jackrabbit, Antelope	Lasiurus blossevillei	
212		Jackrabbit_Black	Lasiurus borealis	
213		Jackrabbit_Black-tailed	Lasiurus cinereus	
214		Jackrabbit_Gaillard (White-sided)	Lasiurus ega	
215		Jackrabbit_Tehuantepec	Lasiurus intermedius	
216		Jackrabbit_White-sided	Lasiurus seminolus	
217		Jackrabbit_White-tailed	Lemmiscus curtatus	
218		Jaguar	Lemuridae (Family)	
219		Jaguarundi	Leopardus pardalis	
220		Javelina (Peccary_Collared)	Leopardus tigrinus	
221		Jird_Libyan	Leopardus wiedii	
222		Jird_Mid-day	Leptonycteris curasoae	
223		Jird_Mongolian	Leptonycteris nivalis	
224		Jird_Sundevall's	Lepus (Genus)	
225		Jird_Tamarisk	Lepus alleni	
226		Kangaroo (Generic name)	Lepus americanus	
227		Kangaroo rat_Agile	Lepus arcticus	
228		Kangaroo rat_Banner-tailed	Lepus californicus	
229		Kangaroo rat_Big-eared	Lepus callotis subsp callotis	
230		Kangaroo rat_Chisel-toothed	Lepus callotis subsp gaillardi	
231		Kangaroo rat_Desert	Lepus europaeus	
232		Kangaroo rat_Fresno (San Joaquin)	Lepus flavigularis	
233		Kangaroo rat_Giant	Lepus insularis	
234		Kangaroo rat_Heermann's	Lepus othus	
235		Kangaroo rat_Margarita Island	Lepus townsendii	
236		Kangaroo rat_Merriam's	Lontra canadensis	
237		Kangaroo rat_Narrow-faced	Lophuromys woosnami	
238		Kangaroo rat_Nelson's	Loxodonta africana	

WA-KINGCO-20-0492-G-000236

	AE	AF	AG	AH
191	Flea (Megabothris asio megacolpus)	Ixodes ovatus		
192	Flea (Megabothris asio orectus)	Ixodes pacificus		
193	Flea (Megabothris atrox)	Ixodes persulcatus		
194	Flea (Megabothris bisetis)	Ixodes ricinus		
195	Flea (Megabothris clantoni)	Ixodes scapularis		
196	Flea (Megabothris groenlandicus)	Ixodes sculptus		
197	Flea (Megabothris jamesoni)	Ixodes spp.		
198	Flea (Megabothris lucifer)	Jellisonia bonia		
199	Flea (Megabothris princei)	Jellisonia bullisi		
200	Flea (Megabothris quirini)	Jellisonia doratopsylla		
201	Flea (Megabothris similus)	Jellisonia hayesi		
202	Flea (Megabothris smiti)	Jellisonia ironsi		
203	Flea (Megabothris spenceri)	Jellisonia johnsonae		
204	Flea (Megabothris weaveri)	Jellisonia klotsi		
205	Flea (Megabothris wilsoni)	Jellisonia wisemani		
206	Flea (Megarthroglossus becki)	Jordanopsylla allredi		
207	Flea (Megarthroglossus divinus)	Kohlsia azuerensis		
208	Flea (Megarthroglossus proculus)	Kohlsia campaniger		
209	Flea (Megarthroglossus sicamus)	Kohlsia cora		
210	Flea (Megarthroglossus sp. (Genus))	Kohlsia felteni		
211	Flea (Meringis agilis)	Kohlsia fourneri		
212	Flea (Meringis altipecten)	Kohlsia gammonsi		
213	Flea (Meringis arachis)	Kohlsia graphis		
214	Flea (Meringis bilsingi)	Kohlsia keenani		
215	Flea (Meringis californicus)	Kohlsia linni		
216	Flea (Meringis cummingi)	Kohlsia martini		
217	Flea (Meringis deserti)	Kohlsia mojica		
218	Flea (Meringis dipodomys)	Kohlsia ortizi		
219	Flea (Meringis disparalis)	Kohlsia osgoodi		
220	Flea (Meringis facilis)	Kohlsia pelaezi		
221	Flea (Meringis hubbardi)	Kohlsia tiptoni		
222	Flea (Meringis jamesoni)	Kohlsia traubi		
223	Flea (Meringis nidi)	Kohlsia uniseta		
224	Flea (Meringis parkeri)	Kohlsia whartoni		
225	Flea (Meringis rectus)	Leptopsylla segnis		
226	Flea (Meringis shannoni)	Linguatula (Genus)		
227	Flea (Meringis sp. (Genus))	Malaraeus eremicus		
228	Flea (Meringis vitabilis)	Malaraeus sinomus		
229	Flea (Mioctenopsylla arctica)	Malaraeus sp. (Genus)		
230	Flea (Mioctenopsylla traubi)	Malaraeus telchinus		
231	Flea (Myodopsylla collinsi)	Malaraeus vonfintelis		
232	Flea (Myodopsylla gentilis)	Margopsylla tolli		
233	Flea (Myodopsylla globata)	Megabothris abantis		
234	Flea (Myodopsylla nordina)	Megabothris acerbus		
235	Flea (Myodopsylla setosa)	Megabothris adversus		
236	Flea (Myodopsylla peircei)	Megabothris asio megacolpus		
237	Flea (Nearctopsylla brooksi)	Megabothris asio orectus		
238	Flea (Nearctopsylla genalis)	Megabothris atrox		

	AM	AN	AO	AP
191			Flea (Callistopsyllus terinus terinus)	Callistopsyllus terinus terinus
192			Flea (Carteretta carteri)	Carteretta carteri
193			Flea (Carteretta clavata)	Carteretta clavata
194			Flea (Catallagia arizonae)	Catallagia arizonae
195			Flea (Catallagia borealis)	Catallagia borealis
196			Flea (Catallagia calisheri)	Catallagia calisheri
197			Flea (Catallagia charlottensis)	Catallagia charlottensis
198			Flea (Catallagia decipiens)	Catallagia decipiens
199			Flea (Catallagia jellisoni)	Catallagia jellisoni
200			Flea (Catallagia mathesoni)	Catallagia mathesoni
201			Flea (Catallagia neweyi)	Catallagia neweyi
202			Flea (Catallagia sculleni rutherfordi)	Catallagia sculleni rutherfordi
203			Flea (Catallagia sculleni)	Catallagia sculleni
204			Flea (Catallagia sp. (Genus))	Catallagia sp. (Genus)
205			Flea (Catallagia wymani)	Catallagia wymani
206			Flea (Cediopsylla inaequalis interrupta)	Cediopsylla inaequalis interrupta
207			Flea (Cediopsylla inaequalis)	Cediopsylla inaequalis
208			Flea (Cediopsylla simplex)	Cediopsylla simplex
209			Flea (Cediopsylla tepolita)	Cediopsylla tepolita
210			Flea (Ceratophyllus adustus)	Ceratophyllus adustus
211			Flea (Ceratophyllus affinis)	Ceratophyllus affinis
212			Flea (Ceratophyllus altus)	Ceratophyllus altus
213			Flea (Ceratophyllus arcuegens)	Ceratophyllus arcuegens
214			Flea (Ceratophyllus celsus)	Ceratophyllus celsus
215			Flea (Ceratophyllus ciliatus)	Ceratophyllus ciliatus
216			Flea (Ceratophyllus coahuilensis)	Ceratophyllus coahuilensis
217			Flea (Ceratophyllus garei)	Ceratophyllus garei
218			Flea (Ceratophyllus gilvus)	Ceratophyllus gilvus
219			Flea (Ceratophyllus idius)	Ceratophyllus idius
220			Flea (Ceratophyllus lari)	Ceratophyllus lari
221			Flea (Ceratophyllus lunatus tundrensis)	Ceratophyllus lunatus tundrensis
222			Flea (Ceratophyllus niger)	Ceratophyllus niger
223			Flea (Ceratophyllus pelecani)	Ceratophyllus pelecani
224			Flea (Ceratophyllus petrochelidoni)	Ceratophyllus petrochelidoni
225			Flea (Ceratophyllus rauschi)	Ceratophyllus rauschi
226			Flea (Ceratophyllus riparius)	Ceratophyllus riparius
227			Flea (Ceratophyllus rossittensis)	Ceratophyllus rossittensis
228			Flea (Ceratophyllus scopulorum)	Ceratophyllus scopulorum
229			Flea (Ceratophyllus styx)	Ceratophyllus styx
230			Flea (Ceratophyllus vison)	Ceratophyllus vison
231			Flea (Chaetopsylla floridensis)	Chaetopsylla floridensis
232			Flea (Chaetopsylla lotoris)	Chaetopsylla lotoris
233			Flea (Chaetopsylla nidicola)	Chaetopsylla nidicola
234			Flea (Chaetopsylla setosa)	Chaetopsylla setosa
235			Flea (Chaetopsylla stewarti)	Chaetopsylla stewarti
236			Flea (Chaetopsylla tuberculaticeps)	Chaetopsylla tuberculaticeps
237			Flea (Conorhinopsylla stanfordi)	Conorhinopsylla stanfordi
238			Flea (Coptopsylla lamellifer)	Coptopsylla lamellifer

WA-KINGCO-20-0492-G-000238

	AQ	AR	AS	AT	AU	AV
191		M , 7		Chaetodipus goldmani		
192		M , 8		Chaetodipus hispidus		
193		M , 9		Chaetodipus intermedius		
194		M , 10		Chaetodipus lineatus		
195		M , 11		Chaetodipus nelsoni		
196		M , 12		Chaetodipus penicillatus		
197		M , 13		Chaetodipus pernix		
198		M , 14		Chaetodipus spinatus		
199		M , 15		Chaetopsylla floridensis		
200		N , 1		Chaetopsylla lotoris		
201		N , 2		Chaetopsylla nidicola		
202		N , 3		Chaetopsylla setosa		
203		N , 4		Chaetopsylla stewarti		
204		N , 5		Chaetopsylla tuberculiceps		
205		N , 6		Chamaeleonidae (Family)		
206		N , 7		Chelydra serpentina		
207		N , 8		Chinchilla lanigera		
208		N , 9		Chiroptera (Order)		
209		N , 10		Chlamydosaurus kingii		
210		N , 11		Choeronycteris (Genus)		
211		N , 12		Choeronycteris mexicana		
212		N , 13		Class Arachnida		
213		N , 14		Class Diplopoda		
214		N , 15		Clethrionomys (Genus)		
215		O , 1		Clethrionomys gapperi		
216		O , 2		Clethrionomys gapperi subsp occidentalis		
217		O , 3		Clethrionomys glariolus		
218		O , 4		Clethrionomys rutilus		
219		O , 5		Conepatus leuconotus		
220		O , 6		Connochaetes (Genus)		
221		O , 7		Connochaetes taurinus		
222		O , 8		Conorhinopsylla stanfordi		
223		O , 9		Coptopsylla lamellifer		
224		O , 10		Corrodopsylla barrerae		
225		O , 11		Corrodopsylla curvata		
226		O , 12		Corrodopsylla hamiltoni		
227		O , 13		Corvus (Genus)		
228		O , 14		Corypsylla jordani		
229		O , 15		Corypsylla kohlsi		
230				Corypsylla ornata		
231				Cricetulus (Genus)		
232				Cricetus cricetus		
233				Crotalus dirissus subsp unicolor		
234				Crotalus tigris		
235				Cryptotis parva		
236				Ctenocephalides canis		
237				Ctenocephalides felis		
238				Ctenophthalmus cabelleri		

	A	B	C
239		Parechovirus Detection and Identification	Dactylosporangium species
240		Parvovirus B19 Molecular Detection	Deinococcus species
241		Parvovirus B19 Serology	Dermacoccus species
242		Pathologic Evaluation of Tissues for Possible Infectious Etiologies	Dermatophilus species
243		Picornavirus Detection and Identification (Not Hepatitis A, Not Rhinovirus)	Dethiosulfovibrio species
244		Picornavirus Special Study	Dientamoeba fragilis
245		Polio Isolation and Genotyping	Dientamoeba species
246		Polio Serology	Dietzia maris
247		Polio Special Study	Dietzia species
248		Poxvirus Molecular Detection	Diphyllbothrium latum
249		Poxvirus Serology	Diphyllbothrium species
250		Puumala Hemorrhagic Fever Serology and Molecular Detection	Dipylidium caninum
251		Rabies Antemortem Human Testing	Dirofilaria species
252		Rabies Antibody Titer (Animal)	Dolosigranulum pigrum
253		Rabies Antibody Titer (Human)	Dysgonomonas species
254		Rabies Confirmatory Testing (Animal)	Echinococcus granulosus
255		Rabies Field Surveillance	Echinococcus multilocularis
256		Rabies Postmortem Human Testing	Echinococcus species
257		Rabies Special Study	Edwardsiella hoshinae
258		Rabies Virus Genetic Typing	Ehrlichia canis
259		Respiratory Virus (Non-Influenza) Case Follow-up	Ehrlichia chaffeensis
260		Respiratory Virus (Non-Influenza) Special Study	Ehrlichia ewingii
261		Respiratory Virus Molecular Detection (Non-Influenza)	Ehrlichia muris
262		Rickettsia Molecular Detection	Ehrlichia muris subsp. eauclairensis
263		Rickettsia Serology Spotted Fever Group (RMSF) Serology	Ehrlichia species
264		Rickettsia Serology Typhus Group Serology	Elizabethkingia meningoseptica
265		Rickettsia Special Study	Entamoeba coli
266		Rift Valley Fever (RVF) Testing	Entamoeba hartmanni
267		Rotavirus Detection	Entamoeba histolytica
268		Rotavirus Genotyping	Entamoeba species
269		Rubella Detection (PCR) and Genotyping	Enteric bacterium
270		Rubella Serology	Enterobacter aerogenes
271		Rubella Serology (IgM and IgG) and Avidity	Enterobacter amnigenus
272		Salmonella Identification and Serotyping	Enterobacter amnigenus biogroup II
273		Salmonella serotype Typhi (only) Serology	Enterobacter asburiae
274		Salmonella Study	Enterobacter cancerogenus
275		Salmonella Subtyping	Enterobacter cloacae
276		SARS-2 Serology	Enterobacter cloacae complex
277		SARS Molecular Detection	Enterobacter species
278		SARS Serology	Enterobacteriaceae
279		Schistosomiasis Serology	Enterobius vermicularis
280		Seoul Virus Testing	Enterococcus casseliflavus
281		Sexually Transmitted Infection (STI) Panel - Neisseria gonorrhoeae, Chlamydia tr	Enterococcus dispar
282		Shiga Toxin-producing E. coli Isolation from Enrichment Broth	Enterococcus durans
283		Simian Immunodeficiency Virus (SIV) and SIV/Human Immunodeficiency Virus (S	Enterococcus faecalis
284		Special Bacteriology Pathogen Study	Enterococcus faecium
285		Staphylococcal Toxic Shock Syndrome Toxin- Identification (ID)	Enterococcus gallinarum
286		Staphylococcus and Micrococcus - Identification (ID)	Enterococcus hirae

WA-KINGCO-20-0492-G-000240

	K	L	M	N
239	Tissue_Necrotic			
240	Tissue_Nodule			
241	Tissue_Placenta			
242	Tissue_Postmortem			
243	Tissue_Section			
244	Tissue_Skin (biopsy)			
245	TNA-Nucleic acid (Total)			
246	Tubing			
247	Ulcer			
248	Unknown			
249	Unknown drink			
250	Unknown food			
251	Urethral swab			
252	Urine			
253	Vacuum cleaner bag			
254	Vacuum cleaner filter			
255	Vegetable			
256	Vegetable, Beans			
257	Vegetable, Cabbage			
258	Vegetable, Lettuce			
259	Vegetable, Spinach			
260	Vegetable, Sprouts			
261	Vegetable, Sprouts_Alfalfa			
262	Vegetable, Tomato			
263	Vomit			
264	Wash Fluid			
265	Wash_Carcass			
266	Wastewater			
267	Water (environmental sample)			
268	Water Concentrate			
269	Water_Aquarium			
270	Water_Canal			
271	Water_Irrigation			
272	Water_Irrigation pond			
273	Water_Lake			
274	Water_Pond			
275	Water_Pool Filter Backwash			
276	Water_Purified			
277	Water_River			
278	Water_Run-off			
279	Water_Swimming pool			
280	Water_Tap			
281	Water_Well			
282	Whey samples			
283	White blood cells			
284	Wipe			
285	Wipe_skin Cleaning			
286	Wound			

	O	P	Q
239	Supraaortic valve area		
240	Supraclavicular lymph node		
241	Tear duct		
242	Temporal fossa		
243	Temporal lobe		
244	Terminal ileum		
245	Testicle		
246	Throat		
247	Thumb		
248	Thumb nail		
249	Toe		
250	Toe_Big		
251	Toe_Fifth		
252	Toe_Fourth		
253	Toe_Second		
254	Toe_Third		
255	Toenail		
256	Tongue		
257	Tonsil		
258	Torso		
259	Trachea		
260	Tricuspid valve		
261	Trochanteric bursa		
262	Umbilical cord		
263	Umbilicus (Navel)		
264	Unknown		
265	Urethra		
266	Uterine adnexae		
267	Uterine horn		
268	Uterus		
269	Vagina		
270	Vein		
271	Vertebra		
272	Vocal cord		
273	Vulva		
274			
275			
276			
277			
278			
279			
280			
281			
282			
283			
284			
285			
286			

	W	X	Y	Z
239		Uruguay		
240		Uzbekistan		
241		Vanuatu		
242		Venezuela		
243		Vietnam		
244		Virgin Islands, British		
245		Virgin Islands of the U.S.		
246		Wallis and Futuna		
247		Western Sahara		
248		Yemen		
249		Zambia		
250		Zimbabwe		
251				
252				
253				
254				
255				
256				
257				
258				
259				
260				
261				
262				
263				
264				
265				
266				
267				
268				
269				
270				
271				
272				
273				
274				
275				
276				
277				
278				
279				
280				
281				
282				
283				
284				
285				
286				

	AA	AB	AC	AD
239		Kangaroo rat_Ord's	Lynx canadensis	
240		Kangaroo rat_Panamint	Lynx rufus	
241		Kangaroo rat_Phillips'	Macaca (Genus)	
242		Kangaroo rat_San Jose Island	Macaca fuscata	
243		Kangaroo rat_San Quintin	Macaca mulatta	
244		Kangaroo rat_Stephens'	Macropus (Genus)	
245		Kangaroo rat_Texas	Macropus robustus	
246		Kangaroo, Wallaby, Wallaroo (Genus Macropus)	Macropus rufus	
247		Kangaroo_Red	Macrotus californicus	
248		Kinkajou	Macrotus waterhousii	
249		Lagomorph (Order Lagomorpha)	Marmota (Genus)	
250		Lemur	Marmota baibacina	
251		Leopard	Marmota caligata	
252		Leopard_Snow	Marmota flaviventris	
253		Lion	Marmota marmota	
254		Lizard (Generic name)	Marmota monax	
255		Lizard_Bearded dragon (Generic name)	Marmota olympus	
256		Lizard_Chameleon (Family Chamaeleonidae)	Marmota vancouverensis	
257		Lizard_Chinese Water Dragon	Marsupalia (Superorder)	
258		Lizard_Frilled-neck Lizard	Martes americana	
259		Lizard_Gecko (Generic name)	Martes pennanti	
260		Lizard_Iguana (Generic name)	Megadontomys nelsoni	
261		Llama	Megadontomys thomasi	
262		Lorikeet (Generic name)	Mephitidae (Family)	
263		Lorikeet_Blue mountain (Rainbow)	Mephitis macroura	
264		Lynx	Mephitis mephitis	
265		Macaque (Genus Macaca)	Meriones (Genus)	
266		Macaque_Japanese	Meriones crassus	
267		Macaque_Rhesus	Meriones libycus	
268		Macaw (Genus Ara)	Meriones meridianus	
269		Margay	Meriones tamariscinus	
270		Marmoset (Genus Callithrix)	Meriones unguiculatus	
271		Marmoset_Weid's Black-tufted-ear	Mesocricetus (Genus)	
272		Marmot (Genus Marmota)	Mesocricetus auratus	
273		Marmot_Alpine	Mesocricetus brandti	
274		Marmot_Gray	Mesocricetus newtoni	
275		Marmot_Hoary	Mesocricetus raddei	
276		Marmot_Olympic	Microtus (Genus)	
277		Marmot_Vancouver	Microtus abbreviatus	
278		Marmot_Yellow-bellied	Microtus breweri	
279		Marsupial (Superorder Marsupalia)	Microtus californicus	
280		Marten_American	Microtus chrotorrhinus	
281		Meerkat	Microtus guatemalensis	
282		Mice_Deer (Genus Peromyscus)	Microtus longicaudus	
283		Mice_Oldfield (Genus Thomasomys)	Microtus longicaudus subsp coronarius	
284		Mink_American	Microtus mexicanus	
285		Mink_Sea	Microtus miurus	
286		Mole (Family Talpidae)	Microtus montanus	

WA-KINGCO-20-0492-G-000244

	AE	AF	AG	AH
239	Flea (Nearctopsylla georginia)	Megabothris bisetis		
240	Flea (Nearctopsylla hamata)	Megabothris clantoni		
241	Flea (Nearctopsylla hyrtachi)	Megabothris groenlandicus		
242	Flea (Nearctopsylla jordani)	Megabothris jamesoni		
243	Flea (Nearctopsylla martyoungi)	Megabothris lucifer		
244	Flea (Nearctopsylla princei)	Megabothris princei		
245	Flea (Nearctopsylla traubi)	Megabothris quirini		
246	Flea (Neopysylla inopina)	Megabothris similus		
247	Flea (Nosopsyllus faciatus)	Megabothris smiti		
248	Flea (Nosopsyllus laeviceps)	Megabothris spenceri		
249	Flea (Nosopsyllus londiniensis)	Megabothris weaveri		
250	Flea (Nycteridopsylla chapini)	Megabothris wilsoni		
251	Flea (Nycteridopsylla vancouverensis)	Megarhroglossus becki		
252	Flea (Odontopsyllus dentatus)	Megarhroglossus divisus		
253	Flea (Odontopsyllus multispinosus)	Megarhroglossus procus		
254	Flea (Opisocrostis vespertalis)	Megarhroglossus sicamus		
255	Flea (Opisodasys (Opisocrostis) enoplus)	Megarhroglossus sp. (Genus)		
256	Flea (Opisodasys (Opisocrostis) hollandi)	Meringis agilis		
257	Flea (Opisodasys (Opisocrostis) nesiotus)	Meringis altipecten		
258	Flea (Opisodasys (Opisocrostis) perotensis)	Meringis arachis		
259	Flea (Opisodasys (Opisocrostis) pseudarctomys)	Meringis bilsingi		
260	Flea (Opisodasys (Opisocrostis) robustus)	Meringis californicus		
261	Flea (Opisodasys keeni)	Meringis cummingi		
262	Flea (Orchopeas cadens)	Meringis deserti		
263	Flea (Orchopeas dieteri)	Meringis dipodomys		
264	Flea (Orchopeas fulleri)	Meringis disparalis		
265	Flea (Orchopeas howardi)	Meringis facilis		
266	Flea (Orchopeas latens)	Meringis hubbardi		
267	Flea (Orchopeas leucopus)	Meringis jamesoni		
268	Flea (Orchopeas neotomae)	Meringis nidi		
269	Flea (Orchopeas nepos)	Meringis parkeri		
270	Flea (Orchopeas sexdentatus)	Meringis rectus		
271	Flea (Orchopeas sp. (Genus))	Meringis shannoni		
272	Flea (Order Siphonaptera)	Meringis sp. (Genus)		
273	Flea (Oropsylla (Opisocrostis) labis)	Meringis vitabilis		
274	Flea (Oropsylla alaskensis)	Miostenopsylla arctica		
275	Flea (Oropsylla arctomys)	Miostenopsylla traubi		
276	Flea (Oropsylla augustsoni)	Myodopsylla collinsi		
277	Flea (Oropsylla bruneri)	Myodopsylla gentilis		
278	Flea (Oropsylla hirsuta)	Myodopsylla globata		
279	Flea (Oropsylla idahoensis)	Myodopsylla nordina		
280	Flea (Oropsylla labis)	Myodopsylla setosa		
281	Flea (Oropsylla montana)	Myodopsyllaoides peircei		
282	Flea (Oropsylla oregonensis)	Nearctopsylla brooksi		
283	Flea (Oropsylla rupprestris)	Nearctopsylla genalis		
284	Flea (Oropsylla silantiewi)	Nearctopsylla georginia		
285	Flea (Oropsylla spenceri)	Nearctopsylla hamata		
286	Flea (Oropsylla stanfordi)	Nearctopsylla hyrtachi		

	AM	AN	AO	AP
239			Flea (Corrodopsylla barrerae)	Corrodopsylla barrerae
240			Flea (Corrodopsylla curvata)	Corrodopsylla curvata
241			Flea (Corrodopsylla hamiltoni)	Corrodopsylla hamiltoni
242			Flea (Corypsylla jordani)	Corypsylla jordani
243			Flea (Corypsylla kohlsi)	Corypsylla kohlsi
244			Flea (Corypsylla ornata)	Corypsylla ornata
245			Flea (Ctenocephalides canis)	Ctenocephalides canis
246			Flea (Ctenocephalides felis)	Ctenocephalides felis
247			Flea (Ctenophthalmus cabelleroi)	Ctenophthalmus cabelleroi
248			Flea (Ctenophthalmus cryptotis)	Ctenophthalmus cryptotis
249			Flea (Ctenophthalmus expansis)	Ctenophthalmus expansis
250			Flea (Ctenophthalmus haagi)	Ctenophthalmus haagi
251			Flea (Ctenophthalmus myodosus)	Ctenophthalmus myodosus
252			Flea (Ctenophthalmus pseudagyrtus)	Ctenophthalmus pseudagyrtus
253			Flea (Ctenophthalmus sanborni)	Ctenophthalmus sanborni
254			Flea (Ctenophyllus armatus)	Ctenophyllus armatus
255			Flea (Dactylopsylla bluei)	Dactylopsylla bluei
256			Flea (Dactylopsylla digitenua)	Dactylopsylla digitenua
257			Flea (Dactylopsylla megasoma)	Dactylopsylla megasoma
258			Flea (Dactylopsylla neomexicana)	Dactylopsylla neomexicana
259			Flea (Dactylopsylla pentachaeta)	Dactylopsylla pentachaeta
260			Flea (Dactylopsylla percernis)	Dactylopsylla percernis
261			Flea (Delotelis hollandi)	Delotelis hollandi
262			Flea (Delotelis telegoni)	Delotelis telegoni
263			Flea (Diamanus montanus)	Diamanus montanus
264			Flea (Dinopsyllus (Opisocrostis) hirsutus)	Dinopsyllus (Opisocrostis) hirsutus
265			Flea (Dolichopsyllus stylosus)	Dolichopsyllus stylosus
266			Flea (Doratopsylla blarinae)	Doratopsylla blarinae
267			Flea (Doratopsylla wisemani)	Doratopsylla wisemani
268			Flea (Echidnophaga (Amphalius) runatus)	Echidnophaga (Amphalius) runatus
269			Flea (Echidnophaga gallinacea)	Echidnophaga gallinacea
270			Flea (Epitedia cavernicola)	Epitedia cavernicola
271			Flea (Epitedia faceta)	Epitedia faceta
272			Flea (Epitedia neotomae)	Epitedia neotomae
273			Flea (Epitedia scapani)	Epitedia scapani
274			Flea (Epitedia stanfordi)	Epitedia stanfordi
275			Flea (Epitedia stewarti)	Epitedia stewarti
276			Flea (Epitedia wenmanni)	Epitedia wenmanni
277			Flea (Euhoplopsyllus glacialis affinis)	Euhoplopsyllus glacialis affinis
278			Flea (Euhoplopsyllus glacialis foxi)	Euhoplopsyllus glacialis foxi
279			Flea (Euhoplopsyllus glacialis glacialis)	Euhoplopsyllus glacialis glacialis
280			Flea (Euhoplopsyllus glacialis lynx)	Euhoplopsyllus glacialis lynx
281			Flea (Euhoplopsyllus glacialis)	Euhoplopsyllus glacialis
282			Flea (Eumolpianus (Ceratophyllus) ciliatus)	Eumolpianus (Ceratophyllus) ciliatus
283			Flea (Eumolpianus cyrturus)	Eumolpianus cyrturus
284			Flea (Eumolpianus eumolpi)	Eumolpianus eumolpi
285			Flea (Eumolpianus eutamiadis)	Eumolpianus eutamiadis
286			Flea (Eumolpianus fornacis)	Eumolpianus fornacis

	AQ	AR	AS	AT	AU	AV
239				Ctenophthalmus cryptotis		
240				Ctenophthalmus expansis		
241				Ctenophthalmus haagi		
242				Ctenophthalmus myodosus		
243				Ctenophthalmus pseudagyrtis		
244				Ctenophthalmus sanborni		
245				Ctenophyllus armatus		
246				Cynomys (Genus)		
247				Cynomys gunnisoni		
248				Cynomys leucurus		
249				Cynomys ludovicianus		
250				Cynomys mexicanus		
251				Cynomys parvidens		
252				Dactylopsylla bluei		
253				Dactylopsylla digitenua		
254				Dactylopsylla megasoma		
255				Dactylopsylla neomexicana		
256				Dactylopsylla pentachaeta		
257				Dactylopsylla percernis		
258				Dama dama		
259				Dasypus novemcinctus		
260				Delotelis hollandi		
261				Delotelis telegoni		
262				Dermacentor albipictus		
263				Dermacentor andersoni		
264				Dermacentor hunteri		
265				Dermacentor marginatus		
266				Dermacentor nitens		
267				Dermacentor occidentalis		
268				Dermacentor parumapertus		
269				Dermacentor reticulatus		
270				Dermacentor spp.		
271				Dermacentor variabilis		
272				Desmodus rotundus		
273				Diamanus montanus		
274				Diceros bicornis		
275				Didelphis virginiana		
276				Dinopsyllus (Opisocrostitis) hirsutus		
277				Dipodomys agilis		
278				Dipodomys deserti		
279				Dipodomys elator		
280				Dipodomys gravipes		
281				Dipodomys heermanni		
282				Dipodomys ingens		
283				Dipodomys insularis		
284				Dipodomys margaritae		
285				Dipodomys merriami		
286				Dipodomys microps		

	A	B	C
287		Staphylococcus aureus Detection - Foodborne Outbreak	Enterococcus raffinosus
288		Streptococcus (Beta Hemolytic Strep) Typing	Enterococcus species
289		Streptococcus (Catalase-Negative, Gram-Positive Coccus) Identification	Enterovirus
290		Streptococcus (Catalase-Negative, Gram-Positive Coccus) Identification and Antimi	Enterovirus A
291		Streptococcus ABCs Surveillance Study	Enterovirus A71
292		Streptococcus pneumoniae Typing	Enterovirus B
293		Streptococcus Study	Enterovirus C
294		Strongyloidiasis Serology	Enterovirus D
295		Syphilis Serology	Enterovirus D68
296		Tick Borne Encephalitis (TBE) Testing	Epidermophyton floccosum
297		Toxocariasis Serology	Erwinia species
298		Toxoplasmosis Special Study	Escherichia blattae
299		Treponema pallidum Molecular Detection Study	Escherichia coli
300		Treponema pallidum Molecular Typing Study	Escherichia coli, serogroup O157
301		Trichinellosis Serology	Escherichia coli, serotype O157:H7
302		Trichomonas Susceptibility	Escherichia fergusonii
303		Trypanosoma cruzi Molecular Detection - Insects	Escherichia species
304		Varicella Zoster Virus (VZV) Avidity	Eubacterium (Clostridium) barkeri
305		Varicella Zoster Virus (VZV) Genotyping (Clade Type)	Eubacterium species
306		Varicella Zoster Virus (VZV) Intrathecal Antibody Detection	Exiguobacterium aurantiacum
307		Varicella Zoster Virus (VZV) Serology	Exophiala dermatitidis
308		Varicella Zoster Virus Detection (Wild-type vs. Vaccine)	Exophiala moniliae
309		Vibrio cholerae Identification and Subtyping	Exophiala species
310		Vibrio cholerae Serology	Exophiala xenobiotica
311		Vibrio Subtyping	Exserohilum rostratum
312		Vibrio, Aeromonas, and Related Organisms Identification	Facklamia species
313		Vibrio, Aeromonas, and Related Organisms Study	Fasciola hepatica
314		Waterborne Parasite Special Study	Filarial worm
315		Yersinia (non-Y. pestis) and Other Enterobacterales Subtyping	Flavobacterium species
316		Yersinia (non-Y. pestis) and Other Enterobacterales Identification	Fly larvae
317		Yersinia pestis Culture and Identification	Fonsecaea compacta
318		Yersinia pestis Serology	Fonsecaea pedrosoi
319		Yersinia pestis Special Study	Fonsecaea species
320			Francisella novicida
321			Francisella species
322			Francisella tularensis
323			Francisella tularensis subsp holarctica
324			Francisella tularensis subsp mediasiatica
325			Francisella tularensis subsp tularensis
326			Fungus
327			Fusarium proliferatum
328			Fusarium solani
329			Fusarium species
330			Fusobacterium necrophorum
331			Fusobacterium species
332			Genus Lyssavirus
333			Geomyces pannorum
334			Giardia lamblia
335			Giardia species

	K	L	M	N
287	Wound drainage			
288	Wound exudate			
289	Wound_Surgical			
290				
291				
292				
293				
294				
295				
296				
297				
298				
299				
300				
301				
302				
303				
304				
305				
306				
307				
308				
309				
310				
311				
312				
313				
314				
315				
316				
317				
318				
319				
320				
321				
322				
323				
324				
325				
326				
327				
328				
329				
330				
331				
332				
333				
334				
335				

	AA	AB	AC	AD
287		Mole_Broad-footed	Microtus ochrogaster	
288		Mole_Eastern	Microtus oeconomus	
289		Mole_Red-footed	Microtus oregoni	
290		Mole_Snow	Microtus pennsylvanicus	
291		Mongoose (Family Herpestidae)	Microtus pinetorum	
292		Mongoose_Java (Indian)	Microtus quasiater	
293		Monkey (Generic name)	Microtus richardsoni	
294		Monkey_Brown capuchin	Microtus townsendii	
295		Monkey_Capuchin (Genus Cebus)	Microtus umbrosus	
296		Monkey_De Brazza's	Microtus xanthognathus	
297		Monkey_Owl	Molossidae (Family)	
298		Monkey_Squirrel, Common	Molossus ater	
299		Monkey_Tamarin (Genus Sanguinus)	Mormoops blainvillii	
300		Monkey_Tamarin, Cotton Top	Mormoops megalophylla	
301		Moose	Mus musculus	
302		Mouse (Generic name)	Muscardinus avellanarius	
303		Mouse, Northern Rock	Mustela (Genus)	
304		Mouse_Angel Island	Mustela erminea	
305		Mouse_Aztec	Mustela frenata	
306		Mouse_Black-eared	Mustela nigripes	
307		Mouse_Brush	Mustela nivalis subsp rixosa	
308		Mouse_Cactus	Mustela putorius subsp furo	
309		Mouse_California	Mustela siberica	
310		Mouse_Canyon	Myocastor coypus	
311		Mouse_Chihuahuan	Myotis (Genus)	
312		Mouse_Cotton	Myotis auriculus	
313		Mouse_Deer	Myotis austroriparius	
314		Mouse_Deer Burt's	Myotis californicus	
315		Mouse_Deer, Big	Myotis ciliolabrum	
316		Mouse_Deer, Blackish	Myotis evotis	
317		Mouse_Deer, Brown	Myotis grisescens	
318		Mouse_Deer, Chiapan	Myotis keenii	
319		Mouse_Deer, Crested-tailed	Myotis leibii	
320		Mouse_Deer, Dickey's	Myotis lucifugus	
321		Mouse_Deer, El Carrizo	Myotis occultus	
322		Mouse_Deer, Guatemalan	Myotis sodalis	
323		Mouse_Deer, Mexican	Myotis thysanodes	
324		Mouse_Deer, Michoacan	Myotis velifer	
325		Mouse_Deer, Nelson's Giant	Myotis vivesi	
326		Mouse_Deer, Northwestern	Myotis volans	
327		Mouse_Deer, Pemberton's	Myotis yumanensis	
328		Mouse_Deer, Puebla	Nasua (Genus)	
329		Mouse_Deer, Slender-tailed	Nasua narica	
330		Mouse_Deer, Stirton's	Nasua nasua	
331		Mouse_Deer, Thomas' Giant	Neotoma (Genus)	
332		Mouse_Deer, Yucatan	Neotoma albigula	
333		Mouse_Deer, Zacatecan	Neotoma anthonyi	
334		Mouse_Deer, Zempoaltepec	Neotoma augustapalata	
335		Mouse_Dormouse, Common	Neotoma bryanti	

	AE	AF	AG	AH
287	Flea (Oropsylla tuberculata cynomuris)	Nearctopsylla jordani		
288	Flea (Oropsylla tuberculata tuberculata)	Nearctopsylla martyoungi		
289	Flea (Oropsylla washingtonensis)	Nearctopsylla princei		
290	Flea (P. echinophagoides)	Nearctopsylla traubi		
291	Flea (Paratyphloceras oregonensis)	Neopysylla inopina		
292	Flea (Peromyscopsylla draco)	Nosopsyllus faciatus		
293	Flea (Peromyscopsylla ebrighti)	Nosopsyllus laeviceps		
294	Flea (Peromyscopsylla hamifer)	Nosopsyllus londiniensis		
295	Flea (Peromyscopsylla hesperomys)	Nycteridopsylla chapini		
296	Flea (Peromyscopsylla ostibirica)	Nycteridopsylla vancouverensis		
297	Flea (Peromyscopsylla scotti)	Odontopsyllus dentatus		
298	Flea (Peromyscopsylla selenis)	Odontopsyllus multispinosus		
299	Flea (Peromyscopsylla catatina)	Opisocrostis vespertalis		
300	Flea (Phalacropsylla allos)	Opisodasys (Opisocrostis) enoplus		
301	Flea (Phalacropsylla hamata)	Opisodasys (Opisocrostis) hollandi		
302	Flea (Phalacropsylla morlani)	Opisodasys (Opisocrostis) nesiotus		
303	Flea (Phalacropsylla nivalis)	Opisodasys (Opisocrostis) perotensis		
304	Flea (Phalacropsylla oregonensis)	Opisodasys (Opisocrostis) pseudarctomys		
305	Flea (Phalacropsylla paradisea)	Opisodasys (Opisocrostis) robustus		
306	Flea (Pleochaetis exilis)	Opisodasys keeni		
307	Flea (Pleochaetis mundus)	Orchopeas cadens		
308	Flea (Pleochaetis paramundus)	Orchopeas dieteri		
309	Flea (Pleochaetis sp. (Genus))	Orchopeas fulleri		
310	Flea (Plusaetis asetus)	Orchopeas howardi		
311	Flea (Plusaetis aztecus)	Orchopeas latens		
312	Flea (Plusaetis dolens)	Orchopeas leucopus		
313	Flea (Plusaetis mathesoni)	Orchopeas neotomae		
314	Flea (Plusaetis parus)	Orchopeas nepos		
315	Flea (Plusaetis ponsi)	Orchopeas sexdentatus		
316	Flea (Plusaetis sibynus)	Orchopeas sp. (Genus)		
317	Flea (Plusaetis soberoni)	Order Araneae		
318	Flea (Plusaetis vermiformis)	Order Mesostigmata		
319	Flea (Polygenis adocetus)	Order Phthiraptera		
320	Flea (Polygenis floridanus)	Order Siphonaptera		
321	Flea (Polygenis gwyni)	Oropsylla (Opisocrostis) labis		
322	Flea (Polygenis martinezbaezi)	Oropsylla alaskensis		
323	Flea (Polygenis odiosus)	Oropsylla arctomys		
324	Flea (Polygenis rozeboomi)	Oropsylla augustsoni		
325	Flea (Polygenis sp. (Genus))	Oropsylla bruneri		
326	Flea (Polygenis vazquezi)	Oropsylla hirsuta		
327	Flea (Polygenis vulcanius)	Oropsylla idahoensis		
328	Flea (Pulex alverazi)	Oropsylla labis		
329	Flea (Pulex irritans)	Oropsylla montana		
330	Flea (Pulex porcinus)	Oropsylla oregonensis		
331	Flea (Pulex simulans)	Oropsylla ruprestris		
332	Flea (Pulex sinoculus)	Oropsylla silantiewi		
333	Flea (Pulex sp. (Genus))	Oropsylla spenceri		
334	Flea (Rhadinopsylla arborea)	Oropsylla stanfordi		
335	Flea (Rhadinopsylla difficilis)	Oropsylla tuberculata cynomuris		

	AM	AN	AO	AP
287			Flea (Eumolpianus oraius)	Eumolpianus oraius
288			Flea (Eumolpianus polumus)	Eumolpianus polumus
289			Flea (Foxella ignota)	Foxella ignota
290			Flea (Geusibia ashcrafti)	Geusibia ashcrafti
291			Flea (Haemaphysalis leporispalustrus)	Haemaphysalis leporispalustrus
292			Flea (Haemaphysalis sp. (Genus))	Haemaphysalis sp. (Genus)
293			Flea (Hoplopsyllus anomalus)	Hoplopsyllus anomalus
294			Flea (Hoplopsyllus pectinatus)	Hoplopsyllus pectinatus
295			Flea (Hormopsylla kyriophila)	Hormopsylla kyriophila
296			Flea (Hystrichopsylla dippiei)	Hystrichopsylla dippiei
297			Flea (Hystrichopsylla kris)	Hystrichopsylla kris
298			Flea (Hystrichopsylla occidentalis linsdalei)	Hystrichopsylla occidentalis linsdalei
299			Flea (Hystrichopsylla occidentalis)	Hystrichopsylla occidentalis
300			Flea (Hystrichopsylla orophila)	Hystrichopsylla orophila
301			Flea (Hystrichopsylla schefferi)	Hystrichopsylla schefferi
302			Flea (Hystrichopsylla sp. (Genus))	Hystrichopsylla sp. (Genus)
303			Flea (Jellisoni doratopsylla)	Jellisonia doratopsylla
304			Flea (Jellisonia bonia)	Jellisonia bonia
305			Flea (Jellisonia bullisi)	Jellisonia bullisi
306			Flea (Jellisonia hayesi)	Jellisonia hayesi
307			Flea (Jellisonia ironsi)	Jellisonia ironsi
308			Flea (Jellisonia johnsonae)	Jellisonia johnsonae
309			Flea (Jellisonia klotsi)	Jellisonia klotsi
310			Flea (Jellisonia wisemani)	Jellisonia wisemani
311			Flea (Jordanopsylla allredi)	Jordanopsylla allredi
312			Flea (Kohlsia azuerensis)	Kohlsia azuerensis
313			Flea (Kohlsia campaniger)	Kohlsia campaniger
314			Flea (Kohlsia cora)	Kohlsia cora
315			Flea (Kohlsia felteni)	Kohlsia felteni
316			Flea (Kohlsia fourrieri)	Kohlsia fourrieri
317			Flea (Kohlsia gammonsi)	Kohlsia gammonsi
318			Flea (Kohlsia graphis)	Kohlsia graphis
319			Flea (Kohlsia keenani)	Kohlsia keenani
320			Flea (Kohlsia linni)	Kohlsia linni
321			Flea (Kohlsia martini)	Kohlsia martini
322			Flea (Kohlsia mojica)	Kohlsia mojica
323			Flea (Kohlsia ortizi)	Kohlsia ortizi
324			Flea (Kohlsia osgoodi)	Kohlsia osgoodi
325			Flea (Kohlsia pelaezi)	Kohlsia pelaezi
326			Flea (Kohlsia tiptoni)	Kohlsia tiptoni
327			Flea (Kohlsia traubi)	Kohlsia traubi
328			Flea (Kohlsia uniseta)	Kohlsia uniseta
329			Flea (Kohlsia whartoni)	Kohlsia whartoni
330			Flea (Leptopsylla segnis)	Leptopsylla segnis
331			Flea (Malaraeus eremicus)	Malaraeus eremicus
332			Flea (Malaraeus sinomus)	Malaraeus sinomus
333			Flea (Malaraeus sp. (Genus))	Malaraeus sp. (Genus)
334			Flea (Malaraeus telchinus)	Malaraeus telchinus
335			Flea (Malaraeus vonfintelis)	Malaraeus vonfintelis

	AQ	AR	AS	AT	AU	AV
287				Dipodomys nelsoni		
288				Dipodomys nitratoides		
289				Dipodomys ordii		
290				Dipodomys panamintinus		
291				Dipodomys phillipsii		
292				Dipodomys spectabilis		
293				Dipodomys stephensi		
294				Dipodomys venustus		
295				Dipodomys venustus subsp elephantinus		
296				Dolichopsyllus stylosus		
297				Doratopsylla blarinae		
298				Doratopsylla wissemanni		
299				Echidnophaga (Amphalius) runatus		
300				Echidnophaga gallinacea		
301				Enhydra lutris		
302				Epitedia cavernicola		
303				Epitedia faceta		
304				Epitedia neotomae		
305				Epitedia scapani		
306				Epitedia stanfordi		
307				Epitedia stewarti		
308				Epitedia wenmanni		
309				Eptesicus fuscus		
310				Equus (Genus)		
311				Equus burchellii		
312				Equus caballus		
313				Equus zebra		
314				Erethizon dorsatum		
315				Erinaceinae (Subfamily)		
316				Euderma maculatum		
317				Euhoplopsyllus glacialis		
318				Euhoplopsyllus glacialis affinis		
319				Euhoplopsyllus glacialis foxi		
320				Euhoplopsyllus glacialis glacialis		
321				Euhoplopsyllus glacialis lynx		
322				Eumolpianus (Ceratophyllus) ciliatus		
323				Eumolpianus cyrturus		
324				Eumolpianus eumolpi		
325				Eumolpianus eutamiadis		
326				Eumolpianus fornacis		
327				Eumolpianus oraius		
328				Eumolpianus polumus		
329				Eumops glacinus		
330				Eumops perotis		
331				Eumops underwoodi		
332				Family Culicidae		
333				Family Oestridae		
334				Family Simuliidae		
335				Felis catus		

	A	B	C
336			Gnathostoma species
337			Gordonia species
338			Gordonia sputi
339			Gordonia terrae
340			Gram positive coccobacillus (GPBC)
341			Gram-negative coccus
342			Gram-negative diplococcus
343			Gram-negative rod
344			Gram-positive coccus
345			Gram-positive rod
346			Gram-variable bacillus
347			Gram-variable coccobacillus
348			Gram-variable coccus
349			Gram-variable rod
350			Granulicatella adiacens
351			Granulicatella species
352			Grimontia hollisae
353			Haemophilus aphrophilus
354			Haemophilus ducreyi
355			Haemophilus haemolyticus
356			Haemophilus influenzae
357			Haemophilus influenzae, not B
358			Haemophilus parainfluenzae
359			Haemophilus paraphrophilus
360			Haemophilus species
361			Hafnia alvei
362			Hafnia species
363			Helcococcus kunzii
364			Helicobacter pylori
365			Helicobacter species
366			Helminthosporium species
367			Hepatitis A
368			Hepatitis B
369			Hepatitis C
370			Hepatitis, non A, B, or C
371			Histoplasma capsulatum
372			Histoplasma species
373			Hormographiella species
374			Human Immunodeficiency Virus (HIV)
375			Hymenolepis species
376			Inactivated Poliovirus
377			Influenza virus
378			Iodamoeba species
379			Isospora species
380			Ixodes Ovatus Ehrlichia
381			Janibacter species
382			Kingella kingae
383			Klebsiella aerogenes

	AA	AB	AC	AD
336		Mouse_False Canyon	Neotoma bunkeri	
337		Mouse_Florida	Neotoma cinerea	
338		Mouse_Golden	Neotoma floridana	
339		Mouse_Hairy-tailed Bolo	Neotoma fuscipes	
340		Mouse_Harvest (Genus Reithrodontomys)	Neotoma goldmani	
341		Mouse_Harvest, Chiriqui	Neotoma lepida	
342				
343		Mouse_Harvest, Darien	Neotoma martinensis	
344		Mouse_Harvest, Eastern	Neotoma mexicana	
345		Mouse_Harvest, Fulvous	Neotoma micropus	
346		Mouse_Harvest, Hairy	Neotoma nelsoni	
347		Mouse_Harvest, Mexican	Neotoma palatina	
348		Mouse_Harvest, Narrow-nosed	Neotoma phenax	
349		Mouse_Harvest, Plains	Neotoma stephensi	
350		Mouse_Harvest, Rodriguez's	Neotoma varia	
351		Mouse_Harvest, Saltmarsh	Neovison macrodon	
352		Mouse_Harvest, Short-nosed	Neovison vison	
353		Mouse_Harvest, Slender	Noctilio (Genus)	
354		Mouse_Harvest, Small-toothed	Noctilio leporinus	
355		Mouse_Harvest, Sonoran	Nycticeius humeralis	
356		Mouse_Harvest, Sumichrast's	Nyctinomops femorosaccus	
357		Mouse_Harvest, Volcano	Nyctinomops macrotis	
358		Mouse_Harvest, Western	Ochotona (Genus)	
359		Mouse_House	Ochotona princeps	
360		Mouse_Jumping, Meadow	Ochrotomys nuttalli	
361		Mouse_Jumping, Pacific	Odocoileus hemionus	
362		Mouse_Jumping, Western	Odocoileus hemionus subsp columbianus	
363		Mouse_Marsh	Odocoileus virginianus	
364		Mouse_Merriam's (Mesquite)	Oligoryzomys (Genus)	
365		Mouse_Nayarit	Ondatra zibethicus	
366		Mouse_Neonatal (Generic name)	Onychomys leucogaster	
367		Mouse_Northern Grasshopper	Onychomys torridus	
368		Mouse_Oldfield	Oreamnos (Genus)	
369		Mouse_Perote	Orxy (Genus)	
370		Mouse_Pinyon	Oryctolagus (Genus)	
371		Mouse_Plateau	Oryctolagus cuniculus	
372		Mouse_Pocket, Arizona	Oryx gazella	
373		Mouse_Pocket, Bailey's	Oryzomys subflavus	
374		Mouse_Pocket, California	Osgoodomys banderanus	
375		Mouse_Pocket, Desert	Ovis (Genus)	
376		Mouse_Pocket, Goldman's	Ovis aries	
377		Mouse_Pocket, Great Basin	Ovis canadensis	
378		Mouse_Pocket, Hispid	Ovis dalli	
379		Mouse_Pocket, Lined	Pan (Genus)	
380		Mouse_Pocket, Little	Panthera pardus	
381		Mouse_Pocket, Little Desert	Panthera leo	
382		Mouse_Pocket, Long-tailed	Panthera onca	
383		Mouse_Pocket, Merriam's	Panthera tigris	

AMERICAN
OVERSIGHT

	AE	AF	AG	AH
336	Flea (Rhadinopsylla fraterna)	Oropsylla tuberculata tuberculata		
337	Flea (Rhadinopsylla heiseri)	Oropsylla washingtonensis		
338	Flea (Rhadinopsylla linta)	P. echinophagoides		
339	Flea (Rhadinopsylla liventricosa)	Paratyphloceras oregonensis		
340	Flea (Rhadinopsylla media)	Pediculus sp (Genus) Nit, Louse		
341	Flea (Rhadinopsylla mexicana)	Peromyscopsylla draco		
342				
343	Flea (Rhadinopsylla multidenticulata)	Peromyscopsylla ebrighti		
344	Flea (Rhadinopsylla orama)	Peromyscopsylla hamifer		
345	Flea (Rhadinopsylla sectilis goodi)	Peromyscopsylla hesperomys		
346	Flea (Rhadinopsylla sectilis sectilis)	Peromyscopsylla ostsibirica		
347	Flea (Rhadinopsylla sp. (Genus))	Peromyscopsylla scotti		
348	Flea (Spicata bottaceps)	Peromyscopsylla selenis		
349	Flea (Spicata comis)	Peromyscopsylla catatina		
350	Flea (Spicata minidoka)	Phalacroscopsylla allos		
351	Flea (Spicata monticola)	Phalacroscopsylla hamata		
352	Flea (Spicata moorei)	Phalacroscopsylla morlani		
353	Flea (Spicata nuditenacula)	Phalacroscopsylla nivalis		
354	Flea (Spicata pacifica)	Phalacroscopsylla oregonensis		
355	Flea (Spicata rara)	Phalacroscopsylla paradisea		
356	Flea (Stenistomera alpina)	Pleochaetis exilis		
357	Flea (Stenistomera hubbardi)	Pleochaetis mundus		
358	Flea (Stenistomera macrodactyla)	Pleochaetis paramundus		
359	Flea (Stenoponia americana)	Pleochaetis sp. (Genus)		
360	Flea (Stenoponia ponera)	Plusaetis dolens		
361	Flea (Sternopsylla distincta texana)	Plusaetis vermiformis		
362	Flea (Sternopsylla distincta)	Plusaetis asetus		
363	Flea (Strepsylla dalmati)	Plusaetis aztecus		
364	Flea (Strepsylla davisae)	Plusaetis mathesoni		
365	Flea (Strepsylla fautini)	Plusaetis parus		
366	Flea (Strepsylla machadoi)	Plusaetis ponsi		
367	Flea (Strepsylla mina)	Plusaetis sibynus		
368	Flea (Strepsylla schmidt)	Plusaetis soberoni		
369	Flea (Strepsylla taluna)	Polygenis adocetus		
370	Flea (Strepsylla villai)	Polygenis floridanus		
371	Flea (Tarsopsylla octodecimdentata)	Polygenis gwyni		
372	Flea (Thrassis acamantis)	Polygenis martinezbaezi		
373	Flea (Thrassis aridis)	Polygenis odiosus		
374	Flea (Thrassis arizonensis)	Polygenis rozeboomi		
375	Flea (Thrassis bacchi)	Polygenis sp. (Genus)		
376	Flea (Thrassis fatus)	Polygenis vazquezi		
377	Flea (Thrassis francisi)	Polygenis vulcanius		
378	Flea (Thrassis pandorae)	Pulex alverazi		
379	Flea (Thrassis petiolatus)	Pulex irritans		
380	Flea (Thrassis sp. (Genus))	Pulex porcinus		
381	Flea (Thrassis spenceri)	Pulex simulans		
382	Flea (Thrassis stanfordi)	Pulex sinoculus		
383	Flea (Tiamastus cavicola)	Pulex sp. (Genus)		

	AM	AN	AO	AP
336			Flea (Margopsylla tolli)	Margopsylla tolli
337			Flea (Megabothris abantis)	Megabothris abantis
338			Flea (Megabothris acerbus)	Megabothris acerbus
339			Flea (Megabothris adversus)	Megabothris adversus
340			Flea (Megabothris asio megacolpus)	Megabothris asio megacolpus
341			Flea (Megabothris asio orectus)	Megabothris asio orectus
342				
343			Flea (Megabothris atrox)	Megabothris atrox
344			Flea (Megabothris bisetis)	Megabothris bisetis
345			Flea (Megabothris clantoni)	Megabothris clantoni
346			Flea (Megabothris groenlandicus)	Megabothris groenlandicus
347			Flea (Megabothris jamesoni)	Megabothris jamesoni
348			Flea (Megabothris lucifer)	Megabothris lucifer
349			Flea (Megabothris princei)	Megabothris princei
350			Flea (Megabothris quirini)	Megabothris quirini
351			Flea (Megabothris similus)	Megabothris similus
352			Flea (Megabothris smiti)	Megabothris smiti
353			Flea (Megabothris spenceri)	Megabothris spenceri
354			Flea (Megabothris weaveri)	Megabothris weaveri
355			Flea (Megabothris wilsoni)	Megabothris wilsoni
356			Flea (Megarthroglossus becki)	Megarthroglossus becki
357			Flea (Megarthroglossus divisus)	Megarthroglossus divisus
358			Flea (Megarthroglossus proculus)	Megarthroglossus proculus
359			Flea (Megarthroglossus sicamus)	Megarthroglossus sicamus
360			Flea (Megarthroglossus sp. (Genus))	Megarthroglossus sp. (Genus)
361			Flea (Meringis agilis)	Meringis agilis
362			Flea (Meringis altipecten)	Meringis altipecten
363			Flea (Meringis arachis)	Meringis arachis
364			Flea (Meringis bilsingi)	Meringis bilsingi
365			Flea (Meringis californicus)	Meringis californicus
366			Flea (Meringis cummingi)	Meringis cummingi
367			Flea (Meringis deserti)	Meringis deserti
368			Flea (Meringis dipodomys)	Meringis dipodomys
369			Flea (Meringis disparalis)	Meringis disparalis
370			Flea (Meringis facilis)	Meringis facilis
371			Flea (Meringis hubbardi)	Meringis hubbardi
372			Flea (Meringis jamesoni)	Meringis jamesoni
373			Flea (Meringis nidi)	Meringis nidi
374			Flea (Meringis parkeri)	Meringis parkeri
375			Flea (Meringis rectus)	Meringis rectus
376			Flea (Meringis shannoni)	Meringis shannoni
377			Flea (Meringis sp. (Genus))	Meringis sp. (Genus)
378			Flea (Meringis vitabilis)	Meringis vitabilis
379			Flea (Mioctenopsylla arctica)	Mioctenopsylla arctica
380			Flea (Mioctenopsylla traubi)	Mioctenopsylla traubi
381			Flea (Myodopsylla collinsi)	Myodopsylla collinsi
382			Flea (Myodopsylla gentilis)	Myodopsylla gentilis
383			Flea (Myodopsylla globata)	Myodopsylla globata

	AQ	AR	AS	AT	AU	AV
336				Felis silvestris		
337				Foxella ignota		
338				Galago (Genus)		
339				Galea spixii		
340				Gallus gallus		
341				Gazella (Genus)		
342						
343				Genus Chrysops		
344				Geomys arenarius		
345				Geomys bursarius		
346				Geomys personatus		
347				Geomys pinetis		
348				Gerbillus (Genus)		
349				Geusibia ashcrafti		
350				Giraffa camelopardalis		
351				Glaucomys (Genus)		
352				Glaucomys sabrinus		
353				Glaucomys volans		
354				Gorilla gorilla		
355				Gulo gulo		
356				Gulo gulo subsp luscus		
357				Habromys lepturus		
358				Habromys lophurus		
359				Haemaphysalis leporispalustris		
360				Haemaphysalis sp. (Genus)		
361				Haemaphysalis spp.		
362				Herpestes javanicus		
363				Herpestidae (Family)		
364				Hippotragus (Genus)		
365				Hippotragus equinus		
366				Hippotragus niger		
367				Hodomys alleni		
368				Hoplopsyllus anomalus		
369				Hoplopsyllus pectinatus		
370				Hormopsylla kyriophila		
371				Hystrichopsylla dippei		
372				Hystrichopsylla kris		
373				Hystrichopsylla occidentalis		
374				Hystrichopsylla occidentalis linsdalei		
375				Hystrichopsylla orophila		
376				Hystrichopsylla schefferi		
377				Hystrichopsylla sp. (Genus)		
378				Ictonyx striatus		
379				Idionycteris phyllotis		
380				Isthmomys flavidus		
381				Isthmomys pirrensis		
382				Ixodes affinis		
383				Ixodes angustus		

	A	B	C
384			Klebsiella oxytoca
385			Klebsiella pneumoniae
386			Klebsiella pneumoniae group
387			Klebsiella pneumoniae subsp. ozaenae
388			Klebsiella pneumoniae subsp. pneumoniae
389			Klebsiella species
390			Klebsiella variicola
391			Kluyvera cryocrescens
392			Kocuria kristinae
393			Kocuria species
394			Lactobacillus species
395			Lactococcus garviae
396			Lautropia mirabilis
397			Laxitextum bicolor
398			Lecythophora mutabilis
399			Legionella brunensis
400			Legionella longbeachae
401			Legionella pneumophila
402			Legionella pneumophila serogroup 1
403			Legionella pneumophila serogroup 14
404			Legionella species
405			Leishmania donovani
406			Leishmania species
407			Leptospira interrogans
408			Leptospira species
409			Leptotrichia buccalis
410			Leptotrichia species
411			Leuconostoc species
412			Leucosporidium scottii
413			Listeria ivanovii subsp. londoniensis
414			Listeria monocytogenes
415			Listeria species
416			Loa loa
417			Lomentospora prolificans
418			Luteococcus
419			Maggot
420			Malassezia furfur
421			Malassezia pachydermatis
422			Mansonella ozzardi
423			Mansonella perstans
424			Mansonella species
425			Measles virus
426			Microaerophilic bacteria
427			Microascus species

	AA	AB	AC	AD
384		Mouse_Pocket, Narrow-skulled	Pantherophis guttatus	
385		Mouse_Pocket, Nelson's	Papio (Genus)	
386		Mouse_Pocket, Olive-backed	Pappogeomys castanops	
387		Mouse_Pocket, Plains	Pecari tajacu	
388		Mouse_Pocket, Rock	Perdix perdix	
389		Mouse_Pocket, San Diego	Perognathus alticola	
390		Mouse_Pocket, San Joaquin	Perognathus amplus	
391		Mouse_Pocket, Silky	Perognathus fasciatus	
392		Mouse_Pocket, Sinaloa	Perognathus flavescens	
393		Mouse_Pocket, Spiny	Perognathus flavus	
394		Mouse_Pocket, White-eared	Perognathus inornatus	
395		Mouse_Pocket, Yellow-eared	Perognathus longimembris	
396		Mouse_San Esteban Island	Perognathus merriami	
397		Mouse_Santa Cruz	Perognathus parvus	
398		Mouse_Sitka	Perognathus parvus subsp xanthonotus	
399		Mouse_Slevin's	Peromyscus (Genus)	
400		Mouse_Southern Grasshopper	Peromyscus aztecus	
401		Mouse_White-ankled	Peromyscus boylii	
402		Mouse_White-footed Deer	Peromyscus bullatus	
403		Muskrat	Peromyscus californicus	
404		Nutria	Peromyscus caniceps	
405		Ocelot	Peromyscus crinitus	
406		Opossum_Virginia	Peromyscus dickeyi	
407		Orangutan	Peromyscus difficilis	
408		Oryx (Genus Oryx)	Peromyscus eremicus	
409		Otter_River	Peromyscus furvus	
410		Otter_Sea	Peromyscus gossypinus	
411		Owl (Generic name)	Peromyscus grandis	
412		Owl, Great Horned	Peromyscus guardia	
413		Oxen, True cattle (Genus Bos)	Peromyscus guatemalensis	
414		Oyster (Generic name)	Peromyscus keeni	
415		Panda_Giant	Peromyscus leucopus	
416		Panda_Red (Lesser)	Peromyscus maniculatus	
417		Partridge_Gray (Hungarian)	Peromyscus megalops	
418		Pig (Generic name)	Peromyscus mekisturus	
419		Pig_Feral	Peromyscus melanocarpus	
420		Pigeon (Generic name)	Peromyscus melanophrys	
421		Pika (Genus Ochotona)	Peromyscus melanotis	
422		Pika_American (Rocky Mountain)	Peromyscus merriami	
423		Polecat_European	Peromyscus mexicanus	
424		Porcupine	Peromyscus nastus	
425		Prairie dog (Genus Cynomys)	Peromyscus ochraventer	
426		Prairie Dog, Utah	Peromyscus pectoralis	
427		Prairie Dog_Black-tailed	Peromyscus pambertoni	

	AE	AF	AG	AH
384	Flea (Traubella neotomae)	Rhadinopsylla arborea		
385	Flea (Trichopsylloides oregonensis)	Rhadinopsylla difficilis		
386	Flea (Tunga monositus)	Rhadinopsylla fraterna		
387	Flea (Tunga penetrans)	Rhadinopsylla heiseri		
388	Flea (Xenopsylla brasiliensis)	Rhadinopsylla linta		
389	Flea (Xenopsylla cheopis)	Rhadinopsylla liventricosa		
390	Flea (Xenopsylla eridos)	Rhadinopsylla media		
391	Flea (Xenopsylla philoxera)	Rhadinopsylla mexicana		
392	Flea (Xenopsylla phyllomae)	Rhadinopsylla multidenticulata		
393	Flea (Xenopsylla vexabilis)	Rhadinopsylla orama		
394	Fly	Rhadinopsylla sectilis goodi		
395	Hornet	Rhadinopsylla sectilis sectilis		
396	Kissing bug	Rhadinopsylla sp. (Genus)		
397	Lice (Order Phthiraptera)	Rhipicephalus microplus		
398	Maggot	Rhipicephalus sanguineus		
399	Millipede (Class Diplopoda)	Rhipicephalus spp.		
400	Mite (Order Mesostigmata)	Simulium nigricoxum		
401	Mosquitoes (Family Culicidae)	Spicata bottaceps		
402	Nit, Louse	Spicata comis		
403	Spiders (Order Araneae)	Spicata minidoka		
404	Tick (Amblyomma americanum)	Spicata monticola		
405	Tick (Amblyomma dubitatum)	Spicata moorei		
406	Tick (Amblyomma imitator)	Spicata nuditenacula		
407	Tick (Amblyomma inornatum)	Spicata pacifica		
408	Tick (Amblyomma interandinum)	Spicata rara		
409	Tick (Amblyomma maculatum)	Stenistomera alpina		
410	Tick (Amblyomma ovale)	Stenistomera hubbardi		
411	Tick (Amblyomma patinoi)	Stenistomera macrodactyla		
412	Tick (Amblyomma sculptum)	Stenoponia americana		
413	Tick (Amblyomma spp.)	Stenoponia ponera		
414	Tick (Amblyomma tonelliae)	Sternopsylla distincta		
415	Tick (Amblyomma triste)	Sternopsylla distincta texana		
416	Tick (Amblyomma tuberculatum)	Strepsylla dalmati		
417	Tick (Amblyomma variegatum)	Strepsylla davisae		
418	Tick (Amblyomma mixtum)	Strepsylla fautini		
419	Tick (Dermacentor albipictus)	Strepsylla machadoi		
420	Tick (Dermacentor andersoni)	Strepsylla mina		
421	Tick (Dermacentor hunteri)	Strepsylla schmidtii		
422	Tick (Dermacentor marginatus)	Strepsylla taluna		
423	Tick (Dermacentor nitens)	Strepsylla villai		
424	Tick (Dermacentor occidentalis)	Subfamily Triatominae		
425	Tick (Dermacentor parumapertus)	Suborder Ixodides		
426	Tick (Dermacentor reticulatus)	Subphylum Crustacea		
427	Tick (Dermacentor spp.)	Tarsopsylla octodecimdentata		

	AM	AN	AO	AP
384			Flea (Myodopsylla nordina)	Myodopsylla nordina
385			Flea (Myodopsylla setosa)	Myodopsylla setosa
386			Flea (Myodopsyllaoides peircei)	Myodopsyllaoides peircei
387			Flea (Nearctopsylla brooksi)	Nearctopsylla brooksi
388			Flea (Nearctopsylla genalis)	Nearctopsylla genalis
389			Flea (Nearctopsylla georginia)	Nearctopsylla georginia
390			Flea (Nearctopsylla hamata)	Nearctopsylla hamata
391			Flea (Nearctopsylla hyrtachi)	Nearctopsylla hyrtachi
392			Flea (Nearctopsylla jordani)	Nearctopsylla jordani
393			Flea (Nearctopsylla martyoungi)	Nearctopsylla martyoungi
394			Flea (Nearctopsylla princei)	Nearctopsylla princei
395			Flea (Nearctopsylla traubi)	Nearctopsylla traubi
396			Flea (Neopsylla inopina)	Neopsylla inopina
397			Flea (Nosopsyllus faciatus)	Nosopsyllus faciatus
398			Flea (Nosopsyllus laeviceps)	Nosopsyllus laeviceps
399			Flea (Nosopsyllus londiniensis)	Nosopsyllus londiniensis
400			Flea (Nycteridopsylla chapini)	Nycteridopsylla chapini
401			Flea (Nycteridopsylla vancouverensis)	Nycteridopsylla vancouverensis
402			Flea (Odontopsyllus dentatus)	Odontopsyllus dentatus
403			Flea (Odontopsyllus multispinosus)	Odontopsyllus multispinosus
404			Flea (Opisocrostis vespertalis)	Opisocrostis vespertalis
405			Flea (Opisodasys (Opisocrostis) enoplus)	Opisodasys (Opisocrostis) enoplus
406			Flea (Opisodasys (Opisocrostis) hollandi)	Opisodasys (Opisocrostis) hollandi
407			Flea (Opisodasys (Opisocrostis) nesiotus)	Opisodasys (Opisocrostis) nesiotus
408			Flea (Opisodasys (Opisocrostis) perotensis)	Opisodasys (Opisocrostis) perotensis
409			Flea (Opisodasys (Opisocrostis) pseudarctomys)	Opisodasys (Opisocrostis) pseudarctomys
410			Flea (Opisodasys (Opisocrostis) robustus)	Opisodasys (Opisocrostis) robustus
411			Flea (Opisodasys keeni)	Opisodasys keeni
412			Flea (Orchopeas cadens)	Orchopeas cadens
413			Flea (Orchopeas dieteri)	Orchopeas dieteri
414			Flea (Orchopeas fulleri)	Orchopeas fulleri
415			Flea (Orchopeas howardi)	Orchopeas howardi
416			Flea (Orchopeas latens)	Orchopeas latens
417			Flea (Orchopeas leucopus)	Orchopeas leucopus
418			Flea (Orchopeas neotomae)	Orchopeas neotomae
419			Flea (Orchopeas nepos)	Orchopeas nepos
420			Flea (Orchopeas sexdentatus)	Orchopeas sexdentatus
421			Flea (Orchopeas sp. (Genus))	Orchopeas sp. (Genus)
422			Flea (Order Siphonaptera)	Order Siphonaptera
423			Flea (Oropsylla (Opisocrostis) labis)	Oropsylla (Opisocrostis) labis
424			Flea (Oropsylla alaskensis)	Oropsylla alaskensis
425			Flea (Oropsylla arctomys)	Oropsylla arctomys
426			Flea (Oropsylla augustsoni)	Oropsylla augustsoni
427			Flea (Oropsylla bruneri)	Oropsylla bruneri

	AQ	AR	AS	AT	AU	AV
384				<i>Ixodes brunneus</i>		
385				<i>Ixodes cookei</i>		
386				<i>Ixodes dentatus</i>		
387				<i>Ixodes kingi</i>		
388				<i>Ixodes marxi</i>		
389				<i>Ixodes muris</i>		
390				<i>Ixodes ovatus</i>		
391				<i>Ixodes pacificus</i>		
392				<i>Ixodes persulcatus</i>		
393				<i>Ixodes ricinus</i>		
394				<i>Ixodes scapularis</i>		
395				<i>Ixodes sculptus</i>		
396				<i>Ixodes spp.</i>		
397				<i>Jellisonia bonia</i>		
398				<i>Jellisonia bullisi</i>		
399				<i>Jellisonia doratopsylla</i>		
400				<i>Jellisonia hayesi</i>		
401				<i>Jellisonia ironsi</i>		
402				<i>Jellisonia johnsonae</i>		
403				<i>Jellisonia klotsi</i>		
404				<i>Jellisonia wisemani</i>		
405				<i>Jordanopsylla allredi</i>		
406				<i>Kerodon rupestris</i>		
407				<i>Kohlsia azuerensis</i>		
408				<i>Kohlsia campaniger</i>		
409				<i>Kohlsia cora</i>		
410				<i>Kohlsia felteni</i>		
411				<i>Kohlsia fournieri</i>		
412				<i>Kohlsia gammonsi</i>		
413				<i>Kohlsia graphis</i>		
414				<i>Kohlsia keenani</i>		
415				<i>Kohlsia linni</i>		
416				<i>Kohlsia martini</i>		
417				<i>Kohlsia mojica</i>		
418				<i>Kohlsia ortizi</i>		
419				<i>Kohlsia osgoodi</i>		
420				<i>Kohlsia pelaezi</i>		
421				<i>Kohlsia tiptoni</i>		
422				<i>Kohlsia traubi</i>		
423				<i>Kohlsia uniseta</i>		
424				<i>Kohlsia whartoni</i>		
425				<i>Lagomorpha (Order)</i>		
426				<i>Lama glama</i>		
427				<i>Lama guanicoe</i>		

	A	B	C
428			Microbacterium species
429			Micrococcus species
430			Microsporidia (Phylum)
431			Microsporum canis
432			Microsporum gypseum
433			Microsporum nanum
434			Microsporum species
435			Middle East respiratory syndrome coronavirus
436			Monkeypox virus
437			Moraxella species
438			Morganella morganii
439			Morganella morganii subsp. morganii
440			Morganella species
441			Mucor species
442			Mumps virus
443			Mycobacterium abscessus
444			Mycobacterium abscessus/chelonae complex
445			Mycobacterium africanum
446			Mycobacterium asiaticum
447			Mycobacterium aurum
448			Mycobacterium avium
449			Mycobacterium avium-intracellulare group
450			Mycobacterium bolletii
451			Mycobacterium bovis
452			Mycobacterium bovis (BCG)
453			Mycobacterium canariasense
454			Mycobacterium celatum
455			Mycobacterium chelonae
456			Mycobacterium chimaera
457			Mycobacterium chitae
458			Mycobacterium cosmeticum
459			Mycobacterium diernhoferi
460			Mycobacterium fallax
461			Mycobacterium flavescens
462			Mycobacterium fortuitum
463			Mycobacterium fortuitum complex
464			Mycobacterium fortuitum/peregrinum group
465			Mycobacterium frederiksbergense
466			Mycobacterium gastri
467			Mycobacterium gilvum
468			Mycobacterium goodii
469			Mycobacterium gordonae
470			Mycobacterium haemophilum
471			Mycobacterium heckeshornense
472			Mycobacterium immunogenum
473			Mycobacterium interjectum
474			Mycobacterium intermedium

	AA	AB	AC	AD
428		Prairie Dog_Gunnison's	Peromyscus perfulvus	
429		Prairie Dog_Mexican	Peromyscus polionotus	
430		Prairie Dog_White-tailed	Peromyscus polius	
431		Primate (Order Primates)	Peromyscus pseudocrinitus	
432		Primate_Nonhuman (Generic name)	Peromyscus sejugis	
433		Quail (Generic name)	Peromyscus simulus	
434		Rabbit (Generic name)	Peromyscus sitkensis	
435		Rabbit_Brush	Peromyscus slevini	
436		Rabbit_Cottontail, Desert	Peromyscus stephani	
437		Rabbit_Cottontail, Eastern	Peromyscus stirtoni	
438		Rabbit_Cottontail, Mexican	Peromyscus truei	
439		Rabbit_Cottontail, New England	Peromyscus yucatanicus	
440		Rabbit_Cottontail, Tres Marias	Peromyscus zarhynchus	
441		Rabbit_Cottontails (Genus Sylvilagus)	Petaurus breviceps	
442		Rabbit_European	Petrogale (Genus)	
443		Rabbit_European (Genus Oryctolagus)	Phenacomys intermedius	
444		Rabbit_Forest	Phoca vitulina	
445		Rabbit_Marsh	Phyllostomus (Genus)	
446		Rabbit_Nuttall's	Phyllostomus hastatus	
447		Rabbit_Omilteme	Physignathus cocincinus	
448		Rabbit_Pygmy	Pipistrellus hesperus	
449		Rabbit_San Jose Brush	Pipistrellus subflavus	
450		Rabbit_Swamp	Pituophis melanoleucus	
451		Raccoon, Common	Plecotus townsendii	
452		Raccoon_Cozumel (Pygmy)	Podomys floridanus	
453		Raccoon_Crab-eating	Pongo pygmaeus	
454		Rat (Genus Rattus)	Potos flavus	
455		Rat_Black (Roof)	Primates (Order)	
456		Rat_Cotton	Procyon cancrivorus	
457		Rat_Cotton, Arizona	Procyon lotor	
458		Rat_Cotton, White-eared	Procyon pygmaeus	
459		Rat_Cotton, Yellow-nosed	Pteronotus macleayi	
460		Rat_Cotton, Zacatecan (Tawny-bellied)	Pteronotus parnelli	
461		Rat_Himalayan	Pteronotus quadridens	
462		Rat_Hispid Cotton	Pteropus (Genus)	
463		Rat_Isthmus, Mount Pirri	Pteropus giganteus	
464		Rat_Norway	Pteropus rodricensis	
465		Rat_Polynesian	Puma concolor	
466		Rat_Pygmy rice (Genus Oligoryzomys)	Puma yagouaroundi	
467		Rat_Terraced rice	Pythonidae (Family)	
468		Rat_Woosnam's Brush-furred	Rangifer tarandus	
469		Rat_Yellow Isthmus	Rattus (Genus)	
470		Rattlesnake_Aruba Island	Rattus exulans	
471		Rattlesnake_Tiger	Rattus nitidus	
472		Redpoll_Common	Rattus norvegicus	
473		Reindeer (Caribou)	Rattus rattus	
474		Reptile (Class Reptilia)	Reithrodontomys (Genus)	

	AE	AF	AG	AH
428	Tick (Dermacentor variabilis)	Thrassis acamantis		
429	Tick (Haemaphysalis spp.)	Thrassis aridis		
430	Tick (Ixodes affinis)	Thrassis arizonensis		
431	Tick (Ixodes angustus)	Thrassis bacchi		
432	Tick (Ixodes brunneus)	Thrassis fotus		
433	Tick (Ixodes cookei)	Thrassis francisi		
434	Tick (Ixodes dentatus)	Thrassis pandorae		
435	Tick (Ixodes kingi)	Thrassis petiolatus		
436	Tick (Ixodes marxi)	Thrassis sp. (Genus)		
437	Tick (Ixodes muris)	Thrassis spenceri		
438	Tick (Ixodes ovatus)	Thrassis stanfordi		
439	Tick (Ixodes pacificus)	Tiamastus cavicola		
440	Tick (Ixodes persulcatus)	Traubella neotomae		
441	Tick (Ixodes ricinus)	Trichopsylloides oregonensis		
442	Tick (Ixodes scapularis)	Tunga monositus		
443	Tick (Ixodes sculptus)	Tunga penetrans		
444	Tick (Ixodes spp.)	Unknown		
445	Tick (Rhipicephalus microplus)	Xenopsylla brasiliensis		
446	Tick (Rhipicephalus sanguineus)	Xenopsylla cheopis		
447	Tick (Rhipicephalus spp.)	Xenopsylla eridos		
448	Ticks (Suborder Ixodides)	Xenopsylla philoxera		
449	Tongueworm	Xenopsylla phyllomae		
450	Unknown	Xenopsylla vexabilis		
451				
452				
453				
454				
455				
456				
457				
458				
459				
460				
461				
462				
463				
464				
465				
466				
467				
468				
469				
470				
471				
472				
473				
474				

	AM	AN	AO	AP
428			Flea (<i>Oropsylla hirsuta</i>)	<i>Oropsylla hirsuta</i>
429			Flea (<i>Oropsylla idahoensis</i>)	<i>Oropsylla idahoensis</i>
430			Flea (<i>Oropsylla labis</i>)	<i>Oropsylla labis</i>
431			Flea (<i>Oropsylla montana</i>)	<i>Oropsylla montana</i>
432			Flea (<i>Oropsylla oregonensis</i>)	<i>Oropsylla oregonensis</i>
433			Flea (<i>Oropsylla ruprestris</i>)	<i>Oropsylla ruprestris</i>
434			Flea (<i>Oropsylla silantiewi</i>)	<i>Oropsylla silantiewi</i>
435			Flea (<i>Oropsylla spenceri</i>)	<i>Oropsylla spenceri</i>
436			Flea (<i>Oropsylla stanfordi</i>)	<i>Oropsylla stanfordi</i>
437			Flea (<i>Oropsylla tuberculata cynomuris</i>)	<i>Oropsylla tuberculata cynomuris</i>
438			Flea (<i>Oropsylla tuberculata tuberculata</i>)	<i>Oropsylla tuberculata tuberculata</i>
439			Flea (<i>Oropsylla washingtonensis</i>)	<i>Oropsylla washingtonensis</i>
440			Flea (<i>P. echinophagoides</i>)	<i>P. echinophagoides</i>
441			Flea (<i>Paratyphloceras oregonensis</i>)	<i>Paratyphloceras oregonensis</i>
442			Flea (<i>Peromyscopsylla draco</i>)	<i>Peromyscopsylla draco</i>
443			Flea (<i>Peromyscopsylla ebrighti</i>)	<i>Peromyscopsylla ebrighti</i>
444			Flea (<i>Peromyscopsylla hamifer</i>)	<i>Peromyscopsylla hamifer</i>
445			Flea (<i>Peromyscopsylla hesperomys</i>)	<i>Peromyscopsylla hesperomys</i>
446			Flea (<i>Peromyscopsylla ostsibirica</i>)	<i>Peromyscopsylla ostsibirica</i>
447			Flea (<i>Peromyscopsylla scotti</i>)	<i>Peromyscopsylla scotti</i>
448			Flea (<i>Peromyscopsylla selenis</i>)	<i>Peromyscopsylla selenis</i>
449			Flea (<i>Peromyscopsylla catatina</i>)	<i>Peromyscopsylla catatina</i>
450			Flea (<i>Phalacropsylla allos</i>)	<i>Phalacropsylla allos</i>
451			Flea (<i>Phalacropsylla hamata</i>)	<i>Phalacropsylla hamata</i>
452			Flea (<i>Phalacropsylla morlani</i>)	<i>Phalacropsylla morlani</i>
453			Flea (<i>Phalacropsylla nivalis</i>)	<i>Phalacropsylla nivalis</i>
454			Flea (<i>Phalacropsylla oregonensis</i>)	<i>Phalacropsylla oregonensis</i>
455			Flea (<i>Phalacropsylla paradisea</i>)	<i>Phalacropsylla paradisea</i>
456			Flea (<i>Pleochaetis exilis</i>)	<i>Pleochaetis exilis</i>
457			Flea (<i>Pleochaetis mundus</i>)	<i>Pleochaetis mundus</i>
458			Flea (<i>Pleochaetis paramundus</i>)	<i>Pleochaetis paramundus</i>
459			Flea (<i>Pleochaetis</i> sp. (Genus))	<i>Pleochaetis</i> sp. (Genus)
460			Flea (<i>Plusaetis asetis</i>)	<i>Plusaetis asetis</i>
461			Flea (<i>Plusaetis aztecus</i>)	<i>Plusaetis aztecus</i>
462			Flea (<i>Plusaetis dolens</i>)	<i>Plusaetis dolens</i>
463			Flea (<i>Plusaetis mathesoni</i>)	<i>Plusaetis mathesoni</i>
464			Flea (<i>Plusaetis parus</i>)	<i>Plusaetis parus</i>
465			Flea (<i>Plusaetis ponsi</i>)	<i>Plusaetis ponsi</i>
466			Flea (<i>Plusaetis sibynus</i>)	<i>Plusaetis sibynus</i>
467			Flea (<i>Plusaetis soberoni</i>)	<i>Plusaetis soberoni</i>
468			Flea (<i>Plusaetis vermiformis</i>)	<i>Plusaetis vermiformis</i>
469			Flea (<i>Polygenis adocetus</i>)	<i>Polygenis adocetus</i>
470			Flea (<i>Polygenis floridanus</i>)	<i>Polygenis floridanus</i>
471			Flea (<i>Polygenis gwyni</i>)	<i>Polygenis gwyni</i>
472			Flea (<i>Polygenis martinezbaezi</i>)	<i>Polygenis martinezbaezi</i>
473			Flea (<i>Polygenis odiosus</i>)	<i>Polygenis odiosus</i>
474			Flea (<i>Polygenis rozeboomi</i>)	<i>Polygenis rozeboomi</i>

	AQ	AR	AS	AT	AU	AV
428				Lama pacos		
429				Larus delawarensis		
430				Lasionycteris noctivagans		
431				Lasiurus blossevillei		
432				Lasiurus borealis		
433				Lasiurus cinereus		
434				Lasiurus ega		
435				Lasiurus intermedius		
436				Lasiurus seminolus		
437				Lemmiscus curtatus		
438				Lemuridae (Family)		
439				Leopardus pardalis		
440				Leopardus tigrinus		
441				Leopardus wiedii		
442				Leptonycteris curasoae		
443				Leptonycteris nivalis		
444				Leptopsylla segnis		
445				Lepus (Genus)		
446				Lepus alleni		
447				Lepus americanus		
448				Lepus arcticus		
449				Lepus californicus		
450				Lepus callotis subsp callotis		
451				Lepus callotis subsp gaillardi		
452				Lepus europaeus		
453				Lepus flavigularis		
454				Lepus insularis		
455				Lepus othus		
456				Lepus townsendii		
457				Lingulata (Genus)		
458				Lontra canadensis		
459				Lophuromys woosnami		
460				Loxodonta africana		
461				Lynx canadensis		
462				Lynx rufus		
463				Macaca (Genus)		
464				Macaca fuscata		
465				Macaca mulatta		
466				Macropus (Genus)		
467				Macropus robustus		
468				Macropus rufus		
469				Macrotus californicus		
470				Macrotus waterhousii		
471				Malaraeus eremicus		
472				Malaraeus sinomus		
473				Malaraeus sp. (Genus)		
474				Malaraeus telchinus		

	A	B	C
475			Mycobacterium intracellulare
476			Mycobacterium kansasii
477			Mycobacterium kubicae
478			Mycobacterium lentiflavum
479			Mycobacterium mageritense
480			Mycobacterium malmoense
481			Mycobacterium marinum
482			Mycobacterium massiliense
483			Mycobacterium microti
484			Mycobacterium mucogenicum
485			Mycobacterium nebraskense
486			Mycobacterium neoaurum
487			Mycobacterium nonchromogenicum
488			Mycobacterium parafortuitum
489			Mycobacterium parascrofulaceum
490			Mycobacterium peregrinum
491			Mycobacterium scrofulaceum
492			Mycobacterium shimoidei
493			Mycobacterium simiae
494			Mycobacterium smegmatis
495			Mycobacterium species
496			Mycobacterium szulgai
497			Mycobacterium terrae
498			Mycobacterium triplex
499			Mycobacterium tuberculosis
500			Mycobacterium tuberculosis complex
501			Mycobacterium tuberculosis complex (not BCG)
502			Mycobacterium tusciae
503			Mycobacterium ulcerans
504			Mycobacterium vaccae
505			Mycobacterium xenopi
506			Mycobacterium, non-TB (MOTT)
507			Mycoplasma pneumoniae
508			Mycoplasma species
509			Naegleria fowleri
510			Naegleria species
511			Neisseria gonorrhoeae
512			Neisseria kochii
513			Neisseria lactamica
514			Neisseria macacae
515			Neisseria meningitidis
516			Neisseria mucosa
517			Neisseria species
518			Neisseria weaveri
519			Nematode
520			Neosartorya species
521			Nigrospora species
522			Nitrobacter species
523			Nocardia abscessus

	AA	AB	AC	AD
475		Rhinoceros_Black	Reithrodontomys brevirostris	
476		Rhinoceros_White	Reithrodontomys burti	
477		Rodent (Order Rodentia)	Reithrodontomys chrysopsis	
478		Sea_Lion_California	Reithrodontomys creper	
479		Seal (Generic name)	Reithrodontomys darienensis	
480		Seal_Harbor	Reithrodontomys fulvescens	
481		Sheep	Reithrodontomys gracilis	
482		Sheep (Genus Ovis)	Reithrodontomys hirsutus	
483		Sheep_Bighorn	Reithrodontomys humulis	
484		Sheep_Dall's	Reithrodontomys megalotis	
485		Shrew_American Short-tailed (Genus Blarina)	Reithrodontomys mexicanus	
486		Shrew_Arctic	Reithrodontomys microdon	
487		Shrew_Carmen Mountain	Reithrodontomys montanus	
488		Shrew_Dwarf	Reithrodontomys raviventris	
489		Shrew_Gaspe	Reithrodontomys rodriguezi	
490		Shrew_Glacier Bay Water	Reithrodontomys sumichrasti	
491		Shrew_House	Reithrodontomys tenuirostris	
492		Shrew_Inyo	Reptilia (Class)	
493		Shrew_Large-toothed	Rhombomys opimus	
494		Shrew_Least	Rodentia (Order)	
495		Shrew_Long-tailed	Rousettus aegyptiacus	
496		Shrew_Masked	Rousettus lanosus	
497		Shrew_Merriam's	Saguinus (Genus)	
498		Shrew_Mexican Long-tailed	Saguinus oedipus	
499		Shrew_Mt. Lyell	Saimiri sciureus	
500		Shrew_Ornate	Scalopus aquaticus	
501		Shrew_Pacific Water	Scapanus latimanus	
502		Shrew_Preble's	Scapanus orarius	
503		Shrew_Pribilof	Scapanus townsendii	
504		Shrew_Pygmy	Sciuridae (Family)	
505		Shrew_San Cristobal	Sciurus aberti	
506		Shrew_Santa Catalina	Sciurus alleni	
507		Shrew_Saussure's	Sciurus arizonensis	
508		Shrew_Sclater's	Sciurus aureogaster	
509		Shrew_Smoky	Sciurus carolinensis	
510		Shrew_Southeastern	Sciurus coliaei	
511		Shrew_St. Lawrence Island	Sciurus deppei	
512		Shrew_Trowbridge's	Sciurus granatensis	
513		Shrew_Vagrant	Sciurus griseus	
514		Shrew_Verapaz	Sciurus nayaritensis	
515		Shrew_Water	Sciurus niger cinereus	
516		Siskin_Pine (Eurasian)	Sciurus oculatus	
517		Skunk (Family Mephitidae)	Sciurus richmondi	
518		Skunk_Eastern Hog-nosed	Sciurus variegatoides	
519		Skunk_Hooded	Sciurus vulgaris	
520		Skunk_Spotted (Genus)	Sciurus yucatanensis	
521		Skunk_Spotted, Eastern	Sciurus (Genus)	
522		Skunk_Spotted, Pygmy	Serpentes (Suborder)	
523		Skunk_Spotted, Southern	Sigmodon alleni	

WA-KINGCO-20-0492-G-000270

	AM	AN	AO	AP
475			Flea (Polygenis sp. (Genus))	Polygenis sp. (Genus)
476			Flea (Polygenis vazquezi)	Polygenis vazquezi
477			Flea (Polygenis vulcanius)	Polygenis vulcanius
478			Flea (Pulex alverazi)	Pulex alverazi
479			Flea (Pulex irritans)	Pulex irritans
480			Flea (Pulex porcinus)	Pulex porcinus
481			Flea (Pulex simulans)	Pulex simulans
482			Flea (Pulex sinoculus)	Pulex sinoculus
483			Flea (Pulex sp. (Genus))	Pulex sp. (Genus)
484			Flea (Rhadinopsylla arborea)	Rhadinopsylla arborea
485			Flea (Rhadinopsylla difficilis)	Rhadinopsylla difficilis
486			Flea (Rhadinopsylla fraterna)	Rhadinopsylla fraterna
487			Flea (Rhadinopsylla heiseri)	Rhadinopsylla heiseri
488			Flea (Rhadinopsylla linta)	Rhadinopsylla linta
489			Flea (Rhadinopsylla liventricosa)	Rhadinopsylla liventricosa
490			Flea (Rhadinopsylla media)	Rhadinopsylla media
491			Flea (Rhadinopsylla mexicana)	Rhadinopsylla mexicana
492			Flea (Rhadinopsylla multidenticulata)	Rhadinopsylla multidenticulata
493			Flea (Rhadinopsylla orama)	Rhadinopsylla orama
494			Flea (Rhadinopsylla sectilis goodi)	Rhadinopsylla sectilis goodi
495			Flea (Rhadinopsylla sectilis sectilis)	Rhadinopsylla sectilis sectilis
496			Flea (Rhadinopsylla sp. (Genus))	Rhadinopsylla sp. (Genus)
497			Flea (Spicata bottaceps)	Spicata bottaceps
498			Flea (Spicata comis)	Spicata comis
499			Flea (Spicata minidoka)	Spicata minidoka
500			Flea (Spicata monticola)	Spicata monticola
501			Flea (Spicata moorei)	Spicata moorei
502			Flea (Spicata nuditenacula)	Spicata nuditenacula
503			Flea (Spicata pacifica)	Spicata pacifica
504			Flea (Spicata rara)	Spicata rara
505			Flea (Stenistomera alpina)	Stenistomera alpina
506			Flea (Stenistomera hubbardi)	Stenistomera hubbardi
507			Flea (Stenistomera macrodactyla)	Stenistomera macrodactyla
508			Flea (Stenoponia americana)	Stenoponia americana
509			Flea (Stenoponia ponera)	Stenoponia ponera
510			Flea (Sternopsylla distincta texana)	Sternopsylla distincta texana
511			Flea (Sternopsylla distincta)	Sternopsylla distincta
512			Flea (Strepsylla dalmati)	Strepsylla dalmati
513			Flea (Strepsylla davisae)	Strepsylla davisae
514			Flea (Strepsylla fautini)	Strepsylla fautini
515			Flea (Strepsylla machadoi)	Strepsylla machadoi
516			Flea (Strepsylla mina)	Strepsylla mina
517			Flea (Strepsylla schmidtii)	Strepsylla schmidtii
518			Flea (Strepsylla taluna)	Strepsylla taluna
519			Flea (Strepsylla villai)	Strepsylla villai
520			Flea (Tarsopsylla octodecimdentata)	Tarsopsylla octodecimdentata
521			Flea (Thrassis acamantis)	Thrassis acamantis
522			Flea (Thrassis aridis)	Thrassis aridis
523			Flea (Thrassis arizonensis)	Thrassis arizonensis

	AQ	AR	AS	AT	AU	AV
475				Malaraeus vonfintelis		
476				Margopsylla tolli		
477				Marmota (Genus)		
478				Marmota baibacina		
479				Marmota caligata		
480				Marmota flaviventris		
481				Marmota marmota		
482				Marmota monax		
483				Marmota olympus		
484				Marmota vancouverensis		
485				Marsupalia (Superorder)		
486				Martes americana		
487				Martes pennanti		
488				Megabothris abantis		
489				Megabothris acerbus		
490				Megabothris adversus		
491				Megabothris asio megalcolpus		
492				Megabothris asio orectus		
493				Megabothris atrox		
494				Megabothris bisetis		
495				Megabothris clantoni		
496				Megabothris groenlandicus		
497				Megabothris jamesoni		
498				Megabothris lucifer		
499				Megabothris princei		
500				Megabothris quirini		
501				Megabothris similus		
502				Megabothris smiti		
503				Megabothris spenceri		
504				Megabothris weaveri		
505				Megabothris wilsoni		
506				Megadontomys nelsoni		
507				Megadontomys thomasi		
508				Megarhroglossus becki		
509				Megarhroglossus divisus		
510				Megarhroglossus proculus		
511				Megarhroglossus sicamus		
512				Megarhroglossus sp. (Genus)		
513				Mephitidae (Family)		
514				Mephitis macroura		
515				Mephitis mephitis		
516				Meringis agilis		
517				Meringis altipecten		
518				Meringis arachis		
519				Meringis bilsingi		
520				Meringis californicus		
521				Meringis cummingi		
522				Meringis deserti		
523				Meringis dipodomys		



	A	B	C
524			Nocardia arthritidis
525			Nocardia asiatica
526			Nocardia asteroides
527			Nocardia beijingensis
528			Nocardia brasiliensis
529			Nocardia brevicatena
530			Nocardia carnea
531			Nocardia cyriacigeorgica
532			Nocardia farcinica
533			Nocardia nova
534			Nocardia otitidiscaviarum
535			Nocardia paucivorans
536			Nocardia pseudobrasiliensis
537			Nocardia puris
538			Nocardia shimofusensis
539			Nocardia species
540			Nocardia veterana
541			Nocardiopsis dassonvillei subsp. dassonvillei
542			Non-infectious Poliovirus
543			Norovirus
544			Norwalk virus
545			Obesumbacterium proteus
546			Obligate intracellular bacteria
547			Oligella urethralis
548			Onchocerca species
549			Onchocerca volvulus
550			Opisthorchis species
551			Orf virus
552			Orientia tsutsugamushi
553			Paecilomyces lilacinus
554			Paecilomyces species
555			Paecilomyces variotii
556			Paenibacillus alvei
557			Paenibacillus species
558			Panola Mountain Ehrlichia
559			Pantoea agglomerans
560			Pantoea species
561			Paracoccidioides brasiliensis
562			Paracoccidioides species
563			Paragonimus species
564			Paragonimus westermani
565			Parasite
566			Parechovirus
567			Parechovirus A
568			Parechovirus A3
569			Pasteurella canis
570			Pasteurella multocida
571			Pasteurella pneumotropica
572			Pasteurella species

	AA	AB	AC	AD
524		Skunk_Spotted, Western	Sigmodon arizonae	
525		Skunk_Striped	Sigmodon fulviventer	
526		Snake (Suborder Serpentes)	Sigmodon hispidus	
527		Snake_Boa, Red-tailed	Sigmodon leucotis	
528		Snake_Pine	Sigmodon ochrognathus	
529		Snake_Python (Family Pythonidae)	Sorex alaskanus	
530		Snake_Rat, Red (Corn)	Sorex arcticus	
531		Squirrel (Family Sciuridae)	Sorex bendirii	
532		Squirrel, Rock	Sorex cinereus	
533		Squirrel_Allen's	Sorex dispar	
534		Squirrel_American Red	Sorex fumeus	
535		Squirrel_American Flying (Genus Glaucomys)	Sorex gaspensis	
536		Squirrel_Arizona Gray	Sorex hoyi	
537		Squirrel_Collie's	Sorex jacksoni	
538		Squirrel_Deppe's	Sorex longirostris	
539		Squirrel_Douglas'	Sorex lyelli	
540		Squirrel_Eastern Fox	Sorex macrodon	
541		Squirrel_Eastern Gray	Sorex merriami	
542		Squirrel_Espiritu Santo Island Antelope	Sorex milleri	
543		Squirrel_Eurasian Red	Sorex nanus	
544		Squirrel_Ground (Genus Spermophilus)	Sorex oreopolus	
545		Squirrel_Ground, Baja California Rock	Sorex ornatus	
546		Squirrel_Ground, Belding's	Sorex ornatus subsp willetti	
547		Squirrel_Ground, California	Sorex palustris	
548		Squirrel_Ground, Cascade Golden-mantled	Sorex preblei	
549		Squirrel_Ground, Columbian	Sorex pribilofensis	
550		Squirrel_Ground, Franklin's	Sorex saussurei	
551		Squirrel_Ground, Golden-mantled	Sorex sclateri	
552		Squirrel_Ground, Little	Sorex stizodon	
553		Squirrel_Ground, Long-clawed	Sorex tenellus	
554		Squirrel_Ground, Long-tailed	Sorex trowbridgii	
555		Squirrel_Ground, Mexican	Sorex vagrans	
556		Squirrel_Ground, Mohave	Sorex veraepacis	
557		Squirrel_Ground, Perote	Spermophilopsis leptodactylus	
558		Squirrel_Ground, Richardson's	Spermophilus (Genus)	
559		Squirrel_Ground, Ring-tailed	Spermophilus adocetus	
560		Squirrel_Ground, Round-tailed	Spermophilus annulatus	
561		Squirrel_Ground, Sierra Madre	Spermophilus armatus	
562		Squirrel_Ground, Spotted	Spermophilus atricapillus	
563		Squirrel_Ground, Thirteen-lined	Spermophilus beecheyi	
564		Squirrel_Ground, Townsend's	Spermophilus beldingi	
565		Squirrel_Ground, Tropical	Spermophilus columbianus	
566		Squirrel_Ground, Uinta	Spermophilus franklinii	
567		Squirrel_Ground, Washington	Spermophilus lateralis	
568		Squirrel_Harris' Antelope	Spermophilus madrensis	
569		Squirrel_Mexican Gray	Spermophilus mexicanus	
570		Squirrel_Nayarit	Spermophilus mohavensis	
571		Squirrel_Nelson's (San Joaquin Antelope)	Spermophilus perotensis	
572		Squirrel_Northern flying	Spermophilus pygmaeus	

WA-KINGCO-20-0492-G-000274

	AM	AN	AO	AP
524			Flea (Thrassis bacchi)	Thrassis bacchi
525			Flea (Thrassis fotus)	Thrassis fotus
526			Flea (Thrassis francisi)	Thrassis francisi
527			Flea (Thrassis pandorae)	Thrassis pandorae
528			Flea (Thrassis petiolatus)	Thrassis petiolatus
529			Flea (Thrassis sp. (Genus))	Thrassis sp. (Genus)
530			Flea (Thrassis spenceri)	Thrassis spenceri
531			Flea (Thrassis stanfordi)	Thrassis stanfordi
532			Flea (Tiamastus cavicola)	Tiamastus cavicola
533			Flea (Traubella neotomae)	Traubella neotomae
534			Flea (Trichopsylloides oregonensis)	Trichopsylloides oregonensis
535			Flea (Tunga monositus)	Tunga monositus
536			Flea (Tunga penetrans)	Tunga penetrans
537			Flea (Xenopsylla brasiliensis)	Xenopsylla brasiliensis
538			Flea (Xenopsylla cheopis)	Xenopsylla cheopis
539			Flea (Xenopsylla eridos)	Xenopsylla eridos
540			Flea (Xenopsylla philoxera)	Xenopsylla philoxera
541			Flea (Xenopsylla phyllomae)	Xenopsylla phyllomae
542			Flea (Xenopsylla vexabilis)	Xenopsylla vexabilis
543			Fly	[Fly]
544			Fox (Generic name)	[Fox]
545			Fox_Arctic	Vulpes lagopus
546			Fox_Common Gray	Urocyon cinereoargenteus
547			Fox_Fennec	Vulpes zerda
548			Fox_Island Grey	Urocyon littoralis
549			Fox_Kit	Vulpes macrotis
550			Fox_Red	Vulpes vulpes
551			Fox_Red (Kit) (Genus Vulpes)	Vulpes (Genus)
552			Fox_Swift	Vulpes velox
553			Fox_Virginia	Vulpes vulpes subsp fulvus
554			Frog (Generic name)	[Frog]
555			Frog_Toad (Generic name)	[Frog_Toad]
556			Galago (Genus Galago)	Galago (Genus)
557			Gazella (Genus Gazella)	Gazella (Genus)
558			Gemsbok	Oryx gazella
559			Gerbil (Generic name)	[Gerbil]
560			Gerbil (Genus Gerbillus)	Gerbillus (Genus)
561			Gerbil (Jird) (Genus Meriones)	Meriones (Genus)
562			Gerbil_Great	Rhombomys opimus
563			Giraffe	Giraffa camelopardalis
564			Goat (Genus Capra)	Capra (Genus)
565			Goat_Mountain (Genus Oreamnos)	Oreamnos (Genus)
566			Goldfinch (Generic name)	[Goldfinch]
567			Goose_Domestic (Generic name)	[Goose_Domestic]
568			Gopher_Desert Pocket	Geomys arenarius
569			Gopher_Plains Pocket	Geomys bursarius
570			Gopher_Pocket, Botta's	Thomomys bottae
571			Gopher_Pocket, Camas	Thomomys bulbivorus
572			Gopher_Pocket, Mountain	Thomomys monticola

	AQ	AR	AS	AT	AU	AV
524				Meringis disparalis		
525				Meringis facilis		
526				Meringis hubbardi		
527				Meringis jamesoni		
528				Meringis nidi		
529				Meringis parkeri		
530				Meringis rectus		
531				Meringis shannoni		
532				Meringis sp. (Genus)		
533				Meringis vitabilis		
534				Meriones (Genus)		
535				Meriones crassus		
536				Meriones libycus		
537				Meriones meridianus		
538				Meriones tamariscinus		
539				Meriones unguiculatus		
540				Mesocricetus (Genus)		
541				Mesocricetus auratus		
542				Mesocricetus brandti		
543				Mesocricetus newtoni		
544				Mesocricetus raddei		
545				Microtus (Genus)		
546				Microtus abbreviatus		
547				Microtus breweri		
548				Microtus californicus		
549				Microtus chrotorrhinus		
550				Microtus guatemalensis		
551				Microtus longicaudus		
552				Microtus longicaudus subsp coronarius		
553				Microtus mexicanus		
554				Microtus miurus		
555				Microtus montanus		
556				Microtus ochrogaster		
557				Microtus oeconomus		
558				Microtus oregoni		
559				Microtus pennsylvanicus		
560				Microtus pinetorum		
561				Microtus quasiater		
562				Microtus richardsoni		
563				Microtus townsendii		
564				Microtus umbrosus		
565				Microtus xanthognathus		
566				Mioctenopsylla arctica		
567				Mioctenopsylla traubi		
568				Molossidae (Family)		
569				Molossus ater		
570				Mormoops blainvillii		
571				Mormoops megalophylla		
572				Mus musculus		

	A	B	C
573			Pediococcus species
574			Penicillium marneffeii
575			Penicillium species
576			Phaeoacremonium inflatipes
577			Phaeoacremonium species
578			Phialemonium obovatum
579			Phialophora verrucosa
580			Photobacterium (Vibrio) damsela
581			Photobacterium damsela
582			Photobacterium damsela subsp. damsela
583			Phylum Arthropoda
584			Pichia ohmeri
585			Picornavirus
586			Piedraia hortae
587			Pinworm (Enterobius vermicularis)
588			Plasmodium brasilianum
589			Plasmodium falciparum
590			Plasmodium malariae
591			Plasmodium ovale
592			Plasmodium species
593			Plasmodium vivax
594			Pneumocystis species
595			Poliovirus
596			Poxvirus
597			Prevotella intermedia
598			Propionibacterium acnes
599			Proteus mirabilis
600			Proteus penneri
601			Proteus species
602			Proteus vulgaris
603			Protozoa
604			Providencia rettgeri
605			Providencia species
606			Providencia stuartii
607			Pseudocowpoxvirus
608			Pseudomonas abietaniphila
609			Pseudomonas aeruginosa
610			Pseudomonas fluorescens
611			Pseudomonas mosselii
612			Pseudomonas oryzae
613			Pseudomonas species
614			Pseudomonas stutzeri
615			Pseudomonas syringae
616			Pythium (Hyphomyces)
617			Pythium insidiosum
618			Rabies Virus
619			Rahnella aquatilis
620			Rahnella species
621			Ralstonia mannitolitica

	AA	AB	AC	AD
573		Squirrel_Peter's	Spermophilus richardsonii	
574		Squirrel_Red-tailed	Spermophilus saturatus	
575		Squirrel_Richmond's	Spermophilus spilosoma	
576		Squirrel_Southern flying	Spermophilus tereticaudus	
577		Squirrel_Tassel-eared (Abert's)	Spermophilus townsendii	
578		Squirrel_Texas Antelope	Spermophilus tridecemlineatus	
579		Squirrel_Tree (Genus Scuirus)	Spermophilus undulatus	
580		Squirrel_Variagated	Spermophilus variegatus	
581		Squirrel_Western Gray	Spermophilus washingtoni	
582		Squirrel_White-tailed Antelope	Spilogale (Genus)	
583		Squirrel_Yucatan	Spilogale angustifrons	
584		Sugar Glider	Spilogale gracilis	
585		Tiger	Spilogale putorius	
586		Turkey (Generic name)	Spilogale pygmaea	
587		Turtle (Generic name)	Suncus murinus	
588		Turtle_Slider, Red-eared	Suricata suricatta	
589		Turtle_Snapping, American	Sus (Genus)	
590		Unknown	Sus scrofa	
591		Vole (Generic name)	Sylvilagus (Genus)	
592		Vole (Genus Microtus)	Sylvilagus aquaticus	
593		Vole, Red Tree	Sylvilagus audubonii	
594		Vole_Bank	Sylvilagus bachmani	
595		Vole_Beach	Sylvilagus brasiliensis	
596		Vole_Coronation Island	Sylvilagus cunicularius	
597		Vole_Creeping	Sylvilagus floridanus	
598		Vole_European water	Sylvilagus graysoni	
599		Vole_Gapper's Red-backed	Sylvilagus insonus	
600		Vole_Guatemalan	Sylvilagus mansuetus	
601		Vole_Insular (St. Matthews Island)	Sylvilagus nuttallii	
602		Vole_Jalapan Pine	Sylvilagus palustris	
603		Vole_Long-tailed	Sylvilagus transitionalis	
604		Vole_Meadow	Tadarida (Genus)	
605		Vole_Meadow mouse, California	Tadarida brasiliensis	
606		Vole_Mexican	Talpidae (Family)	
607		Vole_Montane	Tamias (Genus)	
608		Vole_Northern Red-backed	Tamias alpinus	
609		Vole_Pine	Tamias amoenus	
610		Vole_Prairie	Tamias bulleri	
611		Vole_Red-backed (Genus Clethrionomys)	Tamias cinereicollis	
612		Vole_Rock	Tamias dorsalis	
613		Vole_Sagebrush	Tamias merriami	
614		Vole_Singing	Tamias minimus	
615		Vole_Southern Red-backed	Tamias palmeri	
616		Vole_Townsend's	Tamias panamintinus	
617		Vole_Tundra	Tamias quadrimaculatus	
618		Vole_Water	Tamias quadrivittatus	
619		Vole_Western heather	Tamias ruficaudus	
620		Vole_White-footed	Tamias rufus	
621		Vole_Yellow-cheeked	Tamias senex	

WA-KINGCO-20-0492-G-000278

	AM	AN	AO	AP
573			Gopher_Pocket, Yellow-faced	Pappogeomys castanops
574			Gopher_Pocket_Northern	Thomomys talpoides
575			Gopher_Pocket_Southern	Thomomys umbrinus
576			Gopher_Pocket_Townsend's	Thomomys townsendii
577			Gopher_Southeastern Pocket	Geomys pinetis
578			Gopher_Texas Pocket	Geomys personatus
579			Gophers_Pocket (Genus Thomomys)	Thomomys (Genus)
580			Gorilla	Gorilla gorilla
581			Guanaco	Lama guanicoe
582			Guinea pig	Cavia porcellus
583			Gull_Ring-billed	Larus delawarensis
584			Hamster (Generic name)	[Hamster]
585			Hamster (Genus Cricetulus)	Cricetulus (Genus)
586			Hamster (Genus Mesocricetus)	Mesocricetus (Genus)
587			Hamster_Brandt's	Mesocricetus brandti
588			Hamster_Ciscaucasian	Mesocricetus raddei
589			Hamster_European	Cricetus cricetus
590			Hamster_Romanian	Mesocricetus newtoni
591			Hamster_Syrian	Mesocricetus auratus
592			Hare (Genus Lepus)	Lepus (Genus)
593			Hare_Alaskan	Lepus othus
594			Hare_Arctic	Lepus arcticus
595			Hare_Brown (European)	Lepus europaeus
596			Hare_Snowshoe	Lepus americanus
597			Hawk (Generic name)	[Hawk]
598			Hedgehog (Subfamily)	Erinaceinae (Subfamily)
599			Hedgehog_Pygmy	Atelerix albiventris
600			Hornet	[Hornet]
601			Horse	Equus caballus
602			Horse (Genus Equus)	Equus (Genus)
603			Jackrabbit, Antelope	Lepus alleni
604			Jackrabbit_Black	Lepus insularis
605			Jackrabbit_Black-tailed	Lepus californicus
606			Jackrabbit_Gaillard (White-sided)	Lepus callotis subsp gaillardi
607			Jackrabbit_Tehuantepec	Lepus flavigularis
608			Jackrabbit_White-sided	Lepus callotis subsp callotis
609			Jackrabbit_White-tailed	Lepus townsendii
610			Jaguar	Panthera onca
611			Jaguarundi	Puma yagouaroundi
612			Javelina (Peccary_Collared)	Pecari tajacu
613			Jird_Libyan	Meriones libycus
614			Jird_Mid-day	Meriones meridianus
615			Jird_Mongolian	Meriones unguiculatus
616			Jird_Sundevall's	Meriones crassus
617			Jird_Tamarisk	Meriones tamariscinus
618			Kangaroo (Generic name)	[Kangaroo]
619			Kangaroo_rat_Agile	Dipodomys agilis
620			Kangaroo_rat_Banner-tailed	Dipodomys spectabilis
621			Kangaroo_rat_Big-eared	Dipodomys venustus subsp elephantinus

WA-KINGCO-20-0492-G-000279

	AQ	AR	AS	AT	AU	AV
573				Muscardinus avellanarius		
574				Mustela (Genus)		
575				Mustela erminea		
576				Mustela frenata		
577				Mustela nigripes		
578				Mustela nivalis subsp rixosa		
579				Mustela putorius subsp furo		
580				Mustela siberica		
581				Myocastor coypus		
582				Myodopsylla collinsi		
583				Myodopsylla gentilis		
584				Myodopsylla globata		
585				Myodopsylla nordina		
586				Myodopsylla setosa		
587				Myodopsylloides peircei		
588				Myotis (Genus)		
589				Myotis auriculus		
590				Myotis austroriparius		
591				Myotis californicus		
592				Myotis ciliolabrum		
593				Myotis evotis		
594				Myotis grisescens		
595				Myotis keenii		
596				Myotis leibii		
597				Myotis lucifugus		
598				Myotis occultus		
599				Myotis sodalis		
600				Myotis thysanodes		
601				Myotis velifer		
602				Myotis vivesi		
603				Myotis volans		
604				Myotis yumanensis		
605				Nasua (Genus)		
606				Nasua narica		
607				Nasua nasua		
608				Nearctopsylla brooksi		
609				Nearctopsylla genalis		
610				Nearctopsylla georginia		
611				Nearctopsylla hamata		
612				Nearctopsylla hyrtachi		
613				Nearctopsylla jordani		
614				Nearctopsylla martyoungi		
615				Nearctopsylla princei		
616				Nearctopsylla traubi		
617				Neopysylla inopina		
618				Neotoma (Genus)		
619				Neotoma albigula		
620				Neotoma anthonyi		
621				Neotoma augustapalata		

	A	B	C
622			Ralstonia pickettii
623			Ralstonia species
624			Raoultella (Klebsiella) planticola
625			Raoultella (Klebsiella) terrigena
626			Raoultella species
627			Rhinoclatiella aquaspersa
628			Rhinoclatiella species
629			Rhinovirus
630			Rhizobium species
631			Rhizobium/Agrobacterium group
632			Rhizomucor pusillus
633			Rhizopus arrhizus
634			Rhizopus species
635			Rhodococcus coprophilus
636			Rhodococcus equi
637			Rhodococcus species
638			Rhodococcus/Nocardia
639			Rhodotorula rubra
640			Rickettsia africae
641			Rickettsia akari
642			Rickettsia amblyommii
643			Rickettsia asemboensis
644			Rickettsia australis
645			Rickettsia bellii
646			Rickettsia canadensis
647			Rickettsia conorii
648			Rickettsia felis
649			Rickettsia helvetica
650			Rickettsia honei
651			Rickettsia massilliae
652			Rickettsia montanensis
653			Rickettsia parkeri
654			Rickettsia prowazekii
655			Rickettsia rhipicephali
656			Rickettsia rickettsii
657			Rickettsia sibirica
658			Rickettsia species
659			Rickettsia typhi
660			Rickettsiella species
661			Roseomonas gilardii
662			Roseomonas species
663			Rothia species
664			Rubella virus
665			Saccharomyces cerevisiae
666			Saksenaea vasiformis
667			Salmonella Anatum
668			Salmonella Berta
669			Salmonella Blockley
670			Salmonella bongori

	AA	AB	AC	AD
622		Vole_Zempoaltepec	Tamias sonomae	
623		Wallaby (Generic name)	Tamias speciosus	
624		Wallaby_Rock (Genus Petrogale)	Tamias striatus	
625		Wallaroo	Tamias townsendii	
626		Weasel (Genus Mustela)	Tamias umbrinus	
627		Weasel_Long-tailed	Tamiasciurus douglasii	
628		Weasel_Short-tailed	Tamiasciurus hudsonicus	
629		Weasel_Siberian	Taurotragus (Genus)	
630		Wildebeest (Genus Connochaetes)	Taxidea taxus	
631		Wildebeest, Blue	Thomasomys (Genus)	
632		Wolf_Gray	Thomomys (Genus)	
633		Wolf_Gray X Dog Hybrid	Thomomys bottae	
634		Wolf_Red	Thomomys bulbivorus	
635		Wolverine	Thomomys monticola	
636		Wolverine_North American subpecies	Thomomys talpoides	
637		Woodchuck (Groundhog)	Thomomys townsendii	
638		Woodrat (Packrat) (Genus Neotoma)	Thomomys umbrinus	
639		Woodrat_Allen's	Trachemys scripta subsp elegans	
640		Woodrat_Anthony's	Trichoglossus haematodus moluccanus	
641		Woodrat_Bolanos	Uncia uncia	
642		Woodrat_Bryant's	Unknown	
643		Woodrat_Bunker's	Urocyon cinereoargenteus	
644		Woodrat_Bushy-tailed	Urocyon littoralis	
645		Woodrat_Desert	Ursus (Genus)	
646		Woodrat_Dusky-footed	Ursus americanus	
647		Woodrat_Eastern	Ursus arctos	
648		Woodrat_Goldman's	Ursus arctos subsp horribilis	
649		Woodrat_Mexican	Ursus maritimus	
650		Woodrat_Nelson's	Vulpes (Genus)	
651		Woodrat_San Martin Island	Vulpes lagopus	
652		Woodrat_Sonoran	Vulpes macrotis	
653		Woodrat_Southern Plains	Vulpes velox	
654		Woodrat_Stephens'	Vulpes vulpes	
655		Woodrat_Tamaulipan	Vulpes vulpes subsp fulvus	
656		Woodrat_Turner Island	Vulpes zerda	
657		Woodrat_White-throated	Zalophus californianus	
658		Zebra	Zapus hudsonius	
659		Zebra_Burchell's (Plains)	Zapus princeps	
660		Zorilla	Zapus trinotatus	
661				
662				
663				
664				
665				
666				
667				
668				
669				
670				

	AM	AN	AO	AP
622			Kangaroo rat_Chisel-toothed	Dipodomys microps
623			Kangaroo rat_Desert	Dipodomys deserti
624			Kangaroo rat_Fresno (San Joaquin)	Dipodomys nitratoides
625			Kangaroo rat_Giant	Dipodomys ingens
626			Kangaroo rat_Heermann's	Dipodomys heermanni
627			Kangaroo rat_Margarita Island	Dipodomys margaritae
628			Kangaroo rat_Merriam's	Dipodomys merriami
629			Kangaroo rat_Narrow-faced	Dipodomys venustus
630			Kangaroo rat_Nelson's	Dipodomys nelsoni
631			Kangaroo rat_Ord's	Dipodomys ordii
632			Kangaroo rat_Panamint	Dipodomys panamintinus
633			Kangaroo rat_Phillips'	Dipodomys phillipsii
634			Kangaroo rat_San Jose Island	Dipodomys insularis
635			Kangaroo rat_San Quintin	Dipodomys gravipes
636			Kangaroo rat_Stephens'	Dipodomys stephensi
637			Kangaroo rat_Texas	Dipodomys elator
638			Kangaroo, Wallaby, Wallaroo (Genus Macropus)	Macropus (Genus)
639			Kangaroo_Red	Macropus rufus
640			Kinkajou	Potos flavus
641			Kissing bug	Subfamily Triatominae
642			Lagomorph (Order Lagomorpha)	Lagomorpha (Order)
643			Lemur	Lemuridae (Family)
644			Leopard	Panthera pardus
645			Leopard_Snow	Uncia uncia
646			Lice (Order Phthiraptera)	Order Phthiraptera
647			Lion	Panthera leo
648			Lizard (Generic name)	[Lizard]
649			Lizard_Bearded dragon (Generic name)	[Bearded dragon]
650			Lizard_Chameleon (Family Chamaeleonidae)	Chamaeleonidae (Family)
651			Lizard_Chinese Water Dragon	Physignathus cocincinus
652			Lizard_Frilled-neck Lizard	Chlamydosaurus kingii
653			Lizard_Gecko (Generic name)	[Gecko]
654			Lizard_Iguana (Generic name)	[Iguana]
655			Llama	Lama glama
656			Lorikeet (Generic name)	[Lorikeet]
657			Lorikeet_Blue mountain (Rainbow)	Trichoglossus haematodus moluccanus
658			Lynx	Lynx canadensis
659			Macaque (Genus Macaca)	Macaca (Genus)
660			Macaque_Japanese	Macaca fuscata
661			Macaque_Rhesus	Macaca mulatta
662			Macaw (Genus Ara)	Ara (Genus)
663			Maggot	[Maggot]
664			Margay	Leopardus wiedii
665			Marmoset (Genus Callithrix)	Callithrix (Genus)
666			Marmoset_Weid's Black-tufted-ear	Callithrix kuhlii
667			Marmot (Genus Marmota)	Marmota (Genus)
668			Marmot_Alpine	Marmota marmota
669			Marmot_Gray	Marmota baibacina
670			Marmot_Hoary	Marmota caligata

	AQ	AR	AS	AT	AU	AV
622				Neotoma bryanti		
623				Neotoma bunker		
624				Neotoma cinerea		
625				Neotoma floridana		
626				Neotoma fuscipes		
627				Neotoma goldmani		
628				Neotoma lepida		
629				Neotoma martinensis		
630				Neotoma mexicana		
631				Neotoma micropus		
632				Neotoma nelsoni		
633				Neotoma palatina		
634				Neotoma phenax		
635				Neotoma stephensi		
636				Neotoma varia		
637				Neovison macrodon		
638				Neovison vison		
639				Noctilio (Genus)		
640				Noctilio leporinus		
641				Nosopsyllus faciatus		
642				Nosopsyllus laeviceps		
643				Nosopsyllus londiniensis		
644				Nycteridopsylla chapini		
645				Nycteridopsylla vancouverensis		
646				Nycticeius humeralis		
647				Nyctinomops femorosaccus		
648				Nyctinomops macrotis		
649				Ochotona (Genus)		
650				Ochotona princeps		
651				Ochrotomys nuttalli		
652				Odocoileus hemionus		
653				Odocoileus hemionus subsp columbianus		
654				Odocoileus virginianus		
655				Odontopsyllus dentatus		
656				Odontopsyllus multispinosus		
657				Oligoryzomys (Genus)		
658				Ondatra zibethicus		
659				Onychomys leucogaster		
660				Onychomys torridus		
661				Opisocrostitis vespertalis		
662				Opisodasys (Opisocrostitis) enoplus		
663				Opisodasys (Opisocrostitis) hollandi		
664				Opisodasys (Opisocrostitis) nesiotus		
665				Opisodasys (Opisocrostitis) perotensis		
666				Opisodasys (Opisocrostitis) pseudarctomys		
667				Opisodasys (Opisocrostitis) robustus		
668				Opisodasys keeni		
669				Orchopeas cadens		
670				Orchopeas dieteri		



	A	B	C
671			Salmonella Braenderup
672			Salmonella Cerro
673			Salmonella Choleraesuis
674			Salmonella Duesseldorf
675			Salmonella enterica
676			Salmonella enterica subsp arizonae
677			Salmonella enterica subsp enterica
678			Salmonella enterica subsp indica
679			Salmonella enterica subsp salamae
680			Salmonella enterica subsp. diarizonae
681			Salmonella enterica subsp. houtenae
682			Salmonella Enteritidis
683			Salmonella Hadar
684			Salmonella Heidelberg
685			Salmonella Infantis
686			Salmonella Javiana
687			Salmonella Litchfield
688			Salmonella Mbandaka
689			Salmonella Mikawasima
690			Salmonella Montevideo
691			Salmonella Newport
692			Salmonella Oslo
693			Salmonella Pakistan
694			Salmonella Pomona
695			Salmonella Poona
696			Salmonella Putten
697			Salmonella Saarbruecken
698			Salmonella Saintpaul
699			Salmonella Sandiego
700			Salmonella species
701			Salmonella Telelkebir
702			Salmonella Thompson
703			Salmonella Typhi
704			Salmonella Typhimurium
705			Salmonella Typhimurium var O5-
706			Salmonella Uganda
707			Salmonella Worthington
708			Sarcocystis species
709			SARS coronavirus
710			Scedosporium apiospermum
711			Scedosporium prolificans
712			Schistosoma haematobium
713			Schistosoma japonicum
714			Schistosoma mansoni
715			Schistosoma species
716			Scopulariopsis brumptii
717			Scytalidium species
718			Segniliparus species
719			Serratia marcescens

	AM	AN	AO	AP
671			Marmot_Olympic	Marmota olympus
672			Marmot_Vancouver	Marmota vancouverensis
673			Marmot_Yellow-bellied	Marmota flaviventris
674			Marsupial (Superorder Marsupalia)	Marsupalia (Superorder)
675			Marten_American	Martes americana
676			Meerkat	Suricata suricatta
677			Mice_Deer (Genus Peromyscus)	Peromyscus (Genus)
678			Mice_Oldfield (Genus Thomasomys)	Thomasomys (Genus)
679			Millipede (Class Diplopoda)	Class Diplopoda
680			Mink_American	Neovison vison
681			Mink_Sea	Neovison macrodon
682			Mite (Order Mesostigmata)	Order Mesostigmata
683			Mole (Family Talpidae)	Talpidae (Family)
684			Mole_Broad-footed	Scapanus latimanus
685			Mole_Eastern	Scalopus aquaticus
686			Mole_Red-footed	Scapanus orarius
687			Mole_Snow	Scapanus townsendii
688			Mongoose (Family Herpestidae)	Herpestidae (Family)
689			Mongoose_Java (Indian)	Herpestes javanicus
690			Monkey (Generic name)	[Monkey]
691			Monkey_Brown capuchin	Cebus apella
692			Monkey_Capuchin (Genus Cebus)	Cebus (Genus)
693			Monkey_De Brazza's	Cercopithecus neglectus
694			Monkey_Owl	Aotus (Genus)
695			Monkey_Squirrel, Common	Saimiri sciureus
696			Monkey_Tamarin (Genus Saguinus)	Saguinus (Genus)
697			Monkey_Tamarin, Cotton Top	Saguinus oedipus
698			Moose	Alces alces
699			Mosquitoes (Family Culicidae)	Family Culicidae
700			Mouse (Generic name)	[Mouse]
701			Mouse, Northern Rock	Peromyscus nastus
702			Mouse_Angel Island	Peromyscus guardia
703			Mouse_Aztec	Peromyscus aztecus
704			Mouse_Black-eared	Peromyscus melanotis
705			Mouse_Brush	Peromyscus boylii
706			Mouse_Cactus	Peromyscus eremicus
707			Mouse_California	Peromyscus californicus
708			Mouse_Canyon	Peromyscus crinitus
709			Mouse_Chihuahuan	Peromyscus polius
710			Mouse_Cotton	Peromyscus gossypinus
711			Mouse_Deer	Peromyscus maniculatus
712			Mouse_Deer Burt's	Peromyscus caniceps
713			Mouse_Deer, Big	Peromyscus grandis
714			Mouse_Deer, Blackish	Peromyscus furvus
715			Mouse_Deer, Brown	Peromyscus megalops
716			Mouse_Deer, Chiapan	Peromyscus zarhynchus
717			Mouse_Deer, Crested-tailed	Habromys lophurus
718			Mouse_Deer, Dickey's	Peromyscus dickeyi
719			Mouse_Deer, El Carrizo	Peromyscus ochraventer

	AQ	AR	AS	AT	AU	AV
671				Orchopeas fulleri		
672				Orchopeas howardi		
673				Orchopeas latens		
674				Orchopeas leucopus		
675				Orchopeas neotomae		
676				Orchopeas nepos		
677				Orchopeas sexdentatus		
678				Orchopeas sp. (Genus)		
679				Order Araneae		
680				Order Mesostigmata		
681				Order Phthiraptera		
682				Order Siphonaptera		
683				Oreamnos (Genus)		
684				Oropsylla (Opisocrostis) labis		
685				Oropsylla alaskensis		
686				Oropsylla arctomys		
687				Oropsylla augustsoni		
688				Oropsylla bruneri		
689				Oropsylla hirsuta		
690				Oropsylla idahoensis		
691				Oropsylla labis		
692				Oropsylla montana		
693				Oropsylla oregonensis		
694				Oropsylla ruprestris		
695				Oropsylla silantiewi		
696				Oropsylla spenceri		
697				Oropsylla stanfordi		
698				Oropsylla tuberculata cynomuris		
699				Oropsylla tuberculata tuberculata		
700				Oropsylla washingtonensis		
701				Orxy (Genus)		
702				Oryctolagus (Genus)		
703				Oryctolagus cuniculus		
704				Oryx gazella		
705				Oryzomys subflavus		
706				Osgoodomys banderanus		
707				Ovis (Genus)		
708				Ovis aries		
709				Ovis canadensis		
710				Ovis dalli		
711				P. echinophagoides		
712				Pan (Genus)		
713				Pantera pardus		
714				Panthera leo		
715				Panthera onca		
716				Panthera tigris		
717				Pantherophis guttatus		
718				Papio (Genus)		
719				Pappogeomys castanops		

	A	B	C
720			Serratia proteamaculans
721			Serratia species
722			Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2)
723			Shewanella species
724			Shigella boydii
725			Shigella boydii, serovar 1
726			Shigella boydii, serovar 2
727			Shigella boydii, serovar 4
728			Shigella dysenteriae
729			Shigella flexneri
730			Shigella sonnei
731			Shigella species
732			Sphingobacterium species
733			Sphingomonas paucimobilis
734			Sphingomonas phyllosphaerae
735			Sphingomonas species
736			Sporothrix schenckii
737			Sporothrix species
738			Sporotrichum pruinosum
739			Staphylococcus aureus
740			Staphylococcus auricularis
741			Staphylococcus capitis
742			Staphylococcus capitis ss urealyticus
743			Staphylococcus cohnii
744			Staphylococcus cohnii ss urealyticus
745			Staphylococcus condimenti
746			Staphylococcus epidermidis
747			Staphylococcus haemolyticus
748			Staphylococcus hominis
749			Staphylococcus intermedius
750			Staphylococcus lugdunensis
751			Staphylococcus simulans
752			Staphylococcus species
753			Staphylococcus warneri
754			Staphylococcus, coagulase negative
755			Stenotrophomonas maltophilia
756			Stenotrophomonas species
757			Streptobacillus moniliformis
758			Streptobacillus species
759			Streptococcus agalactiae
760			Streptococcus alactolyticus
761			Streptococcus anginosus
762			Streptococcus canis
763			Streptococcus constellatus
764			Streptococcus equinus
765			Streptococcus group C variant
766			Streptococcus intermedius
767			Streptococcus mitis
768			Streptococcus mutans

	AM	AN	AO	AP
720			Mouse_Deer, Guatemalan	Peromyscus guatemalensis
721			Mouse_Deer, Mexican	Peromyscus mexicanus
722			Mouse_Deer, Michoacan	Osgoodomys banderanus
723			Mouse_Deer, Nelson's Giant	Megadontomys nelsoni
724			Mouse_Deer, Northwestern	Peromyscus keeni
725			Mouse_Deer, Pemberton's	Peromyscus pembertoni
726			Mouse_Deer, Puebla	Peromyscus mekisturus
727			Mouse_Deer, Slender-tailed	Habromys lepturus
728			Mouse_Deer, Stirton's	Peromyscus stirtoni
729			Mouse_Deer, Thomas' Giant	Megadontomys thomasi
730			Mouse_Deer, Yucatan	Peromyscus yucatanicus
731			Mouse_Deer, Zacatecan	Peromyscus difficilis
732			Mouse_Deer, Zempoaltepec	Peromyscus melanocarpus
733			Mouse_Dormouse, Common	Muscardinus avellanarius
734			Mouse_False Canyon	Peromyscus pseudocrinitus
735			Mouse_Florida	Podomys floridanus
736			Mouse_Golden	Ochrotomys nuttalli
737			Mouse_Hairy-tailed Bolo	Bolomys lasiurus
738			Mouse_Harvest (Genus Reithrodontomys)	Reithrodontomys (Genus)
739			Mouse_Harvest, Chiriqui	Reithrodontomys creper
740			Mouse_Harvest, Darien	Reithrodontomys darienensis
741			Mouse_Harvest, Eastern	Reithrodontomys humulis
742			Mouse_Harvest, Fulvous	Reithrodontomys fulvescens
743			Mouse_Harvest, Hairy	Reithrodontomys hirsutus
744			Mouse_Harvest, Mexican	Reithrodontomys mexicanus
745			Mouse_Harvest, Narrow-nosed	Reithrodontomys tenuirostris
746			Mouse_Harvest, Plains	Reithrodontomys montanus
747			Mouse_Harvest, Rodriguez's	Reithrodontomys rodriguezi
748			Mouse_Harvest, Saltmarsh	Reithrodontomys raviventris
749			Mouse_Harvest, Short-nosed	Reithrodontomys brevirostris
750			Mouse_Harvest, Slender	Reithrodontomys gracilis
751			Mouse_Harvest, Small-toothed	Reithrodontomys microdon
752			Mouse_Harvest, Sonoran	Reithrodontomys burti
753			Mouse_Harvest, Sumichrast's	Reithrodontomys sumichrasti
754			Mouse_Harvest, Volcano	Reithrodontomys chrysopsis
755			Mouse_Harvest, Western	Reithrodontomys megalotis
756			Mouse_House	Mus musculus
757			Mouse_Jumping, Meadow	Zapus hudsonius
758			Mouse_Jumping, Pacific	Zapus trinotatus
759			Mouse_Jumping, Western	Zapus princeps
760			Mouse_Marsh	Peromyscus perfulvus
761			Mouse_Merriam's (Mesquite)	Peromyscus merriami
762			Mouse_Nayarit	Peromyscus simulus
763			Mouse_Neonatal (Generic name)	[Mouse_Neonatal]
764			Mouse_Northern Grasshopper	Onychomys leucogaster
765			Mouse_Oldfield	Peromyscus polionotus
766			Mouse_Perote	Peromyscus bullatus
767			Mouse_Pinyon	Peromyscus truei
768			Mouse_Plateau	Peromyscus melanophrys

	AQ	AR	AS	AT	AU	AV
720				Paratyphloceras oregonensis		
721				Pecari tajacu		
722				Pediculus sp (Genus) Nit, Louse		
723				Perdix perdix		
724				Perognathus alticola		
725				Perognathus amplus		
726				Perognathus fasciatus		
727				Perognathus flavescens		
728				Perognathus flavus		
729				Perognathus inornatus		
730				Perognathus longimembris		
731				Perognathus merriami		
732				Perognathus parvus		
733				Perognathus parvus subsp xanthonotus		
734				Peromyscopsylla catatina		
735				Peromyscopsylla draco		
736				Peromyscopsylla ebrighti		
737				Peromyscopsylla hamifer		
738				Peromyscopsylla hesperomys		
739				Peromyscopsylla ostsibirica		
740				Peromyscopsylla scotti		
741				Peromyscopsylla selenis		
742				Peromyscus (Genus)		
743				Peromyscus aztecus		
744				Peromyscus boylii		
745				Peromyscus bullatus		
746				Peromyscus californicus		
747				Peromyscus caniceps		
748				Peromyscus crinitus		
749				Peromyscus dickeyi		
750				Peromyscus difficilis		
751				Peromyscus eremicus		
752				Peromyscus furvus		
753				Peromyscus gossypinus		
754				Peromyscus grandis		
755				Peromyscus guardia		
756				Peromyscus guatemalensis		
757				Peromyscus keeni		
758				Peromyscus leucopus		
759				Peromyscus maniculatus		
760				Peromyscus megalops		
761				Peromyscus mekisturus		
762				Peromyscus melanocarpus		
763				Peromyscus melanophrys		
764				Peromyscus melanotis		
765				Peromyscus merriami		
766				Peromyscus mexicanus		
767				Peromyscus nastus		
768				Peromyscus ochraventer		



	A	B	C
769			Streptococcus pluranimalium
770			Streptococcus pneumoniae
771			Streptococcus pyogenes
772			Streptococcus salivarius
773			Streptococcus sanguinis
774			Streptococcus species
775			Streptococcus suis
776			Streptococcus viridans
777			Streptococcus, Alpha-hemolytic
778			Streptococcus, Beta-hemolytic
779			Streptococcus, group A
780			Streptococcus, group B
781			Streptococcus, group C
782			Streptococcus, group F
783			Streptomyces species
784			Strongyloides species
785			Strongyloides stercoralis
786			Syncephalastrum racemosum
787			Taenia solium
788			Taenia species
789			Tapeworm
790			Tatlockia (Legionella) micdadei
791			Torulopsis species
792			Toxocara canis
793			Toxocara cati
794			Toxocara species
795			Toxoplasma gondii
796			Toxoplasma species
797			Trematode
798			Treponema pallidum
799			Treponema species
800			Trichinella species
801			Trichinella spiralis
802			Trichomonas species
803			Trichomonas vaginalis
804			Trichophyton mentagrophytes var. mentagrophytes
805			Trichophyton raubitschekii
806			Trichophyton rubrum
807			Trichophyton schoenleinii
808			Trichophyton soudanense
809			Trichophyton species
810			Trichophyton tonsurans
811			Trichophyton verrucosum
812			Trichophyton violaceum
813			Trichosporon asahii
814			Trichosporon species
815			Trichuris species
816			Trichuris trichuria
817			Trypanosoma brucei

	AM	AN	AO	AP
769			Mouse_Pocket, Arizona	Perognathus amplus
770			Mouse_Pocket, Bailey's	Chaetodipus baileyi
771			Mouse_Pocket, California	Chaetodipus californicus
772			Mouse_Pocket, Desert	Chaetodipus penicillatus
773			Mouse_Pocket, Goldman's	Chaetodipus goldmani
774			Mouse_Pocket, Great Basin	Perognathus parvus
775			Mouse_Pocket, Hispid	Chaetodipus hispidus
776			Mouse_Pocket, Lined	Chaetodipus lineatus
777			Mouse_Pocket, Little	Perognathus longimembris
778			Mouse_Pocket, Little Desert	Chaetodipus arenarius
779			Mouse_Pocket, Long-tailed	Chaetodipus formosus
780			Mouse_Pocket, Merriam's	Perognathus merriami
781			Mouse_Pocket, Olive-backed	Perognathus fasciatus
782			Mouse_Pocket, Plains	Perognathus flavescens
783			Mouse_Pocket, Rock	Chaetodipus intermedius
784			Mouse_Pocket, San Diego	Chaetodipus fallax
785			Mouse_Pocket, San Joaquin	Perognathus inornatus
786			Mouse_Pocket, Silky	Perognathus flavus
787			Mouse_Pocket, Sinaloan	Chaetodipus pernix
788			Mouse_Pocket, Spiny	Chaetodipus spinatus
789			Mouse_Pocket, White-eared	Perognathus alticola
790			Mouse_Pocket, Yellow-eared	Perognathus parvus subsp xanthonotus
791			Mouse_San Esteban Island	Peromyscus stephani
792			Mouse_Santa Cruz	Peromyscus sejugis
793			Mouse_Sitka	Peromyscus sitkensis
794			Mouse_Slevin's	Peromyscus slevini
795			Mouse_Southern Grasshopper	Onychomys torridus
796			Mouse_White-ankled	Peromyscus pectoralis
797			Mouse_White-footed Deer	Peromyscus leucopus
798			Muskrat	Ondatra zibethicus
799			Nit, Louse	Pediculus sp (Genus) Nit, Louse
800			Nutria	Myocastor coypus
801			Ocelot	Leopardus pardalis
802			Opossum_Virginia	Didelphis virginiana
803			Orangutan	Pongo pygmaeus
804			Oryx (Genus Oryx)	Orxy (Genus)
805			Otter_River	Lontra canadensis
806			Otter_Sea	Enhydra lutris
807			Owl (Generic name)	[Owl]
808			Owl, Great Horned	Bubo virginianus
809			Oxen, True cattle (Genus Bos)	Bos (Genus)
810			Oyster (Generic name)	[Oyster]
811			Panda_Red (Lesser)	Ailurus fulgens
812			Partridge_Gray (Hungarian)	Perdix perdix
813			Pig (Generic name)	Sus (Genus)
814			Pig_Feral	Sus scrofa
815			Pigeon (Generic name)	[Pigeon]
816			Pika (Genus Ochotona)	Ochotona (Genus)
817			Pika_American (Rocky Mountain)	Ochotona princeps

	AQ	AR	AS	AT	AU	AV
769				Peromyscus pectoralis		
770				Peromyscus pambertoni		
771				Peromyscus perfulvus		
772				Peromyscus polionotus		
773				Peromyscus polius		
774				Peromyscus pseudocrinitus		
775				Peromyscus sejugis		
776				Peromyscus simulus		
777				Peromyscus sitkensis		
778				Peromyscus slevini		
779				Peromyscus stephani		
780				Peromyscus stirtoni		
781				Peromyscus zarhynchus		
782				Petaurus breviceps		
783				Petrogale (Genus)		
784				Phalacrotopsylla allos		
785				Phalacrotopsylla hamata		
786				Phalacrotopsylla morlani		
787				Phalacrotopsylla nivalis		
788				Phalacrotopsylla oregonensis		
789				Phalacrotopsylla paradisea		
790				Phenacomys intermedius		
791				Phoca vitulina		
792				Phyllostomus (Genus)		
793				Phyllostomus hastatus		
794				Physignathus cocincinus		
795				Pipistrellus hesperus		
796				Pipistrellus subflavus		
797				Pituophis melanoleucus		
798				Plecotus townsendii		
799				Pleochaetis exilis		
800				Pleochaetis mundus		
801				Pleochaetis paramundus		
802				Pleochaetis sp. (Genus)		
803				Plusaetis asetis		
804				Plusaetis aztecus		
805				Plusaetis dolens		
806				Plusaetis mathesoni		
807				Plusaetis parus		
808				Plusaetis ponsi		
809				Plusaetis sibynus		
810				Plusaetis soberoni		
811				Podomys floridanus		
812				Polygenis adocetus		
813				Polygenis floridanus		
814				Polygenis gwyni		
815				Polygenis martinezbaezi		
816				Polygenis odiosus		
817				Polygenis rozeboomi		

	A	B	C
818			Trypanosoma cruzi
819			Trypanosoma species
820			Tsukamurella inchnensis
821			Tsukamurella pulmonis
822			Tsukamurella species
823			Tsukamurella tyrosinosolvens
824			Unknown
825			Ustilago species
826			Vaccinia virus (smallpox vaccine)
827			Variola virus (smallpox)
828			Vibrio alginolyticus
829			Vibrio cholerae
830			Vibrio cidicii
831			Vibrio cincinnatiensis
832			Vibrio fluvialis
833			Vibrio furnissii
834			Vibrio harveyi
835			Vibrio hollisae
836			Vibrio metoecus
837			Vibrio metschnikovii
838			Vibrio mimicus
839			Vibrio navarrensis
840			Vibrio parahaemolyticus
841			Vibrio species
842			Vibrio vulnificus
843			Virus
844			Wangiella dermatitidis
845			Weissella paramesenteroides
846			Whipworm (Trichuris trichiura)
847			Williamsia species
848			Wuchereria bancrofti
849			Wuchereria species
850			Xanthomonas species
851			Yersinia enterocolitica
852			Yersinia frederiksenii
853			Yersinia intermedia
854			Yersinia kristensenii
855			Yersinia massiliensis
856			Yersinia pestis
857			Yersinia pseudotuberculosis
858			Yersinia ruckeri
859			Yersinia species
860			Yokenella regensburgei
861			Zika virus
862			Zygomycetes
863			Zygosaccharomyces species
864			
865			
866			

	AM	AN	AO	AP
818			Polecat_European	Mustela putorius subsp furo
819			Porcupine	Erethizon dorsatum
820			Prairie dog (Genus Cynomys)	Cynomys (Genus)
821			Prairie Dog, Utah	Cynomys parvidens
822			Prairie Dog_Black-tailed	Cynomys ludovicianus
823			Prairie Dog_Gunnison's	Cynomys gunnisoni
824			Prairie Dog_Mexican	Cynomys mexicanus
825			Prairie Dog_White-tailed	Cynomys leucurus
826			Primate (Order Primates)	Primates (Order)
827			Primate_Nonhuman (Generic name)	[Primate_Nonhuman]
828			Quail (Generic name)	[Quail]
829			Rabbit (Generic name)	[Rabbit]
830			Rabbit_Brush	Sylvilagus bachmani
831			Rabbit_Cottontail, Desert	Sylvilagus audubonii
832			Rabbit_Cottontail, Eastern	Sylvilagus floridanus
833			Rabbit_Cottontail, Mexican	Sylvilagus cunicularius
834			Rabbit_Cottontail, New England	Sylvilagus transitionalis
835			Rabbit_Cottontail, Tres Marias	Sylvilagus graysoni
836			Rabbit_Cottontails (Genus Sylvilagus)	Sylvilagus (Genus)
837			Rabbit_European	Oryctolagus cuniculus
838			Rabbit_European (Genus Oryctolagus)	Oryctolagus (Genus)
839			Rabbit_Forest	Sylvilagus brasiliensis
840			Rabbit_Marsh	Sylvilagus palustris
841			Rabbit_Nuttall's	Sylvilagus nuttallii
842			Rabbit_Omilteme	Sylvilagus insonus
843			Rabbit_Pygmy	Brachylagus idahoensis
844			Rabbit_San Jose Brush	Sylvilagus mansuetus
845			Rabbit_Swamp	Sylvilagus aquaticus
846			Raccoon, Common	Procyon lotor
847			Raccoon_Cozumel (Pygmy)	Procyon pygmaeus
848			Raccoon_Crab-eating	Procyon cancrivorus
849			Rat (Genus Rattus)	Rattus (Genus)
850			Rat_Black (Roof)	Rattus rattus
851			Rat_Cotton	Sigmodon alleni
852			Rat_Cotton, Arizona	Sigmodon arizonae
853			Rat_Cotton, White-eared	Sigmodon leucotis
854			Rat_Cotton, Yellow-nosed	Sigmodon ochrognathus
855			Rat_Cotton, Zacatecan (Tawny-bellied)	Sigmodon fulviventor
856			Rat_Himalayan	Rattus nitidus
857			Rat_Hispid Cotton	Sigmodon hispidus
858			Rat_Isthmus, Mount Pirri	Isthmomys pirrensis
859			Rat_Norway	Rattus norvegicus
860			Rat_Polynesian	Rattus exulans
861			Rat_Pygmy rice (Genus Oligoryzomys)	Oligoryzomys (Genus)
862			Rat_Terraced rice	Oryzomys subflavus
863			Rat_Woosnam's Brush-furred	Lophuromys woosnami
864			Rat_Yellow Isthmus	Isthmomys flavidus
865			Rattlesnake_Aruba Island	Crotalus dirissus subsp unicolor
866			Rattlesnake_Tiger	Crotalus tigris

WA-KINGCO-20-0492-G-000295

	AQ	AR	AS	AT	AU	AV
818				Polygenis sp. (Genus)		
819				Polygenis vazquezi		
820				Polygenis vulcanius		
821				Pongo pygmaeus		
822				Potos flavus		
823				Primates (Order)		
824				Procyon cancrivorus		
825				Procyon lotor		
826				Procyon pygmaeus		
827				Pteronotus macleayi		
828				Pteronotus parnelli		
829				Pteronotus quadridens		
830				Pteropus (Genus)		
831				Pteropus giganteus		
832				Pteropus rodricensis		
833				Pulex alverazi		
834				Pulex irritans		
835				Pulex porcinus		
836				Pulex simulans		
837				Pulex sinoculus		
838				Pulex sp. (Genus)		
839				Puma concolor		
840				Puma yagouaroundi		
841				Pythonidae (Family)		
842				Rangifer tarandus		
843				Rattus (Genus)		
844				Rattus exulans		
845				Rattus nitidus		
846				Rattus norvegicus		
847				Rattus rattus		
848				Reithrodontomys (Genus)		
849				Reithrodontomys brevirostris		
850				Reithrodontomys burti		
851				Reithrodontomys chrysopsis		
852				Reithrodontomys creper		
853				Reithrodontomys darienensis		
854				Reithrodontomys fulvescens		
855				Reithrodontomys gracilis		
856				Reithrodontomys hirsutus		
857				Reithrodontomys humulis		
858				Reithrodontomys megalotis		
859				Reithrodontomys mexicanus		
860				Reithrodontomys microdon		
861				Reithrodontomys montanus		
862				Reithrodontomys raviventris		
863				Reithrodontomys rodriguezi		
864				Reithrodontomys sumichrasti		
865				Reithrodontomys tenuirostris		
866				Reptilia (Class)		

	AM	AN	AO	AP
867			Redpoll_Common	Carduelis flammea
868			Reindeer (Caribou)	Rangifer tarandus
869			Reptile (Class Reptilia)	Reptilia (Class)
870			Rhinoceros_Black	Diceros bicornis
871			Rhinoceros_White	Ceratotherium simum (organism)
872			Rodent (Order Rodentia)	Rodentia (Order)
873			Sea Lion_California	Zalophus californianus
874			Seal (Generic name)	[Seal]
875			Seal_Harbor	Phoca vitulina
876			Sheep	Ovis aries
877			Sheep (Genus Ovis)	Ovis (Genus)
878			Sheep_Bighorn	Ovis canadensis
879			Sheep_Dall's	Ovis dalli
880			Shrew_American Short-tailed (Genus Blarina)	Blarina (Genus)
881			Shrew_Arctic	Sorex arcticus
882			Shrew_Carmen Mountain	Sorex milleri
883			Shrew_Dwarf	Sorex nanus
884			Shrew_Gaspe	Sorex gaspensis
885			Shrew_Glacier Bay Water	Sorex alaskanus
886			Shrew_House	Suncus murinus
887			Shrew_Inyo	Sorex tenellus
888			Shrew_Large-toothed	Sorex macrodon
889			Shrew_Least	Cryptotis parva
890			Shrew_Long-tailed	Sorex dispar
891			Shrew_Masked	Sorex cinereus
892			Shrew_Merriam's	Sorex merriami
893			Shrew_Mexican Long-tailed	Sorex oreopolus
894			Shrew_Mt. Lyell	Sorex lyelli
895			Shrew_Ornate	Sorex ornatus
896			Shrew_Pacific Water	Sorex bendirii
897			Shrew_Preble's	Sorex preblei
898			Shrew_Pribilof	Sorex pribilofensis
899			Shrew_Pygmy	Sorex hoyi
900			Shrew_San Cristobal	Sorex stizodon
901			Shrew_Santa Catalina	Sorex ornatus subsp willetti
902			Shrew_Saussure's	Sorex saussurei
903			Shrew_Sclater's	Sorex sclateri
904			Shrew_Smoky	Sorex fumeus
905			Shrew_Southeastern	Sorex longirostris
906			Shrew_St. Lawrence Island	Sorex jacksoni
907			Shrew_Trowbridge's	Sorex trowbridgii
908			Shrew_Vagrant	Sorex vagrans
909			Shrew_Verapaz	Sorex veraepacis
910			Shrew_Water	Sorex palustris
911			Siskin_Pine (Eurasian)	Carduelis spinus
912			Skunk (Family Mephitidae)	Mephitidae (Family)
913			Skunk_Eastern Hog-nosed	Conepatus leuconotus
914			Skunk_Hooded	Mephitis macroura

	AQ	AR	AS	AT	AU	AV
867				Rhadinopsylla arborea		
868				Rhadinopsylla difficilis		
869				Rhadinopsylla fraterna		
870				Rhadinopsylla heiseri		
871				Rhadinopsylla linta		
872				Rhadinopsylla liventricosa		
873				Rhadinopsylla media		
874				Rhadinopsylla mexicana		
875				Rhadinopsylla multidenticulata		
876				Rhadinopsylla orama		
877				Rhadinopsylla sectilis goodi		
878				Rhadinopsylla sectilis sectilis		
879				Rhadinopsylla sp. (Genus)		
880				Rhipicephalus microplus		
881				Rhipicephalus sanguineus		
882				Rhipicephalus spp.		
883				Rhombomys opimus		
884				Rodentia (Order)		
885				Rousettus aegyptiacus		
886				Rousettus lanosus		
887				Saguinus (Genus)		
888				Saguinus oedipus		
889				Saimiri sciureus		
890				Scalopus aquaticus		
891				Scapanus latimanus		
892				Scapanus orarius		
893				Scapanus townsendii		
894				Sciuridae (Family)		
895				Sciurus aberti		
896				Sciurus alleni		
897				Sciurus arizonensis		
898				Sciurus aureogaster		
899				Sciurus carolinensis		
900				Sciurus coliaei		
901				Sciurus deppei		
902				Sciurus granatensis		
903				Sciurus griseus		
904				Sciurus nayaritensis		
905				Sciurus niger cinereus		
906				Sciurus oculatus		
907				Sciurus richmondi		
908				Sciurus variegatoides		
909				Sciurus vulgaris		
910				Sciurus yucatanensis		
911				Scuirus (Genus)		
912				Serpentes (Suborder)		
913				Sigmodon alleni		
914				Sigmodon arizonae		

	AM	AN	AO	AP
915			Skunk_Spotted (Genus)	Spilogale (Genus)
916			Skunk_Spotted, Eastern	Spilogale putorius
917			Skunk_Spotted, Pygmy	Spilogale pygmaea
918			Skunk_Spotted, Southern	Spilogale angustifrons
919			Skunk_Spotted, Western	Spilogale gracilis
920			Skunk_Striped	Mephitis mephitis
921			Snake (Suborder Serpentes)	Serpentes (Suborder)
922			Snake_Boa, Red-tailed	Boa constrictor subsp constrictor
923			Snake_Pine	Pituophis melanoleucus
924			Snake_Python (Family Pythonidae)	Pythonidae (Family)
925			Snake_Rat, Red (Corn)	Pantherophis guttatus
926			Spiders (Order Araneae)	Order Araneae
927			Squirrel (Family Sciuridae)	Sciuridae (Family)
928			Squirrel, Rock	Spermophilus variegatus
929			Squirrel_Allen's	Sciurus alleni
930			Squirrel_American Red	Tamiasciurus hudsonicus
931			Squirrel_Americian Flying (Genus Glaucomys)	Glaucomys (Genus)
932			Squirrel_Arizona Gray	Sciurus arizonensis
933			Squirrel_Collie's	Sciurus coliaei
934			Squirrel_Deppe's	Sciurus deppei
935			Squirrel_Douglas'	Tamiasciurus douglasii
936			Squirrel_Eastern Fox	Sciurus niger cinereus
937			Squirrel_Eastern Gray	Sciurus carolinensis
938			Squirrel_Espiritu Santo Island Antelope	Ammospermophilus insularis
939			Squirrel_Eurasian Red	Sciurus vulgaris
940			Squirrel_Ground (Genus Spermophilus)	Spermophilus (Genus)
941			Squirrel_Ground, Baja California Rock	Spermophilus atricapillus
942			Squirrel_Ground, Belding's	Spermophilus beldingi
943			Squirrel_Ground, California	Spermophilus beecheyi
944			Squirrel_Ground, Cascade Golden-mantled	Spermophilus saturatus
945			Squirrel_Ground, Columbian	Spermophilus columbianus
946			Squirrel_Ground, Franklin's	Spermophilus franklinii
947			Squirrel_Ground, Golden-mantled	Spermophilus lateralis
948			Squirrel_Ground, Little	Spermophilus pygmaeus
949			Squirrel_Ground, Long-clawed	Spermophilopsis leptodactylus
950			Squirrel_Ground, Long-tailed	Spermophilus undulatus
951			Squirrel_Ground, Mexican	Spermophilus mexicanus
952			Squirrel_Ground, Mohave	Spermophilus mohavensis
953			Squirrel_Ground, Perote	Spermophilus perotensis
954			Squirrel_Ground, Richardson's	Spermophilus richardsonii
955			Squirrel_Ground, Ring-tailed	Spermophilus annulatus
956			Squirrel_Ground, Round-tailed	Spermophilus tereticaudus
957			Squirrel_Ground, Sierra Madre	Spermophilus madrensis
958			Squirrel_Ground, Spotted	Spermophilus spilosoma
959			Squirrel_Ground, Thirteen-lined	Spermophilus tridecemlineatus
960			Squirrel_Ground, Townsend's	Spermophilus townsendii
961			Squirrel_Ground, Tropical	Spermophilus adocetus
962			Squirrel_Ground, Uinta	Spermophilus armatus
963			Squirrel_Ground, Washington	Spermophilus washingtoni

WA-KINGCO-20-0492-G-000299

	AQ	AR	AS	AT	AU	AV
915				Sigmodon fulviventor		
916				Sigmodon hispidus		
917				Sigmodon leucotis		
918				Sigmodon ochrognathus		
919				Simulium nigricoxum		
920				Sorex alaskanus		
921				Sorex arcticus		
922				Sorex bendirii		
923				Sorex cinereus		
924				Sorex dispar		
925				Sorex fumeus		
926				Sorex gaspensis		
927				Sorex hoyi		
928				Sorex jacksoni		
929				Sorex longirostris		
930				Sorex lyelli		
931				Sorex macrodon		
932				Sorex merriami		
933				Sorex milleri		
934				Sorex nanus		
935				Sorex oreopolus		
936				Sorex ornatus		
937				Sorex ornatus subsp willetti		
938				Sorex palustris		
939				Sorex preblei		
940				Sorex pribilofensis		
941				Sorex saussurei		
942				Sorex sclateri		
943				Sorex stizodon		
944				Sorex tenellus		
945				Sorex trowbridgii		
946				Sorex vagrans		
947				Sorex veraepacis		
948				Spermophilopsis leptodactylus		
949				Spermophilus (Genus)		
950				Spermophilus adocetus		
951				Spermophilus annulatus		
952				Spermophilus armatus		
953				Spermophilus atricapillus		
954				Spermophilus beecheyi		
955				Spermophilus beldingi		
956				Spermophilus columbianus		
957				Spermophilus franklinii		
958				Spermophilus lateralis		
959				Spermophilus madrensis		
960				Spermophilus mexicanus		
961				Spermophilus mohavensis		
962				Spermophilus perotensis		
963				Spermophilus pygmaeus		

	AM	AN	AO	AP
964			Squirrel_Harris' Antelope	Ammospermophilus harrisi
965			Squirrel_Mexican Gray	Sciurus aureogaster
966			Squirrel_Nayarit	Sciurus nayaritensis
967			Squirrel_Nelson's (San Joaquin Antelope)	Ammospermophilus nelsoni
968			Squirrel_Northern flying	Glaucomys sabrinus
969			Squirrel_Peter's	Sciurus oculatus
970			Squirrel_Red-tailed	Sciurus granatensis
971			Squirrel_Richmond's	Sciurus richmondi
972			Squirrel_Southern flying	Glaucomys volans
973			Squirrel_Tassel-eared (Abert's)	Sciurus aberti
974			Squirrel_Texas Antelope	Ammospermophilus interpres
975			Squirrel_Tree (Genus Scuirus)	Scuirus (Genus)
976			Squirrel_Variagated	Sciurus variegatoides
977			Squirrel_Western Gray	Sciurus griseus
978			Squirrel_White-tailed Antelope	Ammospermophilus leucurus
979			Squirrel_Yucatan	Sciurus yucatanensis
980			Sugar Glider	Petaurus breviceps
981			Tick (Amblyomma americanum)	Amblyomma americanum
982			Tick (Amblyomma dubitatum)	Amblyomma dubitatum
983			Tick (Amblyomma imitator)	Amblyomma imitator
984			Tick (Amblyomma inornatum)	Amblyomma inornatum
985			Tick (Amblyomma interandinum)	Amblyomma interandinum
986			Tick (Amblyomma maculatum)	Amblyomma maculatum
987			Tick (Amblyomma ovale)	Amblyomma ovale
988			Tick (Amblyomma patinoi)	Amblyomma patinoi
989			Tick (Amblyomma sculptum)	Amblyomma sculptum
990			Tick (Amblyomma spp.)	Amblyomma spp.
991			Tick (Amblyomma tonelliae)	Amblyomma tonelliae
992			Tick (Amblyomma triste)	Amblyomma triste
993			Tick (Amblyomma tuberculatum)	Amblyomma tuberculatum
994			Tick (Amblyomma variegatum)	Amblyomma variegatum
995			Tick (Amblyomma mixtum)	Amblyomma mixtum
996			Tick (Dermacentor albipictus)	Dermacentor albipictus
997			Tick (Dermacentor andersoni)	Dermacentor andersoni
998			Tick (Dermacentor hunteri)	Dermacentor hunteri
999			Tick (Dermacentor marginatus)	Dermacentor marginatus
1000			Tick (Dermacentor nitens)	Dermacentor nitens
1001			Tick (Dermacentor occidentalis)	Dermacentor occidentalis
1002			Tick (Dermacentor parumapertus)	Dermacentor parumapertus
1003			Tick (Dermacentor reticulatus)	Dermacentor reticulatus
1004			Tick (Dermacentor spp.)	Dermacentor spp.
1005			Tick (Dermacentor variabilis)	Dermacentor variabilis
1006			Tick (Haemaphysalis spp.)	Haemaphysalis spp.
1007			Tick (Ixodes affinis)	Ixodes affinis
1008			Tick (Ixodes angustus)	Ixodes angustus
1009			Tick (Ixodes brunneus)	Ixodes brunneus

WA-KINGCO-20-0492-G-000301

	AQ	AR	AS	AT	AU	AV
964				Spermophilus richardsonii		
965				Spermophilus saturatus		
966				Spermophilus spilosoma		
967				Spermophilus tereticaudus		
968				Spermophilus townsendii		
969				Spermophilus tridecemlineatus		
970				Spermophilus undulatus		
971				Spermophilus variegatus		
972				Spermophilus washingtoni		
973				Spicata botticeps		
974				Spicata comis		
975				Spicata minidoka		
976				Spicata monticola		
977				Spicata moorei		
978				Spicata nuditenacula		
979				Spicata pacifica		
980				Spicata rara		
981				Spilogale (Genus)		
982				Spilogale angustifrons		
983				Spilogale gracilis		
984				Spilogale putorius		
985				Spilogale pygmaea		
986				Stenistomera alpina		
987				Stenistomera hubbardi		
988				Stenistomera macrodactyla		
989				Stenoponia americana		
990				Stenoponia ponera		
991				Sternopsylla distincta		
992				Sternopsylla distincta texana		
993				Strepsylla dalmati		
994				Strepsylla davisae		
995				Strepsylla fautini		
996				Strepsylla machadoi		
997				Strepsylla mina		
998				Strepsylla schmidtii		
999				Strepsylla taluna		
1000				Strepsylla villai		
1001				Subfamily Triatominae		
1002				Suborder Ixodides		
1003				Subphylum Crustacea		
1004				Suncus murinus		
1005				Suricata suricatta		
1006				Sus (Genus)		
1007				Sus scrofa		
1008				Sylvilagus (Genus)		
1009				Sylvilagus aquaticus		

	AM	AN	AO	AP
1010			Tick (<i>Ixodes cookei</i>)	<i>Ixodes cookei</i>
1011			Tick (<i>Ixodes dentatus</i>)	<i>Ixodes dentatus</i>
1012			Tick (<i>Ixodes kingi</i>)	<i>Ixodes kingi</i>
1013			Tick (<i>Ixodes marxi</i>)	<i>Ixodes marxi</i>
1014			Tick (<i>Ixodes muris</i>)	<i>Ixodes muris</i>
1015			Tick (<i>Ixodes ovatus</i>)	<i>Ixodes ovatus</i>
1016			Tick (<i>Ixodes pacificus</i>)	<i>Ixodes pacificus</i>
1017			Tick (<i>Ixodes persulcatus</i>)	<i>Ixodes persulcatus</i>
1018			Tick (<i>Ixodes ricinus</i>)	<i>Ixodes ricinus</i>
1019			Tick (<i>Ixodes scapularis</i>)	<i>Ixodes scapularis</i>
1020			Tick (<i>Ixodes sculptus</i>)	<i>Ixodes sculptus</i>
1021			Tick (<i>Ixodes</i> spp.)	<i>Ixodes</i> spp.
1022			Tick (<i>Rhipicephalus microplus</i>)	<i>Rhipicephalus microplus</i>
1023			Tick (<i>Rhipicephalus sanguineus</i>)	<i>Rhipicephalus sanguineus</i>
1024			Tick (<i>Rhipicephalus</i> spp.)	<i>Rhipicephalus</i> spp.
1025			Ticks (Suborder Ixodides)	Suborder Ixodides
1026			Tiger	<i>Panthera tigris</i>
1027			Tongueworm	<i>Linguatula</i> (Genus)
1028			Turkey (Generic name)	[Turkey]
1029			Turtle (Generic name)	[Turtle]
1030			Turtle_Slider, Red-eared	<i>Trachemys scripta</i> subsp <i>elegans</i>
1031			Turtle_Snapping, American	<i>Chelydra serpentina</i>
1032			Unknown	Unknown
1033			Unknown	Unknown
1034			Vole (Generic name)	[Vole]
1035			Vole (Genus <i>Microtus</i>)	<i>Microtus</i> (Genus)
1036			Vole, Red Tree	<i>Arborimus longicaudus</i>
1037			Vole_Bank	<i>Clethrionomys glariolus</i>
1038			Vole_Beach	<i>Microtus breweri</i>
1039			Vole_Coronation Island	<i>Microtus longicaudus</i> subsp <i>coronarius</i>
1040			Vole_Creeping	<i>Microtus oregoni</i>
1041			Vole_European water	<i>Arvicola terrestris</i>
1042			Vole_Gapper's Red-backed	<i>Clethrionomys gapperi</i> subsp <i>occidentalis</i>
1043			Vole_Guatemalan	<i>Microtus guatemalensis</i>
1044			Vole_Insular (St. Matthews Island)	<i>Microtus abbreviatus</i>
1045			Vole_Jalapan Pine	<i>Microtus quasiater</i>
1046			Vole_Long-tailed	<i>Microtus longicaudus</i>
1047			Vole_Meadow	<i>Microtus pennsylvanicus</i>
1048			Vole_Meadow mouse, California	<i>Microtus californicus</i>
1049			Vole_Mexican	<i>Microtus mexicanus</i>
1050			Vole_Montane	<i>Microtus montanus</i>
1051			Vole_Northern Red-backed	<i>Clethrionomys rutilus</i>
1052			Vole_Pine	<i>Microtus pinetorum</i>
1053			Vole_Prairie	<i>Microtus ochrogaster</i>
1054			Vole_Red-backed (Genus <i>Clethrionomys</i>)	<i>Clethrionomys</i> (Genus)
1055			Vole_Rock	<i>Microtus chrotorrhinus</i>
1056			Vole_Sagebrush	<i>Lemmiscus curtatus</i>

	AQ	AR	AS	AT	AU	AV
1010				Sylvilagus audubonii		
1011				Sylvilagus bachmani		
1012				Sylvilagus brasiliensis		
1013				Sylvilagus cunicularius		
1014				Sylvilagus floridanus		
1015				Sylvilagus graysoni		
1016				Sylvilagus insonus		
1017				Sylvilagus mansuetus		
1018				Sylvilagus nuttallii		
1019				Sylvilagus palustris		
1020				Sylvilagus transitionalis		
1021				Tadarida (Genus)		
1022				Tadarida brasiliensis		
1023				Talpidae (Family)		
1024				Tamias (Genus)		
1025				Tamias alpinus		
1026				Tamias amoenus		
1027				Tamias bulleri		
1028				Tamias cinereicollis		
1029				Tamias dorsalis		
1030				Tamias merriami		
1031				Tamias minimus		
1032				Tamias palmeri		
1033				Tamias panamintinus		
1034				Tamias quadrimaculatus		
1035				Tamias quadrivittatus		
1036				Tamias ruficaudus		
1037				Tamias rufus		
1038				Tamias senex		
1039				Tamias sonomae		
1040				Tamias speciosus		
1041				Tamias striatus		
1042				Tamias townsendii		
1043				Tamias umbrinus		
1044				Tamiasciurus douglasii		
1045				Tamiasciurus hudsonicus		
1046				Tarsopsylla octodecimdentata		
1047				Taurotragus (Genus)		
1048				Taxidea taxus		
1049				Thomasomys (Genus)		
1050				Thomomys (Genus)		
1051				Thomomys bottae		
1052				Thomomys bulbivorus		
1053				Thomomys monticola		
1054				Thomomys talpoides		
1055				Thomomys townsendii		
1056				Thomomys umbrinus		

	AM	AN	AO	AP
1057			Vole_Singing	Microtus miurus
1058			Vole_Southern Red-backed	Clethrionomys gapperi
1059			Vole_Townsend's	Microtus townsendii
1060			Vole_Tundra	Microtus oeconomus
1061			Vole_Water	Microtus richardsoni
1062			Vole_Western heather	Phenacomys intermedius
1063			Vole_White-footed	Arborimus albipes
1064			Vole_Yellow-cheeked	Microtus xanthognathus
1065			Vole_Zempoaltepec	Microtus umbrosus
1066			Wallaby (Generic name)	[Wallaby]
1067			Wallaby_Rock (Genus Petrogale)	Petrogale (Genus)
1068			Wallaroo	Macropus robustus
1069			Weasel (Genus Mustela)	Mustela (Genus)
1070			Weasel_Long-tailed	Mustela frenata
1071			Weasel_Short-tailed	Mustela erminea
1072			Weasel_Siberian	Mustela siberica
1073			Wildebeest (Genus Connochaetes)	Connochaetes (Genus)
1074			Wildebeest, Blue	Connochaetes taurinus
1075			Wolf_Gray	Canis lupus
1076			Wolf_Gray X Dog Hybrid	Canis lupus X Canis lupus familiaris hybrid
1077			Wolf_Red	Canis lupus subsp rufus
1078			Wolverine	Gulo gulo
1079			Wolverine_North American subpecies	Gulo gulo subsp luscus
1080			Woodchuck (Groundhog)	Marmota monax
1081			Woodrat (Packrat) (Genus Neotoma)	Neotoma (Genus)
1082			Woodrat_Allen's	Hodomys alleni
1083			Woodrat_Anthony's	Neotoma anthonyi
1084			Woodrat_Bolanos	Neotoma palatina
1085			Woodrat_Bryant's	Neotoma bryanti
1086			Woodrat_Bunker's	Neotoma bunkereri
1087			Woodrat_Bushy-tailed	Neotoma cinerea
1088			Woodrat_Desert	Neotoma lepida
1089			Woodrat_Dusky-footed	Neotoma fuscipes
1090			Woodrat_Eastern	Neotoma floridana
1091			Woodrat_Goldman's	Neotoma goldmani
1092			Woodrat_Mexican	Neotoma mexicana
1093			Woodrat_Nelson's	Neotoma nelsoni
1094			Woodrat_San Martin Island	Neotoma martinensis
1095			Woodrat_Sonoran	Neotoma phenax
1096			Woodrat_Southern Plains	Neotoma micropus
1097			Woodrat_Stephens'	Neotoma stephensi
1098			Woodrat_Tamaulipan	Neotoma augustapalata
1099			Woodrat_Turner Island	Neotoma varia
1100			Woodrat_White-throated	Neotoma albigula
1101			Zebra	Equus zebra
1102			Zebra_Burchell's (Plains)	Equus burchellii
1103			Zorilla	Ictonyx striatus

	AQ	AR	AS	AT	AU	AV
1057				Thrassis acamantis		
1058				Thrassis aridis		
1059				Thrassis arizonensis		
1060				Thrassis bacchi		
1061				Thrassis fatus		
1062				Thrassis francisi		
1063				Thrassis pandorae		
1064				Thrassis petiolatus		
1065				Thrassis sp. (Genus)		
1066				Thrassis spenceri		
1067				Thrassis stanfordi		
1068				Tiamastus cavicola		
1069				Trachemys scripta subsp elegans		
1070				Traubella neotomae		
1071				Trichoglossus haematodus moluccanus		
1072				Trichopsylloides oregonensis		
1073				Tunga monositus		
1074				Tunga penetrans		
1075				Uncia uncia		
1076				Unknown		
1077				Unknown		
1078				Urocyon cinereoargenteus		
1079				Urocyon littoralis		
1080				Ursus (Genus)		
1081				Ursus americanus		
1082				Ursus arctos		
1083				Ursus arctos subsp horribilis		
1084				Ursus maritimus		
1085				Vulpes (Genus)		
1086				Vulpes lagopus		
1087				Vulpes macrotis		
1088				Vulpes velox		
1089				Vulpes vulpes		
1090				Vulpes vulpes subsp fulvus		
1091				Vulpes zerda		
1092				Xenopsylla brasiliensis		
1093				Xenopsylla cheopis		
1094				Xenopsylla eridos		
1095				Xenopsylla philoxera		
1096				Xenopsylla phyllomae		
1097				Xenopsylla vexabilis		
1098				Zalophus californianus		
1099				Zapus hudsonius		
1100				Zapus princeps		
1101				Zapus trinotatus		
1102						
1103						

From: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Sent: Tuesday, February 25, 2020 7:18 AM PST
To: Duchin, Jeff
CC: Lindquist, Scott SL (CDC doh.wa.gov); Karen Cowgill; Kay, Meagan; Kuhnert-Tallman, Wendi (CDC/DDID/OD); Armstrong, Gregory (CDC/DDID/NCEZID/OD)
Subject: RE: Research Testing

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

My understanding is that these results cant be communicated back to patients, nor influenza patient management. But they can influenza general public health actions that are not focused on the individual patient – such as modifying containment or mitigation approaches, altering surveillance or IPC guidance, etc.

Wendi – is this a correct interpretation?
Joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 7:37 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Karen Cowgill <kdc8@uw.edu>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: Fw: Research Testing

Joe - please see below. Confirming CDC OK with research testing by UW/SFS and seeking guidance on if/how results can be communicated.

Thanks - Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 4:35 PM
To: Mark J Rieder <mrieder@uw.edu>; Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>
Cc: Robin Prentice <robins4@uw.edu>; Jay Shendure <shendure@gmail.com>; Helen Y Chu <helenchu@uw.edu>; Lea Starita <lstarita@uw.edu>; Paul Nevin <paul.nevin@gatesventures.com>
Subject: Re: Research Testing

Thanks, Mark. As for cleared by CDC, Joe Bresee said he had no objections - I'm not sure if anything more formal is needed. We did not get confirmation from CDC/FDA yet as to whether SFS can report results to any agency or public - will resend that question. Scott - anything to add?

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>
Sent: Monday, February 24, 2020 4:25 PM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>
Cc: Robin Prentice <robins4@uw.edu>; Jay Shendure <shendure@gmail.com>; Helen Y Chu <helenchu@uw.edu>; Lea Starita <lstarita@uw.edu>; Paul Nevin <paul.nevin@gatesventures.com>
Subject: Research Testing

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Jeff and Scott -

We have had some fragmented email threads, so I want to be clear that we are planning on starting research testing of our SFS samples this week. I am confirming that Jeff has heard from CDC and we are clear to do our SARS-CoV2 testing and that Scott is also aligned.

As I mentioned, any research result will be confirmed with sequencing which would take up to 7 days. Communication of any aggregate research results more broadly would be in partnership with PHSKC, CDC, and WA DOH.

We are setting up a meeting to further discuss results communication this but I want to get your explicit confirmation in advance on testing.

Thanks
Mark

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD)
Sent: Tuesday, February 25, 2020 4:05 PM PST
To: Bresee, Joseph (CDC/DDID/NCIRD/ID); Duchin, Jeff
CC: Lindquist, Scott SL (CDC doh.wa.gov); Karen Cowgill; Kay, Meagan; Armstrong, Gregory (CDC/DDID/NCEZID/OD)
Subject: RE: Research Testing

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks Joe, I believe so.

The surveillance testing that CDC has been granted approval to perform and support is limited to the CDC manufactured assay only. Any other testing would need to be done as surveillance and could not be done with a link to a patient.

Thanks, wendi

Wendi Kuhnert-Tallman
Office - 404-639-3103
Mobile – 678-576-2121

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Tuesday, February 25, 2020 10:18 AM
To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Karen Cowgill <kdc8@uw.edu>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>
Subject: RE: Research Testing

My understanding is that these results cant be communicated back to patients, nor influenza patient management. But they can influenza general public health actions that are not focused on the individual patient – such as modifying containment or mitigation approaches, altering surveillance or IPC guidance, etc.

Wendi – is this a correct interpretation?
Joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 7:37 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Karen Cowgill <kdc8@uw.edu>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: Fw: Research Testing

Joe - please see below. Confirming CDC OK with research testing by UW/SFS and seeking guidance on if/how results can be communicated.

Thanks - Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 4:35 PM
To: Mark J Rieder <mrieder@uw.edu>; Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>
Cc: Robin Prentice <robins4@uw.edu>; Jay Shendure <shendure@gmail.com>; Helen Y Chu <helenchu@uw.edu>; Lea Starita <lstarita@uw.edu>; Paul Nevin <paul.nevin@gatesventures.com>
Subject: Re: Research Testing

Thanks, Mark. As for cleared by CDC, Joe Bresee said he had no objections - I'm not sure if anything more formal is needed. We did not get confirmation from CDC/FDA yet as to whether SFS can report results to any agency or public - will resend that question. Scott - anything to add?

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>
Sent: Monday, February 24, 2020 4:25 PM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>
Cc: Robin Prentice <robins4@uw.edu>; Jay Shendure <shendure@gmail.com>; Helen Y Chu <helenchu@uw.edu>; Lea Starita <lstarita@uw.edu>; Paul Nevin <paul.nevin@gatesventures.com>
Subject: Research Testing

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Jeff and Scott -

We have had some fragmented email threads, so I want to be clear that we are planning on starting research testing of our SFS samples this week. I am confirming that Jeff has heard from CDC and we are clear to do our SARS-CoV2 testing and that Scott is also aligned.

As I mentioned, any research result will be confirmed with sequencing which would take up to 7 days. Communication of any aggregate research results more broadly would be in partnership with PHSKC, CDC, and WA DOH.

We are setting up a meeting to further discuss results communication this but I want to get your explicit confirmation in advance on testing.

Thanks
Mark

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD)
Sent: Tuesday, February 25, 2020 4:53 PM PST
To: Duchin, Jeff; Bresee, Joseph (CDC/DDID/NCIRD/ID)
CC: Lindquist, Scott SL (CDC doh.wa.gov); Karen Cowgill; Kay, Meagan; Armstrong, Gregory (CDC/DDID/NCEZID/OD)
Subject: Re: Research Testing

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Jeff, perhaps we can talk briefly by phone. I want to be sure I understand your question.
Thanks.

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Tuesday, February 25, 2020 7:40:23 PM
To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Karen Cowgill <kdc8@uw.edu>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>
Subject: Re: Research Testing

Thanks for considering the question, Wendy and Joe, though it seems a bit uncertain, still. Is there someone we can get a definitive answer from regarding how the results may be reported to public health (what info can be shared)?

Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Sent: Tuesday, February 25, 2020 4:05 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Karen Cowgill <kdc8@uw.edu>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>
Subject: RE: Research Testing

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks Joe, I believe so.

The surveillance testing that CDC has been granted approval to perform and support is limited to the CDC manufactured assay only. Any other testing would need to be done as surveillance and could not be done with a link to a patient.

Thanks, wendi

Wendi Kuhnert-Tallman
Office - 404-639-3103
Mobile – 678-576-2121

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Tuesday, February 25, 2020 10:18 AM
To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Karen Cowgill <kdc8@uw.edu>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>
Subject: RE: Research Testing

My understanding is that these results cant be communicated back to patients, nor influenza patient management. But they can influenza general public health actions that are not focused on the individual patient – such as modifying containment or mitigation approaches, altering surveillance or IPC guidance, etc.

Wendi – is this a correct interpretation?
Joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 7:37 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Karen Cowgill <kdc8@uw.edu>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: Fw: Research Testing

Joe - please see below. Confirming CDC OK with research testing by UW/SFS and seeking guidance on if/how results can be communicated.

Thanks - Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 4:35 PM
To: Mark J Rieder <mrieder@uw.edu>; Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>
Cc: Robin Prentice <robins4@uw.edu>; Jay Shendure <shendure@gmail.com>; Helen Y Chu <helenchu@uw.edu>; Lea Starita <lstarita@uw.edu>; Paul Nevin <paul.nevin@gatesventures.com>
Subject: Re: Research Testing

Thanks, Mark. As for cleared by CDC, Joe Bresee said he had no objections - I'm not sure if anything more formal is needed. We did not get confirmation from CDC/FDA yet as to whether SFS can report results to any agency or public - will resend that question. Scott - anything to add?

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>
Sent: Monday, February 24, 2020 4:25 PM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>
Cc: Robin Prentice <robins4@uw.edu>; Jay Shendure <shendure@gmail.com>; Helen Y Chu <helenchu@uw.edu>; Lea Starita <lstarita@uw.edu>; Paul Nevin <paul.nevin@gatesventures.com>
Subject: Research Testing

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Jeff and Scott -

We have had some fragmented email threads, so I want to be clear that we are planning on starting research testing of our SFS samples this week. I am confirming that Jeff has heard from CDC and we are clear to do our SARS-CoV2 testing and that Scott is also aligned.

As I mentioned, any research result will be confirmed with sequencing which would take up to 7 days. Communication of any aggregate research results more broadly would be in partnership with PHSKC, CDC, and WA DOH.

We are setting up a meeting to further discuss results communication this but I want to get your explicit confirmation in advance on testing.

Thanks
Mark

From: Podczervinski, Sara T (DOH)
Sent: Saturday, February 29, 2020 11:44 AM PST
To: Kay, Meagan; Duchin, Jeff; Lindquist, Scott W (DOH); Turnberg, Wayne (DOH); Pillai, Satish K. (CDC/DDID/NCEZID/DPEI); Brostrom-Smith, Claire; Clark, Shauna; D'Angeli, Marisa (DOH); Matheson, Jasmine S (DOH)
Subject: FW: Direction on IMT Structure Implementation - IMPORTANT
Attachments: Guidance Long Term Care Facilities 2-29-20.docx
Importance: High

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Fyi – draft of LTC guidance.

From: Meehan, Kathleen (DOH)
Sent: Saturday, February 29, 2020 11:41 AM
To: D'Angeli, Marisa (DOH) <Marisa.DAngeli@DOH.WA.GOV>; Nandi, Paj (DOH) <paj.nandi@doh.wa.gov>; DOH-Epi-Branch (DOH) <DOH-Epi-Branch@doh.wa.gov>
Cc: Montgomery, Patricia A (DOH) <patricia.montgomery@doh.wa.gov>; Podczervinski, Sara T (DOH) <sara.podczervinski@doh.wa.gov>; DOH-CETF (DOH) <DOH-CETF@doh.wa.gov>
Subject: RE: Direction on IMT Structure Implementation - IMPORTANT
Importance: High

Hi all,

Here is the current word version for sharing with SKing & CDC folks for their review. There would still be some more future formatting and I put a DRAFT watermark on this for now.

Next steps:

- DOH Epi folks to share with SKing & CDC for their review. Send Katie any edits or revisions once received.
- Katie to continue working on webpage for Long Term Care Facilities based off of this & other related content. Katie to send to whole group to review once ready.
- Katie to touch base with our webmaster, Derek Olson, about starting to further segment health care audiences on the website.

Thanks all!

Katie

From: Meehan, Kathleen (DOH)
Sent: Saturday, February 29, 2020 10:05 AM
To: D'Angeli, Marisa (DOH) <Marisa.DAngeli@DOH.WA.GOV>; Nandi, Paj (DOH) <paj.nandi@doh.wa.gov>; DOH-Epi-Branch (DOH) <DOH-Epi-Branch@doh.wa.gov>
Cc: Montgomery, Patricia A (DOH) <patricia.montgomery@doh.wa.gov>; Podczervinski, Sara T (DOH) <sara.podczervinski@doh.wa.gov>
Subject: RE: Direction on IMT Structure Implementation - IMPORTANT

I can work on pulling this into one of our more regular templates and pull out the content that is relevant for a webpage separately. I can re-send to this group for approval.

From: D'Angeli, Marisa (DOH)
Sent: Saturday, February 29, 2020 9:34 AM
To: Nandi, Paj (DOH) <paj.nandi@doh.wa.gov>; DOH-Epi-Branch (DOH) <DOH-Epi-Branch@doh.wa.gov>
Cc: Meehan, Kathleen (DOH) <Kathleen.Meehan@DOH.WA.GOV>; Montgomery, Patricia A (DOH) <patricia.montgomery@doh.wa.gov>; Podczervinski, Sara T (DOH) <sara.podczervinski@doh.wa.gov>; Meehan, Kathleen (DOH) <Kathleen.Meehan@DOH.WA.GOV>
Subject: RE: Direction on IMT Structure Implementation - IMPORTANT

Here is the newly edited version. This was pulled together very quickly and I don't think it's ready for prime time.

Maybe Sara, Patty and I should have a brief call to discuss?

Marisa

From: Nandi, Paj (DOH)
Sent: Saturday, February 29, 2020 9:02 AM
To: D'Angeli, Marisa (DOH) <Marisa.DAngeli@DOH.WA.GOV>; DOH-Epi-Branch (DOH) <DOH-Epi-Branch@doh.wa.gov>
Cc: Meehan, Kathleen (DOH) <Kathleen.Meehan@DOH.WA.GOV>; Montgomery, Patricia A (DOH) <patricia.montgomery@doh.wa.gov>; Podczervinski, Sara T (DOH) <sara.podczervinski@doh.wa.gov>; Meehan, Kathleen (DOH) <Kathleen.Meehan@DOH.WA.GOV>
Subject: RE: Direction on IMT Structure Implementation - IMPORTANT

Thanks for the update. Patty, let me know when we can review for public facing formatting and consumption.

(I'm in PHL today as well).

From: D'Angeli, Marisa (DOH)
Sent: Friday, February 28, 2020 9:54 PM
To: DOH-Epi-Branch (DOH) <DOH-Epi-Branch@doh.wa.gov>; Nandi, Paj (DOH) <paj.nandi@doh.wa.gov>
Cc: Meehan, Kathleen (DOH) <Kathleen.Meehan@DOH.WA.GOV>; Montgomery, Patricia A (DOH) <patricia.montgomery@doh.wa.gov>; Podczervinski, Sara T (DOH) <sara.podczervinski@doh.wa.gov>
Subject: Re: Direction on IMT Structure Implementation - IMPORTANT

I just sent it back to Patty.

M

From: DOH-Epi-Branch (DOH)
Sent: Friday, February 28, 2020 9:05:52 PM
To: Nandi, Paj (DOH)
Cc: Meehan, Kathleen (DOH); D'Angeli, Marisa (DOH); Montgomery, Patricia A (DOH); Podczervinski, Sara T (DOH)
Subject: RE: Direction on IMT Structure Implementation - IMPORTANT

Will do. Cc'ing our HAI team.

Thanks
Jasmine

From: Nandi, Paj (DOH)
Sent: Friday, February 28, 2020 8:54 PM
To: DOH-Epi-Branch (DOH) <DOH-Epi-Branch@doh.wa.gov>
Cc: Meehan, Kathleen (DOH) <Kathleen.Meehan@DOH.WA.GOV>
Subject: Re: Direction on IMT Structure Implementation - IMPORTANT

Okay great—would you send it my way when ready? I'll work with Comms to get it ready for posting on our web site tomorrow.

Katie—heads up!

Sent from my iPhone

On Feb 28, 2020, at 8:47 PM, DOH-Epi-Branch (DOH) <DOH-Epi-Branch@doh.wa.gov> wrote:

Currently in the works. A draft is done and Marisa is reviewing it tonight.

From: Nandi, Paj (DOH)
Sent: Friday, February 28, 2020 8:47 PM
To: DOH-Epi-Branch (DOH) <DOH-Epi-Branch@doh.wa.gov>
Subject: Re: Direction on IMT Structure Implementation - IMPORTANT

Hi—do we (or other reputable sources) have guidance for long term care facilities or nursing home?

Sent from my iPhone

On Feb 28, 2020, at 8:39 PM, DOH-Epi-Branch (DOH) <DOH-Epi-Branch@doh.wa.gov> wrote:

Thank you!

From: Nandi, Paj (DOH)
Sent: Friday, February 28, 2020 6:23 PM
To: DOH-Epi-Branch (DOH) <DOH-Epi-Branch@doh.wa.gov>
Subject: FW: Direction on IMT Structure Implementation - IMPORTANT

FYI

From: Todorovich, Jessica L (DOH)

Sent: Friday, February 28, 2020 5:51 PM

To: DOH-PIO (DOH) <doh-pio.imt@doh.wa.gov>; DOH-IC (DOH) <doh-ic.imt@doh.wa.gov>; DOH-IC2 (DOH) <doh-ic2.imt@doh.wa.gov>; DOH-IC3 (DOH) <doh-ic3.imt@doh.wa.gov>; DOH-CETF (DOH) <DOH-CETF@doh.wa.gov>; DOH-LOFR (DOH) <doh-lofr.imt@doh.wa.gov>; DOH-LSC (DOH) <doh-lsc.imt@doh.wa.gov>; DOH-FSC (DOH) <doh-fsc.imt@doh.wa.gov>; DOH-PSC (DOH) <doh-psc.imt@doh.wa.gov>; DOH-OSC (DOH) <doh-osc.imt@doh.wa.gov>; DOH-OSC2 (DOH) <doh-osc2.imt@doh.wa.gov>; Henry, Erika L (DOH) <erika.henry@doh.wa.gov>; Wickersham, Kevin P (DOH) <kevin.wickersham@doh.wa.gov>; Nandi, Paj (DOH) <paj.nandi@doh.wa.gov>; Price, Stephanie M (DOH) <Stephanie.Price@DOH.WA.GOV>; DOH-SOFR (DOH) <doh-sofr.imt@doh.wa.gov>; Weed, Nathan (DOH) <Nathan.Weed@DOH.WA.GOV>; Reynolds, Amy (DOH) <amy.reynolds@doh.wa.gov>; Jenks, Lauren (DOH) <Lauren.Jenks@DOH.WA.GOV>; Kenneweg, Danielle A (DOH) <Danielle.Kenneweg@DOH.WA.GOV>; DOH-Agency-IMT-Admin <DOH-Agency-IMT-Admin@wa.gov>

Cc: DOH DL Agency Leadership Team <DOHDLAgencyLeadershipTeam@doh.wa.gov>; DOH DL Agency Executive Team <DOHDLAgencyExecutiveTeam@DOH.WA.GOV>; DOH DL Agency Deputies Group <DOHDLAgencyDeputiesGroup2@doh.wa.gov>; Wiesman, John (DOH) <jmwiesman@doh.wa.gov>

Subject: Direction on IMT Structure Implementation - IMPORTANT

In coordination with our IMT Incident Commander, Nate Weed, and Agency Administrator, Lacy Fehrenbach, I want to provide overall direction for transition to the new IMT structure. The state's response structure at the state EOC is really taking off and it will be absolutely critical we are in lock step with this work. Going forward we need to be settled and solid to best support the state.

We are writing to clarify expectations about structure and locations of IMT work. In support of the DOH Covid-19 response we are directing that effective Monday March 2, 2020:

- Community Engagement Task Force members will be physically located with the Tumwater IMT in TC2 166 (unless specifically agreed i.e. Camp Murray ESF15 liaison)
- Healthcare Systems Readiness (formerly the Community Mitigation) Task Force members will be physically located with the Tumwater IMT in TC2 166
- PIOs will be physically located with the Area Command Tumwater in TC1 163 (unless specifically agreed i.e. 1 PIO liaison at the PHL in Shoreline until Quarantine demobilization)
- The NPI taskforce will remain at Camp Murray until it demobs
- The I&Q taskforce will remain at Shoreline until we demob the quarantine site next week and then will be located in Tumwater IMT in TC2 166.
- All activated staff will work 7 days a week and will rotate as assigned to ensure coverage while balancing the need for two rest days between activations.
- Any deviation from this agreement must be approved by the Area Commander in advance. This includes the option to telecommute.

It will be critical that leaders within the IMT and leaders across the agency support this structure and work within it. If you have concerns with staffing, locations, and/or work product you need to work within the structure with your IC. Leaders model for staff both within IMT and across the organization. We need every leader to demonstrate outwardness, work within the structure and use the appropriate IMT processes to complete work. I know that every single one of you is

working to accomplish your objectives and help us be successful in our mission. We believe this structure will allow us to do that. If you can't work within the structure or at the designated location let your IC know and we will make appropriate staff adjustments.

The Area Commander will be working very diligently to address issues quickly. We will have an agency administrator to help support excellent IMT and agency leadership coordination. I am also always available to problem-solve.

Thank you for your time, work and passion to make us successful. Please forward this as appropriate within the IMT and agency for clarify.

Jessica Todorovich

Gender Pronouns: she/her

Chief of Staff

Washington State Department of Health

Jessica.Todorovich@doh.wa.gov

360-236-4030 | www.doh.wa.gov

[<image002.png>](#)

Recommendations for Long Term Care Facilities during COVID-19 Outbreak

The Washington State Department of Health has developed this guidance to assist long term and residential care facilities in response to the COVID-19 outbreak. While the situation is evolving, at this time we believe that elderly patients and those with chronic medical conditions may be at higher risk for severe illness from COVID-19. Long term care facilities have experience managing respiratory infections and outbreaks among residents and staff and should apply the same outbreak management principles to COVID-19

1. Review and update your pandemic influenza preparedness plans. If you do not have a plan, a template can be found at [here](#).
2. Identify public health and professional resources
 - Local health department contact _____
 - State health department contact _____
 - State long-term care professional/trade association _____
3. Identify contacts for local, regional or state emergency preparedness groups, especially bioterrorism/communicable disease coordinators
 - City _____
 - County _____
 - Other _____
4. Identify contacts at local hospitals in preparation for potential need to hospitalize facility residents or to receive discharged patient from the hospital. Opening bed capacity in hospitals is vitally important as the outbreak spreads. **(attach a list of contacts)**
5. Perform surveillance to detect respiratory infections including COVID-19
 - Assign one person to monitor public health updates from local and state public health departments.
 - Implement protocol for daily monitoring of influenza-like-illness among residents and staff.
 - Assess incoming residents with respiratory symptoms for:
 - i. Travel to area with COVID-19 transmission in 14 days prior to illness onset
 - ii. Any diagnostic testing
6. Educate all personnel, residents, and family members of residents about COVID-19, potential harm from respiratory illnesses to nursing home residents, and basic prevention and control measures for respiratory infections such as influenza and COVID-19. Include the following topics:
 - Hand hygiene
 - Respiratory hygiene and cough etiquette
 - Use of PPE. PPE recommended when caring for COVID-19 patients
 - Screening visitors for illness
 - Limiting visitors during outbreaks

7. Review, implement, and reinforce an infection control plan for preventing communicable disease among residents, visitors, and facility personnel. The plan should include:
 - A policy for when direct care staff should use Standard, Droplet, and Contact precautions for residents with symptoms of respiratory infection.
 - A plan for implementing respiratory hygiene throughout the facility.
 - A plan for co-horting symptomatic residents or groups using one or more of the following strategies:
 - Confining symptomatic residents and exposed roommates to their rooms.
 - Placing symptomatic residents together in one area of the facility.
 - Closing units where symptomatic and asymptomatic residents reside.
 - Co-horting staff on either affected or non-affected units to prevent transmission between units.
 - Closing communal dining halls.
 - Canceling events in the facility where many people come together.
 - Cleaning and disinfecting high touch surfaces with EPA-registered disinfectant with label claim of effectiveness against human coronavirus or novel pathogens.
8. Develop criteria and protocols for closing units or the entire facility to new admissions when COVID-19 has been identified in the facility.
9. Develop criteria and protocols for enforcing visitor limitations.
 - Screen visitors for illness symptoms.
 - Consider screening visitors for recent travel to area with COVID-19 transmission
 - Post signage to guide visitors.
10. Implement an occupational health plan with non-punitive sick leave policy to address the needs of symptomatic personnel including
 - How to handle personnel who develop symptoms while at work.
 - When personnel can return to work after having COVID-19. As of February 29, public health requires confirmed cases to have 2 negative tests before isolation can be discontinued. This guidance will eventually be based on clinical symptoms but at this time the test based criteria apply.
 - Covering personnel who need to care for ill family members.
11. Educate staff to self-assess and report symptoms of respiratory illness before reporting for duty.
12. Identify staff who may be at higher risk for severe COVID-19 disease, and attempt to assign them to unaffected units.

13. Develop contingency staffing and patient placement plans:

- Identify minimum staffing needs and prioritize critical and non-essential services based on residents' health status, functional limitations, disabilities, and essential facility operations.
- Contact your healthcare coalition for guidance on altered standards of care in case residents need acute care and hospital beds are not available.
- Strategize about how your facility can help increase hospital bed capacity in the community.
- Establish memoranda of agreement with local hospitals for admission to the long-term care facility of non-influenza patients to facilitate utilization of acute care resources for more seriously ill patients.
- Identify facility space that could be adapted for use as expanded inpatient bedWashington State Department of Health novel coronavirus call center: 1-800-525-0127 and press #.

DRAFT

From: Dooling, Kathleen L. (CDC/DDID/NCIRD/DVD)
Sent: Wednesday, March 4, 2020 8:50 AM PST
To: Adam Welch; Al Benson; Duchin, Jeff; Edward Belongia; Fishman, Jay A; Cohen, Jeffrey (NIH/NIAID) [E]; Jeff Curtis; Duchin, Jeff; Jeffrey Curtis; drkellymoore (drkellymoore@yahoo.com); william.schaffner@vumc.org; Ken Schmader; Lee, Grace M; Lisa Prosser; Lynn Bahta; Mary Pat Friedlander; Cieslak, Paul (CDC.state.or.us); Agger, Paula (FDA/CBER); Robin Avery; Sandra Fryhofer; Steve Pergam; Vicki Morrison; Rafael Harpaz; Harpaz, Rafael (CDC/DDID/NCIRD/DVD)
CC: Cohn, Amanda (CDC/DDID/NCIRD/OD); Guo, Angela (CDC/DDID/NCIRD/DVD) (CTR); Courtney Jones; Ortega-Sanchez, Ismael (CDC/DDID/NCIRD/DVD); St. Pierre, Jeanette (CDC/DDID/NCIRD/DVD); Kathy Parham; Kroger, Andrew (CDC/DDID/NCIRD/ISD); Patel, Manisha M. (CDC/DDID/NCIRD/DVD); Pallansch, Mark A. (CDC/DDID/NCIRD/DVD); Marin, Mona (CDC/DDID/NCIRD/DVD); Schmid, Scott (CDC/DDID/NCIRD/DVD); Shainoor Ismail; Susan A Bartlett; Harrington, Theresa (CDC/DDID/NCEZID/DHQP); Coleman.Rotstein@uhn.ca; Clark, Thomas A. (CDC/DDID/NCIRD/DVD); Su, John (CDC/DDID/NCEZID/DHQP); MacNeil, Jessica R. (CDC/DDID/NCIRD/OD); Wallace, Megan (CDC/DDID/NCIRD/DVD); Dr. Coleman Rotstein; Anderson, Tara C. (CDC/DDPHSS/CSELS/DHIS)
Subject: HZWG meeting 03/09: CANCELLED

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello Everyone,

Due to conflicts resulting from COVID19 response, I am cancelling HZ Work Group meetings in March. Outlook cancellations are forthcoming.

Our next HZ WG meeting is scheduled for **April 13**.

Sincerely,

Kathleen

Medical Officer, Measles, Mumps, Rubella, Herpesvirus and Domestic Polio Team

VVPDB/ DVD / NCIRD

Bldg 24 / Room 5211

Vic9@cdc.gov

From: Ethier, Kathleen (CDC/DDID/NCHHSTP/DASH)
Sent: Friday, February 28, 2020 6:28 PM PST
To: Patel, Anita (CDC/DDID/NCIRD/OD); Pillai, Satish K. (CDC/DDID/NCEZID/DPEI);
Guh, Alice Y. (CDC/DDID/NCEZID/DHQP); Kay, Meagan; Duchin, Jeff
CC: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Jones, Christopher D. (CDC/DDNID/NCCDPPH/DHDSP);
Perz, Joseph (CDC/DDID/NCEZID/DHQP); Magill, Shelley (CDC/DDID/NCEZID/DHQP);
Kabbani, Sarah (CDC/DDID/NCEZID/DHQP); CDC IMS 2019 NCOV Healthcare Infection Control;
Jernigan, Daniel B. (CDC/DDID/NCIRD/ID); Williams, Ian (CDC/DDID/NCEZID/DFWED);
Armstrong, Gregory (CDC/DDID/NCEZID/OD)
Subject: Re: Seattle - unexplained severe respiratory illness skilled nursing facility

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Got it.

Kathleen A Ethier, PhD
Director, Division of Adolescent and School Health
Centers for Disease Control and Prevention

From: Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>
Sent: Friday, February 28, 2020 9:20:47 PM
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPPH/DHDSP) <vey2@cdc.gov>; Perz, Joseph (CDC/DDID/NCEZID/DHQP) <bzp4@cdc.gov>; Magill, Shelley (CDC/DDID/NCEZID/DHQP) <fxe9@cdc.gov>; Kabbani, Sarah (CDC/DDID/NCEZID/DHQP) <nfq8@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; Williams, Ian (CDC/DDID/NCEZID/DFWED) <iaw3@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Ethier, Kathleen (CDC/DDID/NCHHSTP/DASH) <kbe0@cdc.gov>
Subject: Re: Seattle - unexplained severe respiratory illness skilled nursing facility

Thanks all

+ leadership and community interventions for visibility

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Friday, February 28, 2020 9:12 PM
To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP); Kay, Meagan K. (CDC kingcounty.gov); Duchin, Jeff (CDC kingcounty.gov)
Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Patel, Anita (CDC/DDID/NCIRD/OD);
Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Jones, Christopher D. (CDC/DDNID/NCCDPPH/DHDSP); Perz, Joseph (CDC/DDID/NCEZID/DHQP); Magill, Shelley (CDC/DDID/NCEZID/DHQP); Kabbani, Sarah (CDC/DDID/NCEZID/DHQP); CDC IMS 2019 NCOV Healthcare Infection Control
Subject: RE: Seattle - unexplained severe respiratory illness skilled nursing facility

And one more update – just got off phone w/ Stephanie. We all concur with the need for testing for the first two bullets.

Best,
satish

From: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>
Sent: Friday, February 28, 2020 9:02 PM
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP) <vey2@cdc.gov>; Perz, Joseph (CDC/DDID/NCEZID/DHQP) <bzp4@cdc.gov>; Magill, Shelley (CDC/DDID/NCEZID/DHQP) <fxe9@cdc.gov>; Kabbani, Sarah (CDC/DDID/NCEZID/DHQP) <nfq8@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>
Subject: RE: Seattle - unexplained severe respiratory illness skilled nursing facility

Hi Meagan,

Yes, we'd be available to talk in the morning. I've copied a few others from the IPC team. I agree with proceeding with testing for SARS-CoV2 given a negative work up thus far (defer to Epi/PUI teams to weigh in). All patients should remain in single patient rooms. I wouldn't necessarily transfer to the hospital for AIIR unless tests are positive and/or patient worsens over night and needs higher level of care. Until we know more, I'd recommend a minimum of droplet and contact precautions, along with standard precautions (eye protection if anticipating splashes, etc.). I'd also ask the facility to not have any ill/symptomatic staff working at this point and to keep the ill residents away from other patients and common areas (stay in their room if possible).

Even if tests are not positive, given the extent of the outbreak, we can still be available to discuss and can pull in our DHQP LTCF colleagues.

Alice

Alice Y. Guh, MD, MPH
CDR, US Public Health Service
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
1600 Clifton Rd NE, MS H16-3, Atlanta, GA 30329-4027
Tel. 404-639-5077, Fax. 404-471-8033
Email. aguh@cdc.gov

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Friday, February 28, 2020 8:08 PM
To: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>;

Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zgg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPPH/DHDSP) <vey2@cdc.gov>

Subject: Seattle - unexplained severe respiratory illness skilled nursing facility

Meagan –

I'm including a few others from response, for SA – as questions go beyond IPC, and dovetail into PUI/epi and other component of response. While this is still not a confirmed situation want them to know.

I have thoughts on some of the items below, but they do verge out of MCCM TF so would defer to my epi TF colleagues. We can also be available to talk in am for sure.

Fyi all – preliminary flu, other routine pathogen testing NTD/negative, they are proceeding with SARS-CoV2 testing on at least two individuals. We got outreach re: IPC questions, but wanted you all to know.

From: Kay, Meagan <Meagan.Kay@kingcounty.gov>

Sent: Friday, February 28, 2020 7:32 PM

To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>

Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD) <xdc4@cdc.gov>; Chisty, Zeshan (CDC/DDID/NCEZID/DHQP) <pio5@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>

Subject: RE: Assessing risk

Alice,

We have a skilled nursing facility that has a severe respiratory disease outbreak. We have collected specimens on two of them and have a few questions should they turn up positive. Here's a brief summary:

Skilled nursing facility with over 40 ill patients out of 108 patients. 18 ill staff of 179 staff. 6 hospitalized patients and 1 hospitalized staff member. Seven of the patients have had a full workup. So far all testing has been negative on those with a full workup: flu negative, respiratory viral panel negative, bacterial cultures neg, legionella neg. 5 additional with pneumonia and 15 additional patients with SOB and lower respiratory symptoms. Another 15 with milder symptoms. So far no explanation for this outbreak despite substantial testing. We plan to do COVID-19 test on all the hospitalized patients.

- If all negative, do you recommend further testing of the other ill patients in the SNF? Given evolving epi, I would suggest yes but would defer to my PUI/epi colleagues
- If any positive, should we test all ill patients and staff there? If positive, again would think yes – but again, this should be through epi/PUI discussion
- The SNF can't do AIIR so that would mean hospitalizing all ill patients? This seems contingent on test positive status, right? Alice may have more thoughts on this
- SNF is circular in design –open concept, one floor, single patient rooms. They are implementing flu outbreak control measures currently. Other recommendations? Alice may have thoughts on this;

single room, closed door, masking source patients, appropriate precautions for personnel entering facility seem key.

- If positive, would someone have a chance to talk with us tomorrow? We will have results in the AM.

Yes

Thanks

Meagan

From: Stenzel, Timothy
Sent: Saturday, February 29, 2020 7:52 AM PST
To: Cowgill, Karen; Mark J Rieder; Helen Y Chu; Langley, Gayle E (CDC); Kuhnert-Tallman, Wendi L (CDC); Duchin, Jeff; Kay, Meagan
CC: Robin A Prentice; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Jay A. Shendure; Trevor Bedford; Istarita
Subject: RE: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Karen,

I did connect with Mark a little after an hour yesterday by phone.

Wanted to let you know of this PR and linked new guidance that just was released.

We are still working on your particular situation.

<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-issues-new-policy-help-expedite-availability-diagnostics>

Best,

Tim

Timothy T. Stenzel, MD, PhD

*Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality*

Center for Devices and Radiological Health

U.S. Food and Drug Administration

Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell

Administrative Assistant

OHT7: Office of In Vitro Diagnostics and Radiological Health

Office of Product Evaluation and Quality

CDRH | Food and Drug Administration

White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993

Ph: 301-796-7692

jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Cowgill, Karen <n-kcowgill@kingcounty.gov>

Sent: Friday, February 28, 2020 4:46 PM

To: Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L

(CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Importance: High

Hi Tim, et al. at CDC and Mark, et al. at SFS – Jeff Duchin (Chief Health Officer at Public Health Seattle-King County) asked me to follow up with you about the outcome of our discussion earlier today (9 PT/12 ET) about Seattle Flu Study testing for SARS-CoV-2.

At the end of the call, Tim said he would get back to Mark within the hour, but we haven't heard anything on our end.

Could someone please send a summary of where things stand and specifically

- what the current guidance is about SFS continued testing of samples for nCoV (retrospective and prospective)
- if testing continues, what is the flow of information to public health / re-contacting patients with results
- any other relevant info (e.g., was the lot of the kit SFS used to confirm their initial positive the same lot that CDC had QC'd?)

Thank you,

Karen Cowgill, PhD, MSc (*she/her*)
COVID-19 Response Epidemiologist
Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Affiliate Assistant Professor in Global Health, University of Washington
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-3087; Fax: (206) 296-4803
E-mail: n-kcowgill@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>

Sent: Thursday, February 27, 2020 10:57 PM

To: Helen Y Chu <helenchu@uw.edu>

Cc: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>

Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Here is the Zoom link for the call in tomorrow (Friday, 2/28 @ 9 am PT)
Mark Rieder is inviting you to a scheduled Zoom meeting.

Topic: CDC Call

Time: Feb 28, 2020 09:00 AM Pacific Time (US and Canada)

Join Zoom Meeting

<https://washington.zoom.us/j/265821853>

Meeting ID: 265 821 853

One tap mobile

+16699006833,,265821853# US (San Jose)

+16468769923,,265821853# US (New York)

Dial by your location

+1 669 900 6833 US (San Jose)

+1 646 876 9923 US (New York)

Meeting ID: 265 821 853

On Thu, Feb 27, 2020 at 10:50 PM Helen Y Chu <helenchu@uw.edu> wrote:

Let's all plan to be on a 9:00 am call tomorrow to discuss this. Robin, can you set up a zoom call and include whoever else should join from the SFS team.

Thank you.

Get [Outlook for iOS](#)

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Sent: Thursday, February 27, 2020 8:19 PM

To: Duchin, Jeff (CDC kingcounty.gov)

Cc: Helen Y Chu; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen

Subject: Re: SEATTLE Flu Study Lab Result

Thanks much Jeff for connecting us. Happy to make the time any time - 7:30 your time is fine but I will wait to see the calendar invite to confirm.

Thanks!

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Thursday, February 27, 2020 11:17:20 PM
To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Cc: Helen Y Chu <helenchu@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org)
<janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov)
<scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>
Subject: SEATTLE Flu Study Lab Result

Wendy,

Thanks for helping us navigate with FDA colleagues what we can say/do in response to a potential positive test result from the SFS research assay. Helen Chu and Jan Englund are the SFS researchers that can provide the details of the test method and other relevant information. I'm also copying Scott Lindquist, the WA State DOH communicable disease epidemiologist and Karen Cowgill who works on surveillance with us. It probably would be good to have a call early tomorrow Pacific time (7:30) but Helen and Jan should schedule the time with you.

Very much appreciate your help.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP)
Sent: Friday, February 28, 2020 6:31 PM PST
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI); Kay, Meagan; Duchin, Jeff
CC: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Patel, Anita (CDC/DDID/NCIRD/OD); Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP); Perz, Joseph (CDC/DDID/NCEZID/DHQP); Magill, Shelley (CDC/DDID/NCEZID/DHQP); Kabbani, Sarah (CDC/DDID/NCEZID/DHQP); CDC IMS 2019 NCOV Healthcare Infection Control
Subject: Re: Seattle - unexplained severe respiratory illness skilled nursing facility

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Meagan - I would also recommend to go ahead and use eye protection too in addition to droplet and contact precautions.

Alice

Get [Outlook for iOS](#)

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Friday, February 28, 2020 9:12 PM
To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP); Kay, Meagan K. (CDC kingcounty.gov); Duchin, Jeff (CDC kingcounty.gov)
Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Patel, Anita (CDC/DDID/NCIRD/OD); Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP); Perz, Joseph (CDC/DDID/NCEZID/DHQP); Magill, Shelley (CDC/DDID/NCEZID/DHQP); Kabbani, Sarah (CDC/DDID/NCEZID/DHQP); CDC IMS 2019 NCOV Healthcare Infection Control
Subject: RE: Seattle - unexplained severe respiratory illness skilled nursing facility

And one more update – just got off phone w/ Stephanie. We all concur with the need for testing for the first two bullets.

Best,
satish

From: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>
Sent: Friday, February 28, 2020 9:02 PM
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP) <vey2@cdc.gov>; Perz, Joseph (CDC/DDID/NCEZID/DHQP) <bzp4@cdc.gov>; Magill, Shelley (CDC/DDID/NCEZID/DHQP) <fxe9@cdc.gov>; Kabbani, Sarah (CDC/DDID/NCEZID/DHQP) <nfq8@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>
Subject: RE: Seattle - unexplained severe respiratory illness skilled nursing facility

Hi Meagan,

Yes, we'd be available to talk in the morning. I've copied a few others from the IPC team. I agree with proceeding with testing for SARS-CoV2 given a negative work up thus far (defer to Epi/PUI teams to weigh in). All patients should remain in single patient rooms. I wouldn't necessarily transfer to the hospital for AIIR unless tests are positive and/or patient worsens over night and needs higher level of care. Until we know more, I'd recommend a minimum of droplet and contact precautions, along with standard precautions (eye protection if anticipating splashes, etc.). I'd also ask the facility to not have any ill/symptomatic staff working at this point and to keep the ill residents away from other patients and common areas (stay in their room if possible).

Even if tests are not positive, given the extent of the outbreak, we can still be available to discuss and can pull in our DHQP LTCF colleagues.

Alice

Alice Y. Guh, MD, MPH
CDR, US Public Health Service
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
1600 Clifton Rd NE, MS H16-3, Atlanta, GA 30329-4027
Tel. 404-639-5077, Fax. 404-471-8033
Email. aguh@cdc.gov

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Friday, February 28, 2020 8:08 PM
To: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP) <vey2@cdc.gov>
Subject: Seattle - unexplained severe respiratory illness skilled nursing facility

Meagan –

I'm including a few others from response, for SA – as questions go beyond IPC, and dovetail into PUI/epi and other component of response. While this is still not a confirmed situation want them to know.

I have thoughts on some of the items below, but they do verge out of MCCM TF so would defer to my epi TF colleagues. We can also be available to talk in am for sure.

Fyi all – preliminary flu, other routine pathogen testing NTD/negative, they are proceeding with SARS-CoV2 testing on at least two individuals. We got outreach re: IPC questions, but wanted you all to know.

From: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Sent: Friday, February 28, 2020 7:32 PM

To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>
Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD) <xdc4@cdc.gov>; Chisty, Zeshan (CDC/DDID/NCEZID/DHQP) <pio5@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: RE: Assessing risk

Alice,

We have a skilled nursing facility that has a severe respiratory disease outbreak. We have collected specimens on two of them and have a few questions should they turn up positive. Here's a brief summary:

Skilled nursing facility with over 40 ill patients out of 108 patients. 18 ill staff of 179 staff. 6 hospitalized patients and 1 hospitalized staff member. Seven of the patients have had a full workup. So far all testing has been negative on those with a full workup: flu negative, respiratory viral panel negative, bacterial cultures neg, legionella neg. 5 additional with pneumonia and 15 additional patients with SOB and lower respiratory symptoms. Another 15 with milder symptoms. So far no explanation for this outbreak despite substantial testing. We plan to do COVID-19 test on all the hospitalized patients.

- If all negative, do you recommend further testing of the other ill patients in the SNF? Given evolving epi, I would suggest yes but would defer to my PUI/epi colleagues
 - If any positive, should we test all ill patients and staff there? If positive, again would think yes – but again, this should be through epi/PUI discussion
 - The SNF can't do AIIR so that would mean hospitalizing all ill patients? This seems contingent on test positive status, right? Alice may have more thoughts on this
 - SNF is circular in design –open concept, one floor, single patient rooms. They are implementing flu outbreak control measures currently. Other recommendations? Alice may have thoughts on this; single room, closed door, masking source patients, appropriate precautions for personnel entering facility seem key.
 - If positive, would someone have a chance to talk with us tomorrow? We will have results in the AM.
- Yes

Thanks
Meagan

From: Cowgill, Karen
Sent: Saturday, February 29, 2020 10:31 AM PST
To: Duchin, Jeff; Stenzel, Timothy; Robin A Prentice; Mark Rieder; Helen Y Chu; Langley, Gayle E (CDC); Kuhnert-Tallman, Wendi L (CDC); Kay, Meagan
CC: Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Jay A. Shendure; Trevor Bedford; Istarita
Subject: Re: SEATTLE Flu Study Lab Result

Yes I can join this call on behalf of PHSKC.

Karen

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 29, 2020 10:08:36 AM
To: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>; Robin A Prentice <robins4@uw.edu>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

Hello folks we are overwhelmed here in the public health department and not able to join this call. I'm hoping Karen can join for us. It would be really fantastic if FDA can find a way to allow the SFS study to continue to test a large number of samples to help us understand about community-based transmission especially in light of our current outbreak and other case with no travel history.

Jeffrey S. Duchin, MD

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>
Sent: Saturday, February 29, 2020 10:01:01 AM
To: Robin A Prentice <robins4@uw.edu>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Sounds good.

From: Robin A Prentice <robins4@uw.edu>
Date: February 29, 2020 at 12:44:15 PM EST
To: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>, Cowgill, Karen <n-kcowgill@kingcounty.gov>, Mark Rieder <mrieder@uw.edu>, Helen Y Chu <helenchu@uw.edu>, Langley, Gayle E (CDC) <fez7@cdc.gov>, Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>, Duchin, Jeff <Jeff.Duchin@kingcounty.gov>, Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>, Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>, Jay A. Shendure <shendure@uw.edu>, Trevor Bedford <trevor@bedford.io>, Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

Hello Tim,

Would it work for us to talk at 11am Pacific time, 2pm Eastern? I will send a zoom invite in a moment.

Robin

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>
Sent: Saturday, February 29, 2020 9:11 AM
To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

Hi,

Can one or more folks from the Seattle Flu Study lab give me a call on my cell 202-308-9464? Leave a VM with number to get back to you right away if it goes to VM.

Thanks!

Best,
Tim

Timothy T. Stenzel, MD, PhD

Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality

Center for Devices and Radiological Health
U.S. Food and Drug Administration

Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell

Administrative Assistant

OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality

CDRH | Food and Drug Administration
White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993
Ph: 301-796-7692
Jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>

Sent: Saturday, February 29, 2020 10:53 AM

To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Hi Karen,

I did connect with Mark a little after an hour yesterday by phone.

Wanted to let you know of this PR and linked new guidance that just was released.

We are still working on your particular situation.

<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-issues-new-policy-help-expedite-availability-diagnostics>

Best,

Tim

Timothy T. Stenzel, MD, PhD

Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality

Center for Devices and Radiological Health
U.S. Food and Drug Administration
Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell
Administrative Assistant

OHT7: Office of *In Vitro* Diagnostics and Radiological Health
Office of Product Evaluation and Quality

CDRH | Food and Drug Administration
White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993
Ph: 301-796-7692
jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Cowgill, Karen <n-kcowgill@kingcounty.gov>

Sent: Friday, February 28, 2020 4:46 PM

To: Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Importance: High

Hi Tim, et al. at CDC and Mark, et al. at SFS – Jeff Duchin (Chief Health Officer at Public Health Seattle-King County) asked me to follow up with you about the outcome of our discussion earlier today (9 PT/12 ET) about Seattle Flu Study testing for SARS-CoV-2.

At the end of the call, Tim said he would get back to Mark within the hour, but we haven't heard anything on our end.

Could someone please send a summary of where things stand and specifically

- what the current guidance is about SFS continued testing of samples for nCoV (retrospective and prospective)
- if testing continues, what is the flow of information to public health / re-contacting patients with results
- any other relevant info (e.g., was the lot of the kit SFS used to confirm their initial positive the same lot that CDC had QC'd?)

Thank you,

Karen Cowgill, PhD, MSc (*she/her*)
COVID-19 Response Epidemiologist
Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County

Affiliate Assistant Professor in Global Health, University of Washington
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-3087; Fax: (206) 296-4803
E-mail: n-kcowgill@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>
Sent: Thursday, February 27, 2020 10:57 PM
To: Helen Y Chu <helenchu@uw.edu>
Cc: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Robin A Prentice <robins4@uw.edu>; Janet Englund (<janet.englund@seattlechildrens.org> <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Here is the Zoom link for the call in tomorrow (Friday, 2/28 @ 9 am PT)
Mark Rieder is inviting you to a scheduled Zoom meeting.

Topic: CDC Call
Time: Feb 28, 2020 09:00 AM Pacific Time (US and Canada)

Join Zoom Meeting
<https://washington.zoom.us/j/265821853>

Meeting ID: 265 821 853

One tap mobile
+16699006833,,265821853# US (San Jose)
+16468769923,,265821853# US (New York)

Dial by your location
+1 669 900 6833 US (San Jose)
+1 646 876 9923 US (New York)
Meeting ID: 265 821 853

On Thu, Feb 27, 2020 at 10:50 PM Helen Y Chu <helenchu@uw.edu> wrote:

Let's all plan to be on a 9:00 am call tomorrow to discuss this. Robin, can you set up a zoom call and include whoever else should join from the SFS team.
Thank you.

Get [Outlook for iOS](#)

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Sent: Thursday, February 27, 2020 8:19 PM
To: Duchin, Jeff (CDC kingcounty.gov)
Cc: Helen Y Chu; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen
Subject: Re: SEATTLE Flu Study Lab Result

Thanks much Jeff for connecting us. Happy to make the time any time - 7:30 your time is fine but I will wait to see the calendar invite to confirm.

Thanks!

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Thursday, February 27, 2020 11:17:20 PM
To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Cc: Helen Y Chu <helenchu@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org)
<janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov)
<scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>
Subject: SEATTLE Flu Study Lab Result

Wendy,

Thanks for helping us navigate with FDA colleagues what we can say/do in response to a potential positive test result from the SFS research assay. Helen Chu and Jan Englund are the SFS researchers that can provide the details of the test method and other relevant information. I'm also copying Scott Lindquist, the WA State DOH communicable disease epidemiologist and Karen Cowgill who works on surveillance with us. It probably would be good to have a call early tomorrow Pacific time (7:30) but Helen and Jan should schedule the time with you.

Very much appreciate your help.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI)
Sent: Friday, February 28, 2020 7:05 PM PST
To: Kay, Meagan; Guh, Alice Y. (CDC/DDID/NCEZID/DHQP); Duchin, Jeff
CC: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Patel, Anita (CDC/DDID/NCIRD/OD); Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP); Perz, Joseph (CDC/DDID/NCEZID/DHQP); Magill, Shelley (CDC/DDID/NCEZID/DHQP); Kabbani, Sarah (CDC/DDID/NCEZID/DHQP); CDC IMS 2019 NCOV Healthcare Infection Control
Subject: Re: Seattle - unexplained severe respiratory illness skilled nursing facility

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Meagan - we have a 10 am IM synch meeting, so would 11:15 est work? Or is that too early?
Could push to noon if easier.

Get [Outlook for iOS](#)

From: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Sent: Friday, February 28, 2020 9:48:58 PM
To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>; Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP) <vey2@cdc.gov>; Perz, Joseph (CDC/DDID/NCEZID/DHQP) <bzp4@cdc.gov>; Magill, Shelley (CDC/DDID/NCEZID/DHQP) <fxe9@cdc.gov>; Kabbani, Sarah (CDC/DDID/NCEZID/DHQP) <nfq8@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>
Subject: Re: Seattle - unexplained severe respiratory illness skilled nursing facility

Alice, Satish, and CDC team. Thank you! I will send an invite for a call tomorrow if any positive results for sure, but even possibly if the first ones come back negative. Is there a good time for a call?

I will pass along the eye protection recommendation. We were told the other recommendations were in place but will confirm again.

Thanks

From: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>
Sent: Friday, February 28, 2020 6:31:12 PM
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP) <vey2@cdc.gov>; Perz, Joseph (CDC/DDID/NCEZID/DHQP) <bzp4@cdc.gov>; Magill, Shelley (CDC/DDID/NCEZID/DHQP) <fxe9@cdc.gov>; Kabbani, Sarah (CDC/DDID/NCEZID/DHQP) <nfq8@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>
Subject: Re: Seattle - unexplained severe respiratory illness skilled nursing facility

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Meagan - I would also recommend to go ahead and use eye protection too in addition to droplet and contact precautions.

Alice

Get [Outlook for iOS](#)

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>

Sent: Friday, February 28, 2020 9:12 PM

To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP); Kay, Meagan K. (CDC kingcounty.gov); Duchin, Jeff (CDC kingcounty.gov)

Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Patel, Anita (CDC/DDID/NCIRD/OD);

Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Jones, Christopher D.

(CDC/DDNID/NCCDPHP/DHDSP); Perz, Joseph (CDC/DDID/NCEZID/DHQP); Magill, Shelley

(CDC/DDID/NCEZID/DHQP); Kabbani, Sarah (CDC/DDID/NCEZID/DHQP); CDC IMS 2019 NCOV Healthcare Infection Control

Subject: RE: Seattle - unexplained severe respiratory illness skilled nursing facility

And one more update – just got off phone w/ Stephanie. We all concur with the need for testing for the first two bullets.

Best,
satish

From: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>

Sent: Friday, February 28, 2020 9:02 PM

To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>

Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP) <vey2@cdc.gov>; Perz, Joseph (CDC/DDID/NCEZID/DHQP) <bzp4@cdc.gov>; Magill, Shelley (CDC/DDID/NCEZID/DHQP) <fxe9@cdc.gov>; Kabbani, Sarah (CDC/DDID/NCEZID/DHQP) <nfq8@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>

Subject: RE: Seattle - unexplained severe respiratory illness skilled nursing facility

Hi Meagan,

Yes, we'd be available to talk in the morning. I've copied a few others from the IPC team. I agree with proceeding with testing for SARS-CoV2 given a negative work up thus far (defer to Epi/PUI teams to weigh in). All patients should remain in single patient rooms. I wouldn't necessarily transfer to the hospital for AIIR unless tests are positive and/or patient worsens over night and needs higher level of care. Until we know more, I'd recommend a minimum of droplet and contact precautions, along with standard precautions (eye protection if anticipating splashes, etc.). I'd also ask the facility to not have any ill/symptomatic staff working at this point and to keep the ill residents away from other patients and common areas (stay in their room if possible).

Even if tests are not positive, given the extent of the outbreak, we can still be available to discuss and can pull in our DHQP LTCF colleagues.

Alice

Alice Y. Guh, MD, MPH
CDR, US Public Health Service
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
1600 Clifton Rd NE, MS H16-3, Atlanta, GA 30329-4027
Tel. 404-639-5077, Fax. 404-471-8033
Email. aguh@cdc.gov

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Friday, February 28, 2020 8:08 PM
To: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP) <vey2@cdc.gov>
Subject: Seattle - unexplained severe respiratory illness skilled nursing facility

Meagan –

I'm including a few others from response, for SA – as questions go beyond IPC, and dovetail into PUI/epi and other component of response. While this is still not a confirmed situation want them to know.

I have thoughts on some of the items below, but they do verge out of MCCM TF so would defer to my epi TF colleagues. We can also be available to talk in am for sure.

Fyi all – preliminary flu, other routine pathogen testing NTD/negative, they are proceeding with SARS-CoV2 testing on at least two individuals. We got outreach re: IPC questions, but wanted you all to know.

From: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Sent: Friday, February 28, 2020 7:32 PM
To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>
Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD) <xdc4@cdc.gov>; Chisty, Zeshan (CDC/DDID/NCEZID/DHQP) <pio5@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: RE: Assessing risk

Alice,

We have a skilled nursing facility that has a severe respiratory disease outbreak. We have collected specimens on two of them and have a few questions should they turn up positive. Here's a brief summary:

Skilled nursing facility with over 40 ill patients out of 108 patients. 18 ill staff of 179 staff. 6 hospitalized patients and 1 hospitalized staff member. Seven of the patients have had a full workup. So far all testing has been negative on those with a full workup: flu negative, respiratory viral panel negative, bacterial cultures neg, legionella neg. 5 additional with pneumonia and 15 additional patients with SOB and lower respiratory symptoms. Another 15 with milder symptoms. So far no explanation for this outbreak despite substantial testing. We plan to do COVID-19 test on all the hospitalized patients.

- If all negative, do you recommend further testing of the other ill patients in the SNF? Given evolving epi, I would suggest yes but would defer to my PUI/epi colleagues
- If any positive, should we test all ill patients and staff there? If positive, again would think yes – but again, this should be through epi/PUI discussion
- The SNF can't do AIIR so that would mean hospitalizing all ill patients? This seems contingent on test positive status, right? Alice may have more thoughts on this
- SNF is circular in design –open concept, one floor, single patient rooms. They are implementing flu outbreak control measures currently. Other recommendations? Alice may have thoughts on this; single room, closed door, masking source patients, appropriate precautions for personnel entering facility seem key.
- If positive, would someone have a chance to talk with us tomorrow? We will have results in the AM.
Yes

Thanks
Meagan

From: Duchin, Jeff
Sent: Saturday, February 22, 2020 12:02 PM PST
To: Christopher Spitters; Biggs, Holly (CDC/DDID/NCIRD/DVD)
CC: Lindquist, Scott SL (CDC doh.wa.gov); Chu, Victoria (CDC/DDID/NCIRD/DVD); Hollianne Bruce; Carrie Parker
Subject: Re: Follow up serum from enhanced contact investigation

Holly, sorry I missed your message in my inbox. I don't have concerns about you contact these people. The protocol seems to indicate the contacts have already consented to this - what am I missing?

Please let us know when you start so we can share with our team just in case they get questions.

Thanks much

Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Christopher Spitters <christopher.spitters@comcast.net>

Sent: Saturday, February 22, 2020 11:46 AM

To: Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>

Subject: Re: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi, Holly.

OK with me...what (if anything) do you need from us beyond being aware of your plans?

Are you already following up with our case(s) or will you be planning to do as set forth in the draft protocol? Would you like me to give him a heads up? Note: one of the Travis AFB→Spokane transfers from the Diamond Princess is also a Snohomish County resident. We do not have a relationship with her and likely will not until she returns home.

Thanks,
Chris

From: "Biggs, Holly (CDC/DDID/NCIRD/DVD)" <xdc6@cdc.gov>
Date: Friday, February 21, 2020 at 9:56 AM
To: "Duchin, Jeff" <jeff.duchin@kingcounty.gov>, Christopher Spitters
<christopher.spitters@comcast.net>
Cc: Scott Lindquist <scott.lindquist@doh.wa.gov>, "Chu, Victoria (CDC/DDID/NCIRD/DVD)"
<pgz4@cdc.gov>
Subject: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,

I hope you are doing well. I wanted to follow up about the possibility of collecting serum from our group of close case contacts at ~4-6 week timepoint (which is coming up quickly!). The aim of this is to assess a possible immune response to SARS-CoV-2 exposure. We have ~38 people on the list that we would reach out to. This follow up was part of the initial protocol, but of course participation would be voluntary.

If ok with you, we are prepared to coordinate this from Atlanta, including reaching out to those who participated in the initial part of the enhanced contact tracing protocol to ask about participation/consent, and making arrangements for blood collection. We can arrange to send a couple EISOs from Atlanta who were involved in the initial phase to do this follow up blood collection and shipment. We can also share a brief consent form and description of the follow up process that we are currently drafting. Also attached the initial broad protocol.

Thank you for your consideration.

Holly

Holly Biggs, MD, MPH
Medical Epidemiologist
Respiratory Viruses Branch
Division of Viral Diseases
National Center for Immunization and Respiratory Diseases
U.S. Centers for Disease Control and Prevention
Office: 404-639-3989
Email: hbiggs@cdc.gov

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI)
Sent: Friday, February 28, 2020 6:12 PM PST
To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP); Kay, Meagan; Duchin, Jeff
CC: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Patel, Anita (CDC/DDID/NCIRD/OD); Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP); Perz, Joseph (CDC/DDID/NCEZID/DHQP); Magill, Shelley (CDC/DDID/NCEZID/DHQP); Kabbani, Sarah (CDC/DDID/NCEZID/DHQP); CDC IMS 2019 NCOV Healthcare Infection Control
Subject: RE: Seattle - unexplained severe respiratory illness skilled nursing facility

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

And one more update – just got off phone w/ Stephanie. We all concur with the need for testing for the first two bullets.

Best,
satish

From: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>
Sent: Friday, February 28, 2020 9:02 PM
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP) <vey2@cdc.gov>; Perz, Joseph (CDC/DDID/NCEZID/DHQP) <bzp4@cdc.gov>; Magill, Shelley (CDC/DDID/NCEZID/DHQP) <fxe9@cdc.gov>; Kabbani, Sarah (CDC/DDID/NCEZID/DHQP) <nfq8@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>
Subject: RE: Seattle - unexplained severe respiratory illness skilled nursing facility

Hi Meagan,

Yes, we'd be available to talk in the morning. I've copied a few others from the IPC team. I agree with proceeding with testing for SARS-CoV2 given a negative work up thus far (defer to Epi/PUI teams to weigh in). All patients should remain in single patient rooms. I wouldn't necessarily transfer to the hospital for AIIR unless tests are positive and/or patient worsens over night and needs higher level of care. Until we know more, I'd recommend a minimum of droplet and contact precautions, along with standard precautions (eye protection if anticipating splashes, etc.). I'd also ask the facility to not have any ill/symptomatic staff working at this point and to keep the ill residents away from other patients and common areas (stay in their room if possible).

Even if tests are not positive, given the extent of the outbreak, we can still be available to discuss and can pull in our DHQP LTCF colleagues.

Alice

Alice Y. Guh, MD, MPH
CDR, US Public Health Service
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
1600 Clifton Rd NE, MS H16-3, Atlanta, GA 30329-4027
Tel. 404-639-5077, Fax. 404-471-8033
Email. aguh@cdc.gov

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Friday, February 28, 2020 8:08 PM
To: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDHP/DHDSP) <vey2@cdc.gov>
Subject: Seattle - unexplained severe respiratory illness skilled nursing facility

Meagan –

I'm including a few others from response, for SA – as questions go beyond IPC, and dovetail into PUI/epi and other component of response. While this is still not a confirmed situation want them to know.

I have thoughts on some of the items below, but they do verge out of MCCM TF so would defer to my epi TF colleagues. We can also be available to talk in am for sure.

Fyi all – preliminary flu, other routine pathogen testing NTD/negative, they are proceeding with SARS-CoV2 testing on at least two individuals. We got outreach re: IPC questions, but wanted you all to know.

From: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Sent: Friday, February 28, 2020 7:32 PM
To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>
Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD) <xdc4@cdc.gov>; Chisty, Zeshan (CDC/DDID/NCEZID/DHQP) <pio5@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: RE: Assessing risk

Alice,

We have a skilled nursing facility that has a severe respiratory disease outbreak. We have collected specimens on two of them and have a few questions should they turn up positive. Here's a brief summary:

Skilled nursing facility with over 40 ill patients out of 108 patients. 18 ill staff of 179 staff. 6 hospitalized patients and 1 hospitalized staff member. Seven of the patients have had a full workup. So far all testing has been negative on those with a full workup: flu negative, respiratory viral panel negative,

bacterial cultures neg, legionella neg. 5 additional with pneumonia and 15 additional patients with SOB and lower respiratory symptoms. Another 15 with milder symptoms. So far no explanation for this outbreak despite substantial testing. We plan to do COVID-19 test on all the hospitalized patients.

- If all negative, do you recommend further testing of the other ill patients in the SNF? Given evolving epi, I would suggest yes but would defer to my PUI/epi colleagues
- If any positive, should we test all ill patients and staff there? If positive, again would think yes – but again, this should be through epi/PUI discussion
- The SNF can't do AIIR so that would mean hospitalizing all ill patients? This seems contingent on test positive status, right? Alice may have more thoughts on this
- SNF is circular in design –open concept, one floor, single patient rooms. They are implementing flu outbreak control measures currently. Other recommendations? Alice may have thoughts on this; single room, closed door, masking source patients, appropriate precautions for personnel entering facility seem key.
- If positive, would someone have a chance to talk with us tomorrow? We will have results in the AM.
Yes

Thanks
Meagan

From: Stenzel, Timothy
Sent: Saturday, February 29, 2020 9:11 AM PST
To: Cowgill, Karen; Mark J Rieder; Helen Y Chu; Langley, Gayle E (CDC); Kuhnert-Tallman, Wendi L (CDC); Duchin, Jeff; Kay, Meagan
CC: Robin A Prentice; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Jay A. Shendure; Trevor Bedford; Istarita
Subject: RE: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi,

Can one or more folks from the Seattle Flu Study lab give me a call on my cell 202-308-9464? Leave a VM with number to get back to you right away if it goes to VM.

Thanks!

Best,
Tim

Timothy T. Stenzel, MD, PhD

*Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality*

**Center for Devices and Radiological Health
U.S. Food and Drug Administration**

Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell

Administrative Assistant

**OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality**

CDRH | Food and Drug Administration

White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993

Ph: 301-796-7692

jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>

Sent: Saturday, February 29, 2020 10:53 AM

To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford

<trevor@bedford.io>; Istarita <Istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Hi Karen,

I did connect with Mark a little after an hour yesterday by phone.

Wanted to let you know of this PR and linked new guidance that just was released.

We are still working on your particular situation.

<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-issues-new-policy-help-expedite-availability-diagnostics>

Best,

Tim

Timothy T. Stenzel, MD, PhD

Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality

Center for Devices and Radiological Health

U.S. Food and Drug Administration

Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell

Administrative Assistant

OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality

CDRH | Food and Drug Administration

White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993

Ph: 301-796-7692

Jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Cowgill, Karen <n-kcowgill@kingcounty.gov>

Sent: Friday, February 28, 2020 4:46 PM

To: Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wkd1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Importance: High

Hi Tim, et al. at CDC and Mark, et al. at SFS – Jeff Duchin (Chief Health Officer at Public Health Seattle-King County) asked me to follow up with you about the outcome of our discussion earlier today (9 PT/12 ET) about Seattle Flu Study testing for SARS-CoV-2.

At the end of the call, Tim said he would get back to Mark within the hour, but we haven't heard anything on our end.

Could someone please send a summary of where things stand and specifically

- what the current guidance is about SFS continued testing of samples for nCoV (retrospective and prospective)
- if testing continues, what is the flow of information to public health / re-contacting patients with results
- any other relevant info (e.g., was the lot of the kit SFS used to confirm their initial positive the same lot that CDC had QC'd?)

Thank you,

Karen Cowgill, PhD, MSc (*she/her*)
COVID-19 Response Epidemiologist
Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Affiliate Assistant Professor in Global Health, University of Washington
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-3087; Fax: (206) 296-4803
E-mail: n-kcowgill@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>
Sent: Thursday, February 27, 2020 10:57 PM
To: Helen Y Chu <helenchu@uw.edu>
Cc: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Here is the Zoom link for the call in tomorrow (Friday, 2/28 @ 9 am PT)
Mark Rieder is inviting you to a scheduled Zoom meeting.

Topic: CDC Call
Time: Feb 28, 2020 09:00 AM Pacific Time (US and Canada)

Join Zoom Meeting

<https://washington.zoom.us/j/265821853>

Meeting ID: 265 821 853

One tap mobile

+16699006833,,265821853# US (San Jose)

+16468769923,,265821853# US (New York)

Dial by your location

+1 669 900 6833 US (San Jose)

+1 646 876 9923 US (New York)

Meeting ID: 265 821 853

On Thu, Feb 27, 2020 at 10:50 PM Helen Y Chu <helenchu@uw.edu> wrote:

Let's all plan to be on a 9:00 am call tomorrow to discuss this. Robin, can you set up a zoom call and include whoever else should join from the SFS team.

Thank you.

Get [Outlook for iOS](#)

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Sent: Thursday, February 27, 2020 8:19 PM

To: Duchin, Jeff (CDC kingcounty.gov)

Cc: Helen Y Chu; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen

Subject: Re: SEATTLE Flu Study Lab Result

Thanks much Jeff for connecting us. Happy to make the time any time - 7:30 your time is fine but I will wait to see the calendar invite to confirm.

Thanks!

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Thursday, February 27, 2020 11:17:20 PM

To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Cc: Helen Y Chu <helenchu@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org)
<janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov)
<scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>

Subject: SEATTLE Flu Study Lab Result

Wendy,

Thanks for helping us navigate with FDA colleagues what we can say/do in response to a potential positive test result from the SFS research assay. Helen Chu and Jan Englund are the SFS researchers that can provide the details of the test method and other relevant information. I'm also copying Scott Lindquist, the WA State DOH communicable disease epidemiologist and Karen Cowgill who works on surveillance with us. It probably would be good to have a call early tomorrow Pacific time (7:30) but Helen and Jan should schedule the time with you.

Very much appreciate your help.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP)
Sent: Friday, February 28, 2020 6:01 PM PST
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI); Kay, Meagan; Duchin, Jeff
CC: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Patel, Anita (CDC/DDID/NCIRD/OD); Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSF); Perz, Joseph (CDC/DDID/NCEZID/DHQP); Magill, Shelley (CDC/DDID/NCEZID/DHQP); Kabbani, Sarah (CDC/DDID/NCEZID/DHQP); CDC IMS 2019 NCOV Healthcare Infection Control
Subject: RE: Seattle - unexplained severe respiratory illness skilled nursing facility

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Meagan,

Yes, we'd be available to talk in the morning. I've copied a few others from the IPC team. I agree with proceeding with testing for SARS-CoV2 given a negative work up thus far (defer to Epi/PUI teams to weigh in). All patients should remain in single patient rooms. I wouldn't necessarily transfer to the hospital for AIIR unless tests are positive and/or patient worsens over night and needs higher level of care. Until we know more, I'd recommend a minimum of droplet and contact precautions, along with standard precautions (eye protection if anticipating splashes, etc.). I'd also ask the facility to not have any ill/symptomatic staff working at this point and to keep the ill residents away from other patients and common areas (stay in their room if possible).

Even if tests are not positive, given the extent of the outbreak, we can still be available to discuss and can pull in our DHQP LTCF colleagues.

Alice

Alice Y. Guh, MD, MPH
CDR, US Public Health Service
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
1600 Clifton Rd NE, MS H16-3, Atlanta, GA 30329-4027
Tel. 404-639-5077, Fax. 404-471-8033
Email. aguh@cdc.gov

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Friday, February 28, 2020 8:08 PM
To: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSF) <vey2@cdc.gov>
Subject: Seattle - unexplained severe respiratory illness skilled nursing facility

Meagan –

I'm including a few others from response, for SA – as questions go beyond IPC, and dovetail into PUI/epi and other component of response. While this is still not a confirmed situation want them to know.

I have thoughts on some of the items below, but they do verge out of MCCM TF so would defer to my epi TF colleagues. We can also be available to talk in am for sure.

Fyi all – preliminary flu, other routine pathogen testing NTD/negative, they are proceeding with SARS-CoV2 testing on at least two individuals. We got outreach re: IPC questions, but wanted you all to know.

From: Kay, Meagan <Meagan.Kay@kingcounty.gov>

Sent: Friday, February 28, 2020 7:32 PM

To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>

Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD) <xdc4@cdc.gov>; Chisty, Zeshan (CDC/DDID/NCEZID/DHQP) <pio5@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>

Subject: RE: Assessing risk

Alice,

We have a skilled nursing facility that has a severe respiratory disease outbreak. We have collected specimens on two of them and have a few questions should they turn up positive. Here's a brief summary:

Skilled nursing facility with over 40 ill patients out of 108 patients. 18 ill staff of 179 staff. 6 hospitalized patients and 1 hospitalized staff member. Seven of the patients have had a full workup. So far all testing has been negative on those with a full workup: flu negative, respiratory viral panel negative, bacterial cultures neg, legionella neg. 5 additional with pneumonia and 15 additional patients with SOB and lower respiratory symptoms. Another 15 with milder symptoms. So far no explanation for this outbreak despite substantial testing. We plan to do COVID-19 test on all the hospitalized patients.

- If all negative, do you recommend further testing of the other ill patients in the SNF? Given evolving epi, I would suggest yes but would defer to my PUI/epi colleagues
 - If any positive, should we test all ill patients and staff there? If positive, again would think yes – but again, this should be through epi/PUI discussion
 - The SNF can't do AIIR so that would mean hospitalizing all ill patients? This seems contingent on test positive status, right? Alice may have more thoughts on this
 - SNF is circular in design –open concept, one floor, single patient rooms. They are implementing flu outbreak control measures currently. Other recommendations? Alice may have thoughts on this; single room, closed door, masking source patients, appropriate precautions for personnel entering facility seem key.
 - If positive, would someone have a chance to talk with us tomorrow? We will have results in the AM.
- Yes

Thanks
Meagan

From: Robin A Prentice
Sent: Saturday, February 29, 2020 9:42 AM PST
To: Stenzel, Timothy; Cowgill, Karen; Mark Rieder; Helen Y Chu; Langley, Gayle E (CDC); Kuhnert-Tallman, Wendi L (CDC); Duchin, Jeff; Kay, Meagan
CC: Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Jay A. Shendure; Trevor Bedford; Istarita
Subject: RE: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello Tim,

Would it work for us to talk at 11am Pacific time, 2pm Eastern? I will send a zoom invite in a moment.

Robin

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>
Sent: Saturday, February 29, 2020 9:11 AM
To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

Hi,

Can one or more folks from the Seattle Flu Study lab give me a call on my cell 202-308-9464? Leave a VM with number to get back to you right away if it goes to VM.

Thanks!

Best,

Tim

Timothy T. Stenzel, MD, PhD

*Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality*

Center for Devices and Radiological Health

U.S. Food and Drug Administration

Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell

Administrative Assistant

**OHT7: Office of *In Vitro* Diagnostics and Radiological Health
Office of Product Evaluation and Quality**

CDRH | Food and Drug Administration
White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993
Ph: 301-796-7692
Jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>
Sent: Saturday, February 29, 2020 10:53 AM
To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wkd1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

Hi Karen,

I did connect with Mark a little after an hour yesterday by phone.

Wanted to let you know of this PR and linked new guidance that just was released.

We are still working on your particular situation.

<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-issues-new-policy-help-expedite-availability-diagnostics>

Best,
Tim

Timothy T. Stenzel, MD, PhD

*Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality*

**Center for Devices and Radiological Health
U.S. Food and Drug Administration**
Timothy.Stenzel@fda.hhs.gov
Jennifer Campbell
Administrative Assistant

**OHT7: Office of *In Vitro* Diagnostics and Radiological Health
Office of Product Evaluation and Quality**

CDRH | Food and Drug Administration
White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993
Ph: 301-796-7692
jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Cowgill, Karen <n-kcowgill@kingcounty.gov>
Sent: Friday, February 28, 2020 4:46 PM
To: Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result
Importance: High

Hi Tim, et al. at CDC and Mark, et al. at SFS – Jeff Duchin (Chief Health Officer at Public Health Seattle-King County) asked me to follow up with you about the outcome of our discussion earlier today (9 PT/12 ET) about Seattle Flu Study testing for SARS-CoV-2.

At the end of the call, Tim said he would get back to Mark within the hour, but we haven't heard anything on our end.

Could someone please send a summary of where things stand and specifically

- what the current guidance is about SFS continued testing of samples for nCoV (retrospective and prospective)
- if testing continues, what is the flow of information to public health / re-contacting patients with results
- any other relevant info (e.g., was the lot of the kit SFS used to confirm their initial positive the same lot that CDC had QC'd?)

Thank you,

Karen Cowgill, PhD, MSc (*she/her*)
COVID-19 Response Epidemiologist
Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Affiliate Assistant Professor in Global Health, University of Washington
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-3087; Fax: (206) 296-4803
E-mail: n-kcowgill@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>
Sent: Thursday, February 27, 2020 10:57 PM
To: Helen Y Chu <helenchu@uw.edu>
Cc: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Robin A Prentice <robins4@uw.edu>; Janet Englund <janet.englund@seattlechildrens.org> <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Here is the Zoom link for the call in tomorrow (Friday, 2/28 @ 9 am PT)
Mark Rieder is inviting you to a scheduled Zoom meeting.

Topic: CDC Call
Time: Feb 28, 2020 09:00 AM Pacific Time (US and Canada)

Join Zoom Meeting
<https://washington.zoom.us/j/265821853>

Meeting ID: 265 821 853

One tap mobile
+16699006833,,265821853# US (San Jose)
+16468769923,,265821853# US (New York)

Dial by your location
+1 669 900 6833 US (San Jose)
+1 646 876 9923 US (New York)
Meeting ID: 265 821 853

On Thu, Feb 27, 2020 at 10:50 PM Helen Y Chu <helenchu@uw.edu> wrote:

Let's all plan to be on a 9:00 am call tomorrow to discuss this. Robin, can you set up a zoom call and include whoever else should join from the SFS team.
Thank you.

Get [Outlook for iOS](#)

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Sent: Thursday, February 27, 2020 8:19 PM
To: Duchin, Jeff (CDC kingcounty.gov)
Cc: Helen Y Chu; Janet Englund <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC

doh.wa.gov); Cowgill, Karen

Subject: Re: SEATTLE Flu Study Lab Result

Thanks much Jeff for connecting us. Happy to make the time any time - 7:30 your time is fine but I will wait to see the calendar invite to confirm.

Thanks!

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Thursday, February 27, 2020 11:17:20 PM

To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Cc: Helen Y Chu <helenchu@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org)

<janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov)

<scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>

Subject: SEATTLE Flu Study Lab Result

Wendy,

Thanks for helping us navigate with FDA colleagues what we can say/do in response to a potential positive test result from the SFS research assay. Helen Chu and Jan Englund are the SFS researchers that can provide the details of the test method and other relevant information. I'm also copying Scott Lindquist, the WA State DOH communicable disease epidemiologist and Karen Cowgill who works on surveillance with us. It probably would be good to have a call early tomorrow Pacific time (7:30) but Helen and Jan should schedule the time with you.

Very much appreciate your help.

Jeff

Jeffrey S. Duchin, MD

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County

Professor in Medicine, Division of Infectious Diseases, University of Washington

Adjunct Professor, School of Public Health

401 5th Ave, Suite 1250, Seattle, WA 98104

Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803

E-mail: jeff.duchin@kingcounty.gov

From: Patel, Anita (CDC/DDID/NCIRD/OD)
Sent: Friday, February 28, 2020 6:20 PM PST
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI); Guh, Alice Y. (CDC/DDID/NCEZID/DHQP); Kay, Meagan; Duchin, Jeff
CC: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP); Perz, Joseph (CDC/DDID/NCEZID/DHQP); Magill, Shelley (CDC/DDID/NCEZID/DHQP); Kabbani, Sarah (CDC/DDID/NCEZID/DHQP); CDC IMS 2019 NCOV Healthcare Infection Control; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID); Williams, Ian (CDC/DDID/NCEZID/DFWED); Armstrong, Gregory (CDC/DDID/NCEZID/OD); Ethier, Kathleen (CDC/DDID/NCHHSTP/DASH)
Subject: Re: Seattle - unexplained severe respiratory illness skilled nursing facility

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks all

+ leadership and community interventions for visibility

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>

Sent: Friday, February 28, 2020 9:12 PM

To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP); Kay, Meagan K. (CDC kingcounty.gov); Duchin, Jeff (CDC kingcounty.gov)

Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Patel, Anita (CDC/DDID/NCIRD/OD);

Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Jones, Christopher D.

(CDC/DDNID/NCCDPHP/DHDSP); Perz, Joseph (CDC/DDID/NCEZID/DHQP); Magill, Shelley

(CDC/DDID/NCEZID/DHQP); Kabbani, Sarah (CDC/DDID/NCEZID/DHQP); CDC IMS 2019 NCOV Healthcare Infection Control

Subject: RE: Seattle - unexplained severe respiratory illness skilled nursing facility

And one more update – just got off phone w/ Stephanie. We all concur with the need for testing for the first two bullets.

Best,
satish

From: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>

Sent: Friday, February 28, 2020 9:02 PM

To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>

Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita

(CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM)

<zqg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP) <vey2@cdc.gov>; Perz, Joseph

(CDC/DDID/NCEZID/DHQP) <bzp4@cdc.gov>; Magill, Shelley (CDC/DDID/NCEZID/DHQP)

<fxe9@cdc.gov>; Kabbani, Sarah (CDC/DDID/NCEZID/DHQP) <nfq8@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>

Subject: RE: Seattle - unexplained severe respiratory illness skilled nursing facility

Hi Meagan,

Yes, we'd be available to talk in the morning. I've copied a few others from the IPC team. I agree with proceeding with testing for SARS-CoV2 given a negative work up thus far (defer to Epi/PUI teams to weigh in). All patients should remain in single patient rooms. I wouldn't necessarily transfer to the hospital for AIIR unless tests are positive and/or patient worsens over night and needs higher level of care. Until we know more, I'd recommend a minimum of droplet and contact precautions, along with standard precautions (eye protection if anticipating splashes, etc.). I'd also ask the facility to not have any ill/symptomatic staff working at this point and to keep the ill residents away from other patients and common areas (stay in their room if possible).

Even if tests are not positive, given the extent of the outbreak, we can still be available to discuss and can pull in our DHQP LTCF colleagues.

Alice

Alice Y. Guh, MD, MPH
CDR, US Public Health Service
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
1600 Clifton Rd NE, MS H16-3, Atlanta, GA 30329-4027
Tel. 404-639-5077, Fax. 404-471-8033
Email. aguh@cdc.gov

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Friday, February 28, 2020 8:08 PM
To: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP) <vey2@cdc.gov>
Subject: Seattle - unexplained severe respiratory illness skilled nursing facility

Meagan –

I'm including a few others from response, for SA – as questions go beyond IPC, and dovetail into PUI/epi and other component of response. While this is still not a confirmed situation want them to know.

I have thoughts on some of the items below, but they do verge out of MCCM TF so would defer to my epi TF colleagues. We can also be available to talk in am for sure.

Fyi all – preliminary flu, other routine pathogen testing NTD/negative, they are proceeding with SARS-CoV2 testing on at least two individuals. We got outreach re: IPC questions, but wanted you all to know.

From: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Sent: Friday, February 28, 2020 7:32 PM
To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>

Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD) <xdc4@cdc.gov>; Chisty, Zeshan (CDC/DDID/NCEZID/DHQP) <pio5@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>

Subject: RE: Assessing risk

Alice,

We have a skilled nursing facility that has a severe respiratory disease outbreak. We have collected specimens on two of them and have a few questions should they turn up positive. Here's a brief summary:

Skilled nursing facility with over 40 ill patients out of 108 patients. 18 ill staff of 179 staff. 6 hospitalized patients and 1 hospitalized staff member. Seven of the patients have had a full workup. So far all testing has been negative on those with a full workup: flu negative, respiratory viral panel negative, bacterial cultures neg, legionella neg. 5 additional with pneumonia and 15 additional patients with SOB and lower respiratory symptoms. Another 15 with milder symptoms. So far no explanation for this outbreak despite substantial testing. We plan to do COVID-19 test on all the hospitalized patients.

- If all negative, do you recommend further testing of the other ill patients in the SNF? Given evolving epi, I would suggest yes but would defer to my PUI/epi colleagues
- If any positive, should we test all ill patients and staff there? If positive, again would think yes – but again, this should be through epi/PUI discussion
- The SNF can't do AIIR so that would mean hospitalizing all ill patients? This seems contingent on test positive status, right? Alice may have more thoughts on this
- SNF is circular in design –open concept, one floor, single patient rooms. They are implementing flu outbreak control measures currently. Other recommendations? Alice may have thoughts on this; single room, closed door, masking source patients, appropriate precautions for personnel entering facility seem key.
- If positive, would someone have a chance to talk with us tomorrow? We will have results in the AM.

Yes

Thanks
Meagan

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI)
Sent: Friday, February 28, 2020 5:07 PM PST
To: Kay, Meagan; Duchin, Jeff
CC: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP); Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Patel, Anita (CDC/DDID/NCIRD/OD); Jones, Christopher D. (CDC/DDNID/NCCDPPH/DHDSP)
Subject: Seattle - unexplained severe respiratory illness skilled nursing facility

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Meagan –

I’m including a few others from response, for SA – as questions go beyond IPC, and dovetail into PUI/epi and other component of response. While this is still not a confirmed situation want them to know.

I have thoughts on some of the items below, but they do verge out of MCCM TF so would defer to my epi TF colleagues. We can also be available to talk in am for sure.

Fyi all – preliminary flu, other routine pathogen testing NTD/negative, they are proceeding with SARS-CoV2 testing on at least two individuals. We got outreach re: IPC questions, but wanted you all to know.

From: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Sent: Friday, February 28, 2020 7:32 PM
To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>
Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD) <xdc4@cdc.gov>; Chisty, Zeshan (CDC/DDID/NCEZID/DHQP) <pio5@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eoevent220@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: RE: Assessing risk

Alice,

We have a skilled nursing facility that has a severe respiratory disease outbreak. We have collected specimens on two of them and have a few questions should they turn up positive. Here’s a brief summary:

Skilled nursing facility with over 40 ill patients out of 108 patients. 18 ill staff of 179 staff. 6 hospitalized patients and 1 hospitalized staff member. Seven of the patients have had a full workup. So far all testing has been negative on those with a full workup: flu negative, respiratory viral panel negative, bacterial cultures neg, legionella neg. 5 additional with pneumonia and 15 additional patients with SOB and lower respiratory symptoms. Another 15 with milder symptoms. So far no explanation for this outbreak despite substantial testing. We plan to do COVID-19 test on all the hospitalized patients.

- If all negative, do you recommend further testing of the other ill patients in the SNF? Given evolving epi, I would suggest yes but would defer to my PUI/epi colleagues

- If any positive, should we test all ill patients and staff there? If positive, again would think yes – but again, this should be through epi/PUI discussion
 - The SNF can't do AIIR so that would mean hospitalizing all ill patients? This seems contingent on test positive status, right? Alice may have more thoughts on this
 - SNF is circular in design –open concept, one floor, single patient rooms. They are implementing flu outbreak control measures currently. Other recommendations? Alice may have thoughts on this; single room, closed door, masking source patients, appropriate precautions for personnel entering facility seem key.
 - If positive, would someone have a chance to talk with us tomorrow? We will have results in the AM.
- Yes

Thanks
Meagan

From: Park, Sarah Y., MD
Sent: Thursday, February 27, 2020 1:48 AM PST
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD); Arwady, Allison AA (CDC cityofchicago.org); Armstrong, Gregory (CDC/DDID/NCEZID/OD); Balter, Sharon (CDC ph.lacounty.gov); Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Brad Hutton; Bresee, Joseph (CDC/DDID/NCIRD/ID); Brian Hiatt; Christine Mahle; Christopher Shields; Conover, Craig (CDC illinois.gov); Debra Wadford; Duchin, Jeff; Desmond, Edward; Gail Cooksey; Ghinai, Isaac; Godfred Masinde; Green, Nicole (CDC ph.lacounty.gov); Hector Rivas; Jain, Seema (CDC cdph.ca.gov); Jessica Sell; Justin DeWitt; Kauerauf, Judy (CDC illinois.gov); Komatsu, Kenneth (CDC azdhs.gov); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Layden, Jennifer (CDC illinois.gov); Layton, Marci (CDC health.nyc.gov); Leslie Chapman; Lindquist, Scott SL (CDC doh.wa.gov); Marelle Fricchione; Kay, Meagan; Meredith Haddix; Molly Lamb; Cowgill, Karen; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov); Rose, Laura E. (CDC/DDPHSS/OLSS/OLS); Black, Stephanie SB (CDC cityofchicago.org); Thomas-Smith, Evonda; Safranek, Thomas <NE> (CDC nebraska.gov); Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Weiss, Don (CDC health.nyc.gov); Zahn, Matthew
Subject: RE: updated communications documents and project determination

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Gayle,

Thanks for these as they are helpful, especially the brief media statement document, as it will be good if CDC can add its voice to our to explain about why specimens already collected from patients must be deidentified. That is going to be the most difficult messaging point for the public to understand—it's been challenging enough for me to get leadership here to understand.

For Hawaii, we can have specimens ready for testing either here or at CDC by early next week—my understanding is that labs now only have to complete verification for the N1 and N2 controls to be able to have testing capacity, so our lab may be up by as soon as Monday. The two things holding us back is having the communications messages ready and a response plan for when we detect that first positive...or cluster of positives. We'd prefer to align with the other jurisdictions under CDC guidance. Do you or Greg (Joe) have an idea when that part (i.e., the template response document) might be finalized? From the media statement document, it's not clear to me if the stance will be an aggressive one (i.e., specific community mitigation measures) or a watchful one (i.e., general CM considerations).

Thanks.
Sarah

Sarah Y. Park, MD, FAAP
State Epidemiologist
Chief, Disease Outbreak Control Division
Hawaii Department of Health

An ounce of prevention is worth a pound of cure. - Benjamin Franklin

"Like" us on the [Disease Outbreak Control Division's Facebook Page](http://health.hawaii.gov/docd/)
<http://health.hawaii.gov/docd/>



Please consider the environment before printing this e-mail or attachments.

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Sent: Wednesday, February 26, 2020 9:49 AM

To: Arwady, Allison AA (CDC cityofchicago.org) <allison.arwady@cityofchicago.org>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Brad Hutton <brad.hutton@health.ny.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Brian Hiatt <brian.hiatt@doh.wa.gov>; Christine Mahle <cmahle@health.nyc.gov>; Christopher Shields <christopher.shields@cityofchicago.org>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Debra Wadford <debra.wadford@cdph.ca.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Desmond, Edward <edward.desmond@doh.hawaii.gov>; Gail Cooksey <Gail.Cooksey@cdph.ca.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Godfred Masinde <godfred.masinde@sfdph.org>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Komatsu, Kenneth (CDC azdhs.gov) <ken.komatsu@azdhs.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <mlayton@health.nyc.gov>; Leslie Chapman <Leslie.Chapman@Illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Marelle Fricchione <Marielle.Fricchione@cityofchicago.org>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb <Molly.Lamb@Illinois.gov>; n-kcowgill@kingcounty.gov; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>; Black, Stephanie SB (CDC cityofchicago.org) <stephanie.black@cityofchicago.org>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Safranek, Thomas <NE> (CDC nebraska.gov) <tom.safranek@nebraska.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>

Subject: [EXTERNAL] updated communications documents and project determination

Hello. Enclosed are updated communications documents that include talking points around the finding of positives from de-identified specimens. Also, I have enclosed the non-research determination document. I will be sending additional specimen-related guidance (labeling, shipping) later today.

Since the situation is fluid, **please again provide an update as to when you think you can start sending specimens** to CDC for testing. Also, please let me know if there is anything in particular that is holding you up. Thank you, Gayle

Gayle Langley, MD, MPH, FAAP
Centers for Disease Control and Prevention
Respiratory Viruses Branch
Lead, RSV Epi Team
1600 Clifton Road NE MS H24-5
Atlanta, GA 30333
Telephone: 404-639-8092
Email: fez7@cdc.gov

From: Cowgill, Karen
Sent: Friday, February 28, 2020 1:46 PM PST
To: Mark J Rieder; Helen Y Chu; Timothy.Stenzel@fda.hhs.gov; fez7@cdc.gov; Kuhnert-Tallman, Wendi (CDC/DDID/OD); Duchin, Jeff; Kay, Meagan
CC: Robin A Prentice; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Jay A. Shendure; Trevor Bedford; Istarita
Subject: RE: SEATTLE Flu Study Lab Result
Importance: High

Hi Tim, et al. at CDC and Mark, et al. at SFS – Jeff Duchin (Chief Health Officer at Public Health Seattle-King County) asked me to follow up with you about the outcome of our discussion earlier today (9 PT/12 ET) about Seattle Flu Study testing for SARS-CoV-2.

At the end of the call, Tim said he would get back to Mark within the hour, but we haven't heard anything on our end.

Could someone please send a summary of where things stand and specifically

- what the current guidance is about SFS continued testing of samples for nCoV (retrospective and prospective)
- if testing continues, what is the flow of information to public health / re-contacting patients with results
- any other relevant info (e.g., was the lot of the kit SFS used to confirm their initial positive the same lot that CDC had QC'd?)

Thank you,

Karen Cowgill, PhD, MSc (*she/her*)
COVID-19 Response Epidemiologist
Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Affiliate Assistant Professor in Global Health, University of Washington
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-3087; Fax: (206) 296-4803
E-mail: n-kcowgill@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>
Sent: Thursday, February 27, 2020 10:57 PM
To: Helen Y Chu <helenchu@uw.edu>
Cc: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Here is the Zoom link for the call in tomorrow (Friday, 2/28 @ 9 am PT)
Mark Rieder is inviting you to a scheduled Zoom meeting.

Topic: CDC Call

Time: Feb 28, 2020 09:00 AM Pacific Time (US and Canada)

Join Zoom Meeting

<https://washington.zoom.us/j/265821853>

Meeting ID: 265 821 853

One tap mobile

+16699006833,,265821853# US (San Jose)

+16468769923,,265821853# US (New York)

Dial by your location

+1 669 900 6833 US (San Jose)

+1 646 876 9923 US (New York)

Meeting ID: 265 821 853

On Thu, Feb 27, 2020 at 10:50 PM Helen Y Chu <helenchu@uw.edu> wrote:

Let's all plan to be on a 9:00 am call tomorrow to discuss this. Robin, can you set up a zoom call and include whoever else should join from the SFS team.

Thank you.

Get [Outlook for iOS](#)

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Sent: Thursday, February 27, 2020 8:19 PM

To: Duchin, Jeff (CDC kingcounty.gov)

Cc: Helen Y Chu; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen

Subject: Re: SEATTLE Flu Study Lab Result

Thanks much Jeff for connecting us. Happy to make the time any time - 7:30 your time is fine but I will wait to see the calendar invite to confirm.

Thanks!

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Thursday, February 27, 2020 11:17:20 PM
To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Cc: Helen Y Chu <helenchu@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org)
<janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov)
<scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>
Subject: SEATTLE Flu Study Lab Result

Wendy,

Thanks for helping us navigate with FDA colleagues what we can say/do in response to a potential positive test result from the SFS research assay. Helen Chu and Jan Englund are the SFS researchers that can provide the details of the test method and other relevant information. I'm also copying Scott Lindquist, the WA State DOH communicable disease epidemiologist and Karen Cowgill who works on surveillance with us. It probably would be good to have a call early tomorrow Pacific time (7:30) but Helen and Jan should schedule the time with you.

Very much appreciate your help.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Sent: Monday, February 24, 2020 7:02 PM PST
To: Duchin, Jeff
CC: Kay, Meagan; Cowgill, Karen
Subject: RE: updates on sentinel surveillance activities

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

The comms plans will have to account for the differences, yes

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 8:51 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Cc: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Cowgill, Karen <ncowgill@kingcounty.gov>
Subject: Fw: updates on sentinel surveillance activities

Thanks much, Joe, will try to review before I leave for ACIP. Please add Meagan Kay and Karen Cowgill to the distribution list - they are working on this on our end and will also review. I assume our funding request can include support for community partners. Meagan - maybe Linda can help work up a draft request. I anticipate the comms plan will address differences in identified vs deidentified test communities.

Will miss you...

Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Monday, February 24, 2020 5:42 PM
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Arwady, Allison AA (CDC cityofchicago.org) <allison.arwady@cityofchicago.org>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; Brian Hiatt <brian.hiatt@doh.wa.gov>; Christine Mahle <cmahle@health.nyc.gov>; Christopher Shields <christopher.shields@cityofchicago.org>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Debra Wadford <debra.wadford@cdph.ca.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Edward Desmond <edward.desmond@doh.hawaii.gov>; Gail Cooksey <Gail.Cooksey@cdph.ca.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Godfred Masinde

<godfred.masinde@sfdph.org>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <m Layton@health.nyc.gov>; Leslie Chapman <Leslie.Chapman@Illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Marelle Fricchione <Marielle.Fricchione@cityofchicago.org>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb <Molly.Lamb@Illinois.gov>; PGounder@ph.lacounty.gov <PGounder@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Sarah Park <sarah.park@doh.hawaii.gov>; Black, Stephanie SB (CDC cityofchicago.org) <stephanie.black@cityofchicago.org>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgg2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>
Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zgg7@cdc.gov>
Subject: RE: updates on sentinel surveillance activities

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

All,

Here is the revised version of the document re actions to take now and when a first case is identified in the community for your review. Has more info that represents upcoming CDC thoughts on Comm Mitigation and Health care mitigation. Can make into a table or figure to make more approachable but wanted to get agreeable content first. See what you think and if this is useful for your own planning

Re comms – have submitted edits on all comms materials tonight back to CDC Comms folks. Will let them incorporate that will share with you all tomorrow AM

I think that we have all agreed on a few principals –

- we all have a joint Comms plan, with local jurisdictions being in the lead and CDC supporting you all (that you would announce anything first)
- we have a shared understanding of what actions would be taken if positives are found – the attached doc is for that purpose – but we acknowledge that we will convene when positives occur and think through together as things will change
- CDC will support investigation of early cases as requested by you all.

Finally, I would ask that you all think through funding required for surveillance and response for this project to be ready if and when asked for a proposal by CDC

Finally (really) – Greg Armstrong will be joining the response in my place starting tomorrow. I will linger a bit to support this project but Gayle will continue as CDC POC, and Greg and Stephanie Bialek (EPI-Task Force Lead) will be more present in the discussions going forward. I will fade out for a while but back soon. If you all can include Greg on emails to me, that would be great

Thanks again
Joe

Joseph Bresee, MD
Deputy Incident Manager
CDC 2020 nCoV response

From: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Sent: Monday, February 24, 2020 3:49 PM PST
To: Cowgill, Karen; Duchin, Jeff
CC: Lindquist, Scott SL (CDC doh.wa.gov); Kay, Meagan; Armstrong, Gregory (CDC/DDID/NCEZID/OD); Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Subject: RE: 2/25 Call + Q re: communicating research results

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Actually, not sharing with Gayle! Gayle – can you send the call-in info for the call tomorrow?

From: Cowgill, Karen <n-kcowgill@kingcounty.gov>
Sent: Monday, February 24, 2020 6:30 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>
Subject: 2/25 Call + Q re: communicating research results

Hi Joe and Greg,

Can you please send the invitation for the call tomorrow? Jeff won't be available but Meagan and/or I will join.

Also, can you please provide clarification regarding if/how the SFS folks might communicate results of their research testing? It would take them at least 4-7 days to confirm any research results with sequencing data and then they would work with us, WA DOH, and you at CDC re: communicating more broadly.

Thanks,
Karen

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Monday, February 24, 2020 9:31 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>
Subject: RE: COVID-19 sentinel surveillance DRAFT protocol

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks. I thought that we had a call today but see it is set for tomorrow at 4. Btw – am ccing Greg Armstrong on this as he will be joining the response and will have oversight on this work.
Joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 10:50 AM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <ncowgill@kingcounty.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: RE: COVID-19 sentinel surveillance DRAFT protocol

Thanks, Joe. I do think it's a bit different and perhaps more challenging message with de-identified testing and limited follow-up. So far I've not been able to find a site willing to do identified but I'm hoping that will be possible, so having a positive and not being able to do more testing may be a problem. I've copied Scott because we'd need to know from WA DOH PHL what volume they could test for this purpose as well and when that is going to be available. As for SFS, they said they can't do identified testing but we're continuing to discuss to see if that can be modified via IRB-revision request. Do we have a call today? It's not in my calendar and I fly to Atlanta tomorrow, back FRI.

Sorry this is so complicated here.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Monday, February 24, 2020 3:13 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Layton, Marci (CDC health.nyc.gov) <mlayton@health.nyc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; PGounder <PGounder@ph.lacounty.gov>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Pathela, Preeti (CDC health.nyc.gov) <ppathela@health.nyc.gov>; Jessica Sell <jsell@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Hector Rivas <hrrivas@ph.lacounty.gov>; Zahn, Matthew <MZahn@ochca.com>; DeWitt, Justin <Justin.Dewitt@Illinois.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Lamb, Molly

<Molly.Lamb@Illinois.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>

Subject: RE: COVID-19 sentinel surveillance DRAFT protocol

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks, Jeff. Will get you the comms materials today to review and edit. I think that if we can agree that an early case identified would need a response (more surveillance to understand the scope of local circulation and case investigation to see if tied to a known case/exposure), we can also agree that limited testing capacity makes this challenging. It doesn't look like anyone will have enough testing capacity to open up testing in large cities to anyone who wants it, so was hoping that each site might identify a subset of sites or samples – based on flu surveillance perhaps - that can be tested, but which represents a larger subset than the initial 50/week and larger also in terms of area – but perhaps within expected number of test kits available – 200/week?

I was hoping that with SFS, you all might have a solution there.

Thanks for the comments and feedback. Talk later today
joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Sunday, February 23, 2020 10:29 PM

To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Layton, Marci (CDC health.nyc.gov) <m Layton@health.nyc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; PGounder@ph.lacounty.gov; Meredith Haddix <MHaddix@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Pathela, Preeti (CDC health.nyc.gov) <ppathela@health.nyc.gov>; Jessica Sell <jsell@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Zahn, Matthew <MZahn@ochca.com>; DeWitt, Justin <Justin.Dewitt@Illinois.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Lamb, Molly <Molly.Lamb@Illinois.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>

Subject: Re: COVID-19 sentinel surveillance DRAFT protocol

Thanks very much, Joe. I took a quick look and made a few comments. Unfortunately I'm the only one available to work on this here currently, although we were fortunate to be able to just have Karen Cowgill (who some of you may know from her CDC days) join us as surge part-time epi help for this project and I added her to the email recipients. The two main issues for us are the need for robust communication plan/messages for public and HCP in the event of a positive, with associated guidance/actions for public and HCP. In response to Gayle's question, we would need to review communication and guidance and vet to some degree locally before sending specimens. In addition, we will need to know more about how enhanced surveillance

post-positive will work since we don't have a pre-existing system in place and don't have resources to do anything complicated. The idea of only testing from some clinics may not be acceptable to our community after a positive is detected (especially with de-identified), I anticipate allowing all clinics to send specimens that meet some criteria would be more acceptable if capacity to test allows that. This is such a gnarly problem without adequate testing capacity.

Thanks you and Gayle for putting this together, I hope it works out that we can participate. I'll be in Atlanta this week at ACIP and even slower then usual to respond to email.

Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Sunday, February 23, 2020 3:45 PM
To: Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Layton, Marci (CDC health.nyc.gov) <m Layton@health.nyc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; PGounder@ph.lacounty.gov <PGounder@ph.lacounty.gov>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Pathela, Preeti (CDC health.nyc.gov) <ppathela@health.nyc.gov>; Jessica Sell <sell@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Zahn, Matthew <MZahn@ochca.com>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; DeWitt, Justin <Justin.Dewitt@Illinois.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Lamb, Molly <Molly.Lamb@Illinois.gov>
Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: RE: COVID-19 sentinel surveillance DRAFT protocol

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

All, We had a few tasks following the last call. Wanted to report out on mine. (Gayle will share the latest protocol and the deidentified testing text, and updates on her progress over the weekend).

-Comms planning – Working with Comms group re two deliverables to share with you all – Q&As re the surveillance collaboration’s goals and structure (to have before the 1st case is identified and messages to have ready once the 1st case is identified. Hope to share these **tomorrow** for your input and use to create your own materials.

-Document that outlines what happens once the 1st case is identified – this is based on the transition document I shared a few days ago. Was envisioning a more operational plan, that augments the more conceptual plan I shared. Have attached a first stab at this. Will add a table to make simpler, but please edit and comment on this one. It ends at the 1st detections, and needs another step- triggers for transitioning more fully to community and health care mitigation from early case containment and control management. But this will be next

-Funds – working on this still to get clarity re timing. Assume that funding for surveillance and response to states will come, at least initially, through ELC Coags, and assume that section E will be used. Will keep you updated re steps and timing.

Finally, feel free to send stored, de-identified samples when you are ready. We are happy to receive and eager to get started!

Thanks
Joe

Joseph Bresee, MD
Dep. Incident Manager
2020 CDC nCoV Response

From: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Sent: Monday, February 24, 2020 5:22 PM PST
To: Duchin, Jeff
CC: Lindquist, Scott SL (CDC doh.wa.gov); Karen Cowgill; Kay, Meagan
Subject: RE: Research Testing

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks. Checking with folks here who know these things better. Will get back with you qwuickly

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 7:37 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Karen Cowgill <kdc8@uw.edu>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: Fw: Research Testing

Joe - please see below. Confirming CDC OK with research testing by UW/SFS and seeking guidance on if/how results can be communicated.

Thanks - Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 4:35 PM
To: Mark J Rieder <mrieder@uw.edu>; Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>
Cc: Robin Prentice <robins4@uw.edu>; Jay Shendure <shendure@gmail.com>; Helen Y Chu <helenchu@uw.edu>; Lea Starita <lstarita@uw.edu>; Paul Nevin <paul.nevin@gatesventures.com>
Subject: Re: Research Testing

Thanks, Mark. As for cleared by CDC, Joe Bresee said he had no objections - I'm not sure if anything more formal is needed. We did not get confirmation from CDC/FDA yet as to whether SFS can report results to any agency or public - will resend that question. Scott - anything to add?

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>
Sent: Monday, February 24, 2020 4:25 PM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>
Cc: Robin Prentice <robins4@uw.edu>; Jay Shendure <shendure@gmail.com>; Helen Y Chu <helenchu@uw.edu>; Lea Starita <lstarita@uw.edu>; Paul Nevin <paul.nevin@gatesventures.com>
Subject: Research Testing

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Jeff and Scott -

We have had some fragmented email threads, so I want to be clear that we are planning on starting research testing of our SFS samples this week. I am confirming that Jeff has heard from CDC and we are clear to do our SARS-CoV2 testing and that Scott is also aligned.

As I mentioned, any research result will be confirmed with sequencing which would take up to 7 days. Communication of any aggregate research results more broadly would be in partnership with PHSKC, CDC, and WA DOH.

We are setting up a meeting to further discuss results communication this but I want to get your explicit confirmation in advance on testing.

Thanks
Mark

From: Cowgill, Karen
Sent: Monday, February 24, 2020 3:30 PM PST
To: Bresee, Joseph (CDC/DDID/NCIRD/ID); Duchin, Jeff
CC: Lindquist, Scott SL (CDC doh.wa.gov); Kay, Meagan; Armstrong, Gregory (CDC/DDID/NCEZID/OD)
Subject: 2/25 Call + Q re: communicating research results

Hi Joe and Greg,

Can you please send the invitation for the call tomorrow? Jeff won't be available but Meagan and/or I will join.

Also, can you please provide clarification regarding if/how the SFS folks might communicate results of their research testing? It would take them at least 4-7 days to confirm any research results with sequencing data and then they would work with us, WA DOH, and you at CDC re: communicating more broadly.

Thanks,
Karen

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Monday, February 24, 2020 9:31 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <nkcowgill@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>
Subject: RE: COVID-19 sentinel surveillance DRAFT protocol

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks. I thought that we had a call today but see it is set for tomorrow at 4. Btw – am ccing Greg Armstrong on this as he will be joining the response and will have oversight on this work.
Joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 10:50 AM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <nkcowgill@kingcounty.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: RE: COVID-19 sentinel surveillance DRAFT protocol

Thanks, Joe. I do think it's a bit different and perhaps more challenging message with de-identified testing and limited follow-up. So far I've not been able to find a site willing to do identified but I'm hoping that will be possible, so having a positive and not being able to do more testing may be a problem. I've copied Scott because we'd need to know from WA DOH PHL what volume they could test for this purpose as well and when that is going to be available. As for SFS, they said they can't do

identified testing but we're continuing to discuss to see if that can be modified via IRB-revision request. Do we have a call today? It's not in my calendar and I fly to Atlanta tomorrow, back FRI.

Sorry this is so complicated here.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Monday, February 24, 2020 3:13 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Layton, Marci (CDC health.nyc.gov) <mlayton@health.nyc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; PGounder@ph.lacounty.gov; Meredith Haddix <MHaddix@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Pathela, Preeti (CDC health.nyc.gov) <ppathela@health.nyc.gov>; Jessica Sell <jsell@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Zahn, Matthew <MZahn@ochca.com>; DeWitt, Justin <Justin.Dewitt@Illinois.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Lamb, Molly <Molly.Lamb@Illinois.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>
Subject: RE: COVID-19 sentinel surveillance DRAFT protocol

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks, Jeff. Will get you the comms materials today to review and edit. I think that if we can agree that an early case identified would need a response (more surveillance to understand the scope of local circulation and case investigation to see if tied to a known case/exposure), we can also agree that limited testing capacity makes this challenging. It doesn't look like anyone will have enough testing capacity to open up testing in large cities to anyone who wants it, so was hoping that each site might identify a subset of sites or samples – based on flu surveillance perhaps - that can be tested, but which represents a larger subset than the initial 50/week and larger also in terms of area – but perhaps within expected number of test kits available – 200/week?

I was hoping that with SFS, you all might have a solution there.

Thanks for the comments and feedback. Talk later today
joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Sunday, February 23, 2020 10:29 PM

To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Layton, Marci (CDC health.nyc.gov) <m Layton@health.nyc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; PGounder@ph.lacounty.gov; Meredith Haddix <MHaddix@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Pathela, Preeti (CDC health.nyc.gov) <ppathela@health.nyc.gov>; Jessica Sell <jsell@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Zahn, Matthew <MZahn@ochca.com>; DeWitt, Justin <Justin.Dewitt@Illinois.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Lamb, Molly <Molly.Lamb@Illinois.gov>; Cowgill, Karen <ncowgill@kingcounty.gov>

Subject: Re: COVID-19 sentinel surveillance DRAFT protocol

Thanks very much, Joe. I took a quick look and made a few comments. Unfortunately I'm the only one available to work on this here currently, although we were fortunate to be able to just have Karen Cowgill (who some of you may know from her CDC days) join us as surge part-time epi help for this project and I added her to the email recipients. The two main issues for us are the need for robust communication plan/messages for public and HCP in the event of a positive, with associated guidance/actions for public and HCP. In response to Gayle's question, we would need to review communication and guidance and vet to some degree locally before sending specimens. In addition, we will need to know more about how enhanced surveillance post-positive will work since we don't have a pre-existing system in place and don't have resources to do anything complicated. The idea of only testing from some clinics may not be acceptable to our community after a positive is detected (especially with de-identified), I anticipate allowing all clinics to send specimens that meet some criteria would be more acceptable if capacity to test allows that. This is such a gnarly problem without adequate testing capacity.

Thanks you and Gayle for putting this together, I hope it works out that we can participate. I'll be in Atlanta this week at ACIP and even slower then usual to respond to email.

Jeff

Jeffrey S. Duchin, MD (he/him)

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>

Sent: Sunday, February 23, 2020 3:45 PM

To: Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Layton, Marci (CDC health.nyc.gov) <mLAYTON@health.nyc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; PGounder@ph.lacounty.gov <PGounder@ph.lacounty.gov>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Pathela, Preeti (CDC health.nyc.gov) <ppathela@health.nyc.gov>; Jessica Sell <jsell@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Zahn, Matthew <MZahn@ochca.com>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; DeWitt, Justin <Justin.Dewitt@Illinois.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Lamb, Molly <Molly.Lamb@Illinois.gov>

Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>

Subject: RE: COVID-19 sentinel surveillance DRAFT protocol

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

All, We had a few tasks following the last call. Wanted to report out on mine. (Gayle will share the latest protocol and the deidentified testing text, and updates on her progress over the weekend).

-Comms planning – Working with Comms group re two deliverables to share with you all – Q&As re the surveillance collaboration’s goals and structure (to have before the 1st case is identified and messages to have ready once the 1st case is identified. Hope to share these **tomorrow** for your input and use to create your own materials.

-Document that outlines what happens once the 1st case is identified – this is based on the transition document I shared a few days ago. Was envisioning a more operational plan, that augments the more conceptual plan I shared. Have attached a first stab at this. Will add a table to make simpler, but please edit and comment on this one. It ends at the 1st detections, and needs another step- triggers for transitioning more fully to community and health care mitigation from early case containment and control management. But this will be next

-Funds – working on this still to get clarity re timing. Assume that funding for surveillance and response to states will come, at least initially, through ELC Coags, and assume that section E will be used. Will keep you updated re steps and timing.

Finally, feel free to send stored, de-identified samples when you are ready. We are happy to receive and eager to get started!

Thanks
Joe

Joseph Bresee, MD
Dep. Incident Manager
2020 CDC nCoV Response

From: Stenzel, Timothy
Sent: Saturday, February 29, 2020 10:01 AM PST
To: Robin A Prentice; Cowgill, Karen; Mark Rieder; Helen Y Chu; Langley, Gayle E (CDC); Kuhnert-Tallman, Wendi L (CDC); Duchin, Jeff; Kay, Meagan
CC: Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Jay A. Shendure; Trevor Bedford; Istarita
Subject: RE: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Sounds good.

From: Robin A Prentice <robins4@uw.edu>
Date: February 29, 2020 at 12:44:15 PM EST
To: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>, Cowgill, Karen <n-kcowgill@kingcounty.gov>, Mark Rieder <mrieder@uw.edu>, Helen Y Chu <helenchu@uw.edu>, Langley, Gayle E (CDC) <fez7@cdc.gov>, Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>, Duchin, Jeff <Jeff.Duchin@kingcounty.gov>, Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>, Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>, Jay A. Shendure <shendure@uw.edu>, Trevor Bedford <trevor@bedford.io>, Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

Hello Tim,

Would it work for us to talk at 11am Pacific time, 2pm Eastern? I will send a zoom invite in a moment.

Robin

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>
Sent: Saturday, February 29, 2020 9:11 AM
To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

Hi,

Can one or more folks from the Seattle Flu Study lab give me a call on my cell 202-308-9464? Leave a VM with number to get back to you right away if it goes to VM.

Thanks!

Best,

Tim

Timothy T. Stenzel, MD, PhD

*Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality*

**Center for Devices and Radiological Health
U.S. Food and Drug Administration**

Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell

Administrative Assistant

**OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality**

CDRH | Food and Drug Administration

White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993

Ph: 301-796-7692

jennifer.campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>

Sent: Saturday, February 29, 2020 10:53 AM

To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Hi Karen,

I did connect with Mark a little after an hour yesterday by phone.

Wanted to let you know of this PR and linked new guidance that just was released.

We are still working on your particular situation.

<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-issues-new-policy-help-expedite-availability-diagnostics>

Best,
Tim

Timothy T. Stenzel, MD, PhD

Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality

Center for Devices and Radiological Health
U.S. Food and Drug Administration

Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell

Administrative Assistant

OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality

CDRH | Food and Drug Administration

White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993

Ph: 301-796-7692

Jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Cowgill, Karen <n-kcowgill@kingcounty.gov>

Sent: Friday, February 28, 2020 4:46 PM

To: Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Importance: High

Hi Tim, et al. at CDC and Mark, et al. at SFS – Jeff Duchin (Chief Health Officer at Public Health Seattle-King County) asked me to follow up with you about the outcome of our discussion earlier today (9 PT/12 ET) about Seattle Flu Study testing for SARS-CoV-2.

At the end of the call, Tim said he would get back to Mark within the hour, but we haven't heard anything on our end.

Could someone please send a summary of where things stand and specifically

- what the current guidance is about SFS continued testing of samples for nCoV (retrospective and prospective)
- if testing continues, what is the flow of information to public health / re-contacting patients with results
- any other relevant info (e.g., was the lot of the kit SFS used to confirm their initial positive the same lot that CDC had QC'd?)

Thank you,

Karen Cowgill, PhD, MSc (*she/her*)
COVID-19 Response Epidemiologist
Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Affiliate Assistant Professor in Global Health, University of Washington
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-3087; Fax: (206) 296-4803
E-mail: n-kcowgill@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>
Sent: Thursday, February 27, 2020 10:57 PM
To: Helen Y Chu <helenchu@uw.edu>
Cc: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Robin A Prentice <robins4@uw.edu>; Janet Englund <janet.englund@seattlechildrens.org> <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Here is the Zoom link for the call in tomorrow (Friday, 2/28 @ 9 am PT)
Mark Rieder is inviting you to a scheduled Zoom meeting.

Topic: CDC Call
Time: Feb 28, 2020 09:00 AM Pacific Time (US and Canada)

Join Zoom Meeting
<https://washington.zoom.us/j/265821853>

Meeting ID: 265 821 853

One tap mobile
+16699006833,,265821853# US (San Jose)
+16468769923,,265821853# US (New York)

Dial by your location
+1 669 900 6833 US (San Jose)
+1 646 876 9923 US (New York)
Meeting ID: 265 821 853

On Thu, Feb 27, 2020 at 10:50 PM Helen Y Chu <helenchu@uw.edu> wrote:

Let's all plan to be on a 9:00 am call tomorrow to discuss this. Robin, can you set up a zoom call and include whoever else should join from the SFS team.

Thank you.

Get [Outlook for iOS](#)

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Sent: Thursday, February 27, 2020 8:19 PM

To: Duchin, Jeff (CDC kingcounty.gov)

Cc: Helen Y Chu; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen

Subject: Re: SEATTLE Flu Study Lab Result

Thanks much Jeff for connecting us. Happy to make the time any time - 7:30 your time is fine but I will wait to see the calendar invite to confirm.

Thanks!

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Thursday, February 27, 2020 11:17:20 PM

To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Cc: Helen Y Chu <helenchu@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org)

<janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov)

<scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>

Subject: SEATTLE Flu Study Lab Result

Wendy,

Thanks for helping us navigate with FDA colleagues what we can say/do in response to a potential positive test result from the SFS research assay. Helen Chu and Jan Englund are the SFS researchers that can provide the details of the test method and other relevant information. I'm also copying Scott Lindquist, the WA State DOH communicable disease epidemiologist and Karen Cowgill who works on surveillance with us. It probably would be good to have a call early tomorrow Pacific time (7:30) but Helen and Jan should schedule the time with you.

Very much appreciate your help.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington

Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Sent: Monday, February 24, 2020 3:48 PM PST
To: Cowgill, Karen; Duchin, Jeff
CC: Lindquist, Scott SL (CDC doh.wa.gov); Kay, Meagan; Armstrong, Gregory (CDC/DDID/NCEZID/OD)
Subject: RE: 2/25 Call + Q re: communicating research results

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Gayle,
Can you send? The meeting isn't showing up on my calendar .
Joe

From: Cowgill, Karen <n-kcowgill@kingcounty.gov>
Sent: Monday, February 24, 2020 6:30 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>
Subject: 2/25 Call + Q re: communicating research results

Hi Joe and Greg,

Can you please send the invitation for the call tomorrow? Jeff won't be available but Meagan and/or I will join.

Also, can you please provide clarification regarding if/how the SFS folks might communicate results of their research testing? It would take them at least 4-7 days to confirm any research results with sequencing data and then they would work with us, WA DOH, and you at CDC re: communicating more broadly.

Thanks,
Karen

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Monday, February 24, 2020 9:31 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>
Subject: RE: COVID-19 sentinel surveillance DRAFT protocol

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks. I thought that we had a call today but see it is set for tomorrow at 4. Btw – am ccing Greg Armstrong on this as he will be joining the response and will have oversight on this work.
Joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 10:50 AM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <kcowgill@kingcounty.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: RE: COVID-19 sentinel surveillance DRAFT protocol

Thanks, Joe. I do think it's a bit different and perhaps more challenging message with de-identified testing and limited follow-up. So far I've not been able to find a site willing to do identified but I'm hoping that will be possible, so having a positive and not being able to do more testing may be a problem. I've copied Scott because we'd need to know from WA DOH PHL what volume they could test for this purpose as well and when that is going to be available. As for SFS, they said they can't do identified testing but we're continuing to discuss to see if that can be modified via IRB-revision request. Do we have a call today? It's not in my calendar and I fly to Atlanta tomorrow, back FRI.

Sorry this is so complicated here.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Monday, February 24, 2020 3:13 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Layton, Marci (CDC health.nyc.gov) <mLAYTON@health.nyc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; PGounder@ph.lacounty.gov; Meredith Haddix <MHaddix@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Pathela, Preeti (CDC health.nyc.gov) <ppathela@health.nyc.gov>; Jessica Sell <jsell@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>;

Hector Rivas <hrivas@ph.lacounty.gov>; Zahn, Matthew <MZahn@ochca.com>; DeWitt, Justin <Justin.Dewitt@Illinois.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Lamb, Molly <Molly.Lamb@Illinois.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>
Subject: RE: COVID-19 sentinel surveillance DRAFT protocol

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks, Jeff. Will get you the comms materials today to review and edit. I think that if we can agree that an early case identified would need a response (more surveillance to understand the scope of local circulation and case investigation to see if tied to a known case/exposure), we can also agree that limited testing capacity makes this challenging. It doesn't look like anyone will have enough testing capacity to open up testing in large cities to anyone who wants it, so was hoping that each site might identify a subset of sites or samples – based on flu surveillance perhaps - that can be tested, but which represents a larger subset than the initial 50/week and larger also in terms of area – but perhaps within expected number of test kits available – 200/week?

I was hoping that with SFS, you all might have a solution there.

Thanks for the comments and feedback. Talk later today
joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Sunday, February 23, 2020 10:29 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Layton, Marci (CDC health.nyc.gov) <mlayton@health.nyc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; PGounder@ph.lacounty.gov; Meredith Haddix <MHaddix@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Pathela, Preeti (CDC health.nyc.gov) <ppathela@health.nyc.gov>; Jessica Sell <jsell@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Zahn, Matthew <MZahn@ochca.com>; DeWitt, Justin <Justin.Dewitt@Illinois.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Lamb, Molly <Molly.Lamb@Illinois.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>
Subject: Re: COVID-19 sentinel surveillance DRAFT protocol

Thanks very much, Joe. I took a quick look and made a few comments. Unfortunately I'm the only one available to work on this here currently, although we were fortunate to be able to just have Karen Cowgill (who some of you may know from her CDC days) join us as surge part-time epi help for this project and I added her to the email recipients. The two main issues for us are the need for robust communication plan/messages for public and HCP in the event of a positive, with associated guidance/actions for public and HCP. In response to Gayle's question, we would need to review communication and guidance and vet to some degree locally before

sending specimens. In addition, we will need to know more about how enhanced surveillance post-positive will work since we don't have a pre-existing system in place and don't have resources to do anything complicated. The idea of only testing from some clinics may not be acceptable to our community after a positive is detected (especially with de-identified), I anticipate allowing all clinics to send specimens that meet some criteria would be more acceptable if capacity to test allows that. This is such a gnarly problem without adequate testing capacity.

Thanks you and Gayle for putting this together, I hope it works out that we can participate. I'll be in Atlanta this week at ACIP and even slower then usual to respond to email.

Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Sunday, February 23, 2020 3:45 PM
To: Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Layton, Marci (CDC health.nyc.gov) <mLAYTON@health.nyc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; PGounder@ph.lacounty.gov <PGounder@ph.lacounty.gov>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Pathela, Preeti (CDC health.nyc.gov) <ppathela@health.nyc.gov>; Jessica Sell <jsell@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Zahn, Matthew <MZahn@ochca.com>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; DeWitt, Justin <Justin.Dewitt@Illinois.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Lamb, Molly <Molly.Lamb@Illinois.gov>
Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: RE: COVID-19 sentinel surveillance DRAFT protocol

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

All, We had a few tasks following the last call. Wanted to report out on mine. (Gayle will share the latest protocol and the deidentified testing text, and updates on her progress over the weekend).

- Comms planning – Working with Comms group re two deliverables to share with you all – Q&As re the surveillance collaboration’s goals and structure (to have before the 1st case is identified and messages to have ready once the 1st case is identified. Hope to share these **tomorrow** for your input and use to create your own materials.

- Document that outlines what happens once the 1st case is identified – this is based on the transition document I shared a few days ago. Was envisioning a more operational plan, that augments the more conceptual plan I shared. Have attached a first stab at this. Will add a table to make simpler, but please edit and comment on this one. It ends at the 1st detections, and needs another step- triggers for transitioning more fully to community and health care mitigation from early case containment and control management. But this will be next

- Funds – working on this still to get clarity re timing. Assume that funding for surveillance and response to states will come, at least initially, through ELC Coags, and assume that section E will be used. Will keep you updated re steps and timing.

Finally, feel free to send stored, de-identified samples when you are ready. We are happy to receive and eager to get started!

Thanks
Joe

Joseph Bresee, MD
Dep. Incident Manager
2020 CDC nCoV Response

From: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Sent: Monday, February 24, 2020 7:01 PM PST
To: Duchin, Jeff
CC: Kay, Meagan; Cowgill, Karen; Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Subject: RE: updates on sentinel surveillance activities

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks and will add Karen and Meagan. Cc'ing Gayle to make sure that she has them on her notes as well. Will see you at ACIP perhaps, and will certainly be back in the fold in the outbreak before too long. Thanks for the hard work on the front lines!
joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 8:51 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Cc: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>
Subject: Fw: updates on sentinel surveillance activities

Thanks much, Joe, will try to review before I leave for ACIP. Please add Meagan Kay and Karen Cowgill to the distribution list - they are working on this on our end and will also review. I assume our funding request can include support for community partners. Meagan - maybe Linda can help work up a draft request. I anticipate the comms plan will address differences in identified vs deidentified test communities.

Will miss you...

Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Monday, February 24, 2020 5:42 PM
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Arwady, Allison AA (CDC cityofchicago.org) <allison.arwady@cityofchicago.org>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; Brian Hiatt <brian.hiatt@doh.wa.gov>; Christine Mahle <cmahle@health.nyc.gov>; Christopher Shields <christopher.shields@cityofchicago.org>; Conover, Craig

(CDC illinois.gov) <Craig.Conover@Illinois.gov>; Debra Wadford <debra.wadford@cdph.ca.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Edward Desmond <edward.desmond@doh.hawaii.gov>; Gail Cooksey <Gail.Cooksey@cdph.ca.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Godfred Masinde <godfred.masinde@sfdph.org>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <mlayton@health.nyc.gov>; Leslie Chapman <Leslie.Chapman@Illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Marelle Fricchione <Marielle.Fricchione@cityofchicago.org>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb <Molly.Lamb@Illinois.gov>; PGounder@ph.lacounty.gov <PGounder@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Sarah Park <sarah.park@doh.hawaii.gov>; Black, Stephanie SB (CDC cityofchicago.org) <stephanie.black@cityofchicago.org>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Vagi, Sara J. (CDC/DDPHSS/CPR/DEO) <hq2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>
Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSS/CGH/DPDM) <zqg7@cdc.gov>
Subject: RE: updates on sentinel surveillance activities

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

All,

Here is the revised version of the document re actions to take now and when a first case is identified in the community for your review. Has more info that represents upcoming CDC thoughts on Comm Mitigation and Health care mitigation. Can make into a table or figure to make more approachable but wanted to get agreeable content first. See what you think and if this is useful for your own planning

Re comms – have submitted edits on all comms materials tonight back to CDC Comms folks. Will let them incorporate that will share with you all tomorrow AM

I think that we have all agreed on a few principals –

- we all have a joint Comms plan, with local jurisdictions being in the lead and CDC supporting you all (that you would announce anything first)
- we have a shared understanding of what actions would be taken if positives are found – the attached doc is for that purpose – but we acknowledge that we will convene when positives occur and think through together as things will change
- CDC will support investigation of early cases as requested by you all.

Finally, I would ask that you all think through funding required for surveillance and response for this project to be ready if and when asked for a proposal by CDC

Finally (really) – Greg Armstrong will be joining the response in my place starting tomorrow. I will linger a bit to support this project but Gayle will continue as CDC POC, and Greg and Stephanie Bialek (EPI-Task

Force Lead) will be more present in the discussions going forward. I will fade out for a while but back soon. If you all can include Greg on emails to me, that would be great

Thanks again
Joe

Joseph Bresee, MD
Deputy Incident Manager
CDC 2020 nCoV response

From: Baker, Michael (OS/IEA)
Sent: Saturday, February 29, 2020 3:55 PM PST
To: Baker, Michael (OS/IEA)
Subject: [IMPORTANT UPDATE] FDA Issues New Policy to Help Expedite Availability of Diagnostics

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Dear Partner –

Today, as part of the U.S. Food and Drug Administration’s ongoing and aggressive commitment to address the coronavirus outbreak, the agency [issued a new policy](#) for certain laboratories seeking to develop diagnostic tests for coronavirus in order to achieve more rapid testing capacity in the U.S.

The new policy is for certain laboratories that develop and begin to use validated COVID-19 diagnostics before the FDA has completed review of their [Emergency Use Authorization](#) (EUA) requests. The immediately in effect guidance issued today describes the circumstances where the FDA does not intend to object to the use of these tests for clinical testing while the laboratories are pursuing an EUA with the FDA. Importantly, this policy only applies to laboratories that are certified to perform high-complexity testing consistent with requirements under [Clinical Laboratory Improvement Amendments](#).

The FDA guidance provides recommendations for test developers, including information regarding test validation, FDA notification and interim confirmatory clinical testing. Following the completion of their test validation, laboratories should communicate with the FDA, via email, in order to notify the agency that the test has been validated. Laboratories should submit a completed EUA request within 15 business days of notification.

The link to the full press release is [here](#).

Related Information

- [Novel Coronavirus](#)
- [Policy for Diagnostics Testing in Laboratories Certified to Perform High Complexity Testing under CLIA prior to Emergency Use Authorization for Coronavirus Disease-2019 during the Public Health Emergency - Immediately in Effect Guidance for Clinical Laboratories and Food and Drug Administration Staff](#)

Sincerely,
Darcie

Darcie L. Johnston
Director, Intergovernmental Affairs
U.S. Department of Health and Human Services

Darcie.Johnston@hhs.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Sent: Wednesday, February 26, 2020 11:49 AM PST
To: Arwady, Allison AA (CDC cityofchicago.org); Armstrong, Gregory (CDC/DDID/NCEZID/OD); Balter, Sharon (CDC ph.lacounty.gov); Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Brad Hutton; Bresee, Joseph (CDC/DDID/NCIRD/ID); Brian Hiatt; Christine Mahle; Christopher Shields; Conover, Craig (CDC illinois.gov); Debra Wadford; Duchin, Jeff; Edward Desmond; Gail Cooksey; Ghinai, Isaac; Godfred Masinde; Green, Nicole (CDC ph.lacounty.gov); Hector Rivas; Jain, Seema (CDC cdph.ca.gov); Jessica Sell; Justin DeWitt; Kauerauf, Judy (CDC illinois.gov); Komatsu, Kenneth (CDC azdhs.gov); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Layden, Jennifer (CDC illinois.gov); Layton, Marci (CDC health.nyc.gov); Leslie Chapman; Lindquist, Scott SL (CDC doh.wa.gov); Marelle Fricchione; Kay, Meagan; Meredith Haddix; Molly Lamb; Cowgill, Karen; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov); Rose, Laura E. (CDC/DDPHSS/OLSS/OLS); Sarah Park; Black, Stephanie SB (CDC cityofchicago.org); Thomas-Smith, Evonda; Safranek, Thomas <NE> (CDC nebraska.gov); Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Weiss, Don (CDC health.nyc.gov); Zahn, Matthew
Subject: updated communications documents and project determination
Attachments: sentinel surveillance determination_Final Feb 26 2020.pdf, CDC Communications Rollout - First case detected through enhanced surveillance_CLEAN-V3.docx, QA-COVID-Surveillance-Enhancement-Brief-Media-Statements-v7.docx, QA-COVID-Surveillance-Enhancement-public-affairs-plan-v3-CLEAN.docx, QA-COVID-Surveillance-Enhancement-QA-v7-CLEAN.docx

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello. Enclosed are updated communications documents that include talking points around the finding of positives from de-identified specimens. Also, I have enclosed the non-research determination document. I will be sending additional specimen-related guidance (labeling, shipping) later today.

Since the situation is fluid, **please again provide an update as to when you think you can start sending specimens** to CDC for testing. Also, please let me know if there is anything in particular that is holding you up. Thank you, Gayle

Gayle Langley, MD, MPH, FAAP
Centers for Disease Control and Prevention
Respiratory Viruses Branch
Lead, RSV Epi Team
1600 Clifton Road NE MS H24-5
Atlanta, GA 30333
Telephone: 404-639-8092
Email: fez7@cdc.gov



Project Determination

Title

Project ID:

Project Contact: Gayle Langley

Organization: Epi Task Force

Status:

Intended Use:

Estimated Start Date: 2/24/2020

Estimated Completion Date: 2/24/2021

CDC/ATSDR HRPO/IRB Protocol#:

OMB Control#:

Description

Priority

Urgent!

Date Needed

2/24/2020

Determination Start Date

2/24/2020

Description

Conduct sentinel surveillance at select sites

Goals/Purpose

To determine if unrecognized community transmission of SARS-CoV-2 is occurring.

Objective

Detect cases of COVID-19

WA-KINGCO-20-0492-G-000405

KCPRRCV0103572

Activities or Tasks

Under sentinel surveillance, each jurisdiction will prospectively obtain respiratory specimens collected from participants in an existing study of persons with respiratory symptoms or that are collected as part of routine clinical care.

Target Population to be Included/Represented

To start, we propose establishing this “sentinel” surveillance at six sites: Los Angeles/Orange County and San Francisco Bay Area, California; Seattle, Washington; Chicago, Illinois; New York, New York; and Honolulu, Hawaii. Additional sites may be added as testing capacity increases.

Tags/Keywords

CDC's Role

Laboratory Test of Specimens, aggregation of information from each of the sentinel sites

Method Categories

Collection of data and biospecimens

Methods

Collection of Info, Data, or Bio specimens

Acceptable specimens are upper and lower respiratory tract specimens, such as nasopharyngeal (NP) and oropharyngeal (OP) that are collected with synthetic fiber swabs with plastic shafts. Calcium alginate swabs or swabs with wooden shafts should not be used since they contain substances that inactivate some viruses. If only one type of swab can be obtained, NP is the preferred. Respiratory specimens should be collected and transported in accordance with CDC guidance: <https://www.cdc.gov/coronavirus/2019-nCoV/lab/guidelines-clinical-specimens.html>.

Data collected will include basic demographics of the person tested (age and sex), county and state where testing occurred, date of specimen collection and result of SARS-CoV-2 testing. Only these data will be shared with CDC through a secured data transmission pathway. Health departments will also collect the hospital/facility name and person's name and contact information so appropriate follow-up of a positive test result can occur. Where specimens are de-identified, no follow-up of patients or contacts will occur. These data will not be shared with CDC. Data will be presented in aggregate as the proportion of patients who test positive out of those tested, stratified by location, age and sex.

Expected Use of Findings/Results and their impact

The purpose of this surveillance activity is to determine if SARS-CoV-2 viruses are circulating in the community among persons with no exposures known to be associated with infection and if there is wider community spread. If cases are detected in this surveillance that can't be linked to a known exposure, this information will help inform local and national decisions on measures to limit spread of the virus. Positives detected from de-identified specimens will help frame surveillance strategies. A framework for this decision process is being developed by CDC in parallel with this surveillance system, and will be discussed with collaborators before the start of surveillance.

Will PII be captured?

PII will be captured but not shared with CDC, At some site PII will be collected but then specimens will be deidentified and delinked prior to testing

Does CDC have access to the Identifiers

CDC will not have access to PII

Is a certificate or assurance of confidentiality in place or planned?

No

Is a non-disclosure agreement in place?

No

Funding

Funding Type	Funding Title	Funding #	Original Fiscal Year	# of Years of Award

Institutions

Institution	FWA #	FWA Exp. Date	IRB Title	IRB Exp. Date	Funding #

Staff

Staff Member	SIQT Exp. Date	Citi Biomedical Exp. Date	Citi Social and Behavioral Exp. Date	Citi Good Clinical Exp. Date	Staff Role	Email	Phone #	Organization/ Institution

DMP – Data Management Plan

Proposed Data Collection Start Date

Proposed Data Collection End Date

Proposed Public Access Level

Public Access justification

WA-KINGCO-20-0492-G-000407

KCPRRCV0103574

How Access Will Be Provided for Data	
Plans for archival and long-term preservation of the data	

Spatiality (Geographic Location)

Country	State/Province	County/Region
USA	Los Angeles/Orange County and San Francisco Bay Area, CA; Seattle, WA; Chicago, IL; New York, NY; and Honolulu, HI	

Determinations

Determination	Justification	Completed	Entered By & Role
HSC: Non research public health surveillance activities	The activities are required by public health authorities to detect and identify onset of disease transmission during the course of an emerging infection that threatens public health	2/25/2020	Sara Vagi, Human Subjects Coordinator
PRA: PRA Determination - Pending			

CDC COVID-19 Surveillance Enhancement Plan

Brief Media Statements

February 24, 2020

Includes:

Enhanced COVID-19 community surveillance beginning
How will community surveillance be implemented?
How will community surveillance roll out to the rest of the country?
What happens if you detect community spread with the virus that causes COVID-19?

Indicates optional/suggested content

CDC beginning enhanced COVID-19 surveillance in communities

CDC and its public health partners will begin focused surveillance for community spread of novel coronavirus in locations with large numbers of travelers from places where spread of COVID-19 has been reported.

Patients who come into healthcare settings, including emergency rooms or outpatient clinics with respiratory symptoms (fever, coughing, or shortness of breath) will have respiratory samples taken. Those samples that are negative for flu, will be tested for novel coronavirus infection. Testing will take place at CDC or one of several designated public health laboratories.

Optional (3 sentences): Sites were chosen for two reasons:

- These sites have existing surveillance systems to detect respiratory illnesses that can be enhanced to include surveillance for novel coronavirus relatively quickly.
- These sites have large numbers of travelers from places where community transmission of COVID-19 has been reported.

The goal of the US public health response is to detect new cases quickly and prevent the spread of 2019-nCoV in this country. Imported cases of COVID-19 in travelers have been [detected in the U.S.](#) Limited person-to-person spread of COVID-19 also has been seen among close contacts of returned travelers from Wuhan. We are starting this surveillance to understand whether the infection has spread further in the community.

How will community surveillance be implemented?

The first stage is that sites will begin additional testing on respiratory samples taken from patients appearing at healthcare settings, including emergency rooms and clinics with respiratory symptoms (fever, coughing, or shortness of breath) but whose influenza (flu) tests have been negative. Those samples will then be tested for coronavirus at CDC or at public health laboratories.

To get answers quickly, in some geographic areas we will test samples that were previously collected from persons with respiratory illness. These specimens have been de-identified so we will not be able to

identify those who test positive for the virus, but it will allow us to make decisions about where to focus our surveillance efforts and other mitigation efforts.

In some areas, we will be testing people going forward. We will be able to identify and notify those persons and take additional actions to try to stop the spread of the virus.

Optional (1 sentence): Starting with select sites and testing a sample of patients will help inform whether this novel coronavirus is spreading in the United States. and allow CDC to review guidance on who to test and what measures to take to control the spread of the virus.

How will community surveillance roll out to the rest of the country?

In the second stage, with additional funding, CDC will support community surveillance in all states by adding coronavirus testing to the current respiratory virus testing conducted in public health laboratories around the country.

In the third stage, with additional funding, CDC will add coronavirus surveillance to other existing respiratory virus surveillance systems. CDC will also monitor deaths from coronavirus in various ways, including using death certificate data from the National Center for Health Statistics. CDC will launch special research studies to learn more about this new coronavirus and the disease it causes.

What happens if you detect community spread with the virus that causes COVID-19?

We will be work with local and state health authorities to determine how many cases are in the communities. CDC will also stand up more surveillance sites in other communities in order to better understand the number of cases there. All these data will help inform how the nation spends its public health resources.

CDC COVID-19 Surveillance Enhancement Plan

Q&As

February 24, 2020

1. What actions is CDC taking to detect community spread of COVID the United States?

Soon CDC and state and local health department partners will begin focused community surveillance in areas that have identified persons with COVID-19 or communities with large numbers of travelers from places where spread of COVID-19 is occurring.

Patients who come into healthcare settings, including emergency rooms or clinics, with respiratory symptoms compatible with influenza (flu) or novel coronavirus infection (fever, coughing, or shortness of breath) will have respiratory samples taken. Those samples that are negative for flu will be tested for novel coronavirus infection. Testing will take place at CDC or one of several designated public health laboratories.

2. Why were these areas chosen?

These areas were chosen for two reasons:

- They have existing surveillance systems to detect respiratory illnesses that can be enhanced to include surveillance for novel coronavirus relatively quickly.
- These sites have large numbers of travelers from places where community transmission of COVID-19 has been reported.

3. How will community surveillance be implemented?

In the first stage, communities will begin additional testing on respiratory samples taken from patients appearing at healthcare settings, such as emergency rooms and clinics, with symptoms compatible with influenza (flu) and novel coronavirus infection (fever, coughing, or shortness of breath) but whose flu tests have been negative. Those samples will then be tested for coronavirus at CDC or at public health laboratories.

Starting in these areas and testing a subset of patients will provide data on whether this novel coronavirus is circulating in the United States and inform guidance on who to test and what measures to take to control the spread of the virus. This can in turn signal whether additional surveillance or public health actions are warranted.

In the second stage, with additional funding, CDC will support community surveillance in all states by adding coronavirus testing to the current respiratory virus testing conducted in public health laboratories around the country.

In the third stage, with additional funding, CDC will to enhance existing respiratory virus surveillance infrastructure by adding coronavirus surveillance. The National Center for Health Statistics will begin monitoring death certificates for deaths related to coronavirus and CDC and its partners will launch special research studies to learn more about this new coronavirus and the disease it causes.

4. When will community surveillance expand to stages two and three?

Assuming funds are provided, stage two should begin within the next month and stage three within the next two months.

5. What are the existing respiratory virus surveillance systems that will be used in phase three?

Possible systems that will be used include:

- Emerging Infections Programs ([EIP](#)) network of sites across the United States, representing a population of approximately 44 million people.
- The seven study sites of the New Vaccine Surveillance Network ([NVSN](#)).
- CDC's U.S. Influenza Surveillance System which receives reports from more than 350 laboratories, approximately 2,600 outpatient health care providers, the National Center for Health Statistics, and respiratory surveillance coordinators and state epidemiologists from all state, local and territorial health departments.

6. How sensitive will this surveillance be?

Starting in areas where we believe the population is most at risk, we hope to detect any spread of the virus quickly. Once we have the initial data from the locations of stage one, CDC and its public health partners will be able to estimate how much of this new coronavirus is in the community.

7. What happens if you detect community spread with the virus that causes COVID-19?

We will be able to estimate how much the virus is circulating in those communities. CDC will also stand up more surveillance sites in those communities in order to better understand the number of cases there. All these data will help inform how the nation devotes its public health resources.

Last updated: 6:14 p.m. Monday, February 24, 2020

2019 Novel Coronavirus Public Affairs Guidance
and Communications Plan
February 24, 2020

Standing Up COVID-19 Community Surveillance

– Subject to change –

Communication Goal:

To convey measures being taken by CDC to enhance existing systems so as to begin surveillance for community spread of COVID-19 and subsequently communicate whether and how much community spread with COVID-19 is occurring in this country.

Objectives:

- Provide timely, accurate, relevant, and actionable information (even if it is limited) to the public and health professionals, including the appropriate level of concern for this event
- Provide public timely communications around public health recommendations to protect the health of Americans.
- Establish CDC's role as the primary official source of information on 2019 Novel Coronavirus in the United States
- Establish that CDC is responsive to the specific concerns and information needs of the public, healthcare providers, and the public health community

Audiences:

General Public	• Concerned people in the United States
Healthcare Providers	• Clinicians and other healthcare providers • Hospitals • Professional associations
Public Health Community	• Public health officials, including state and local health departments • Federal, state, local, and tribal officials • ASTHO, NACCHO, NPHIC, CSTE, APHL • Federal agencies and employees (U.S. Customs and Border Protection (CBP) and the Department of Homeland Security) • Foreign governments and international partners • Non-governmental and faith-based organizations • Public health laboratories
Travelers	• Travelers to and from the United
Travel Industry	• Airlines • Airports • Professional organizations for the airlines
Internal	• CDC Staff • CDC Country offices

Key Considerations

- There could be incomplete information, misinformation, rumors, and misconceptions among the public. People may take actions based on this information.
- Because this is a new virus with many scientific unknowns, risk communication principles are critical and should be applied to all communication messages. Use of risk communication principles can build and maintain public trust in CDC health recommendations, messaging, and materials.
- There could be delays in obtaining and releasing verified information to the public; the longer the delay, the greater the degree of news media and public speculation.
- Information to public audiences should be accessible, culturally relevant, technically correct, easily understood, and complete enough to encourage support of policies and official actions without seeming patronizing.
- There will be immediate and ongoing demands for information and products from CDC partners, news media, digital media, policy makers, the general public, and other audiences. This demand will place significant pressure on the CDC and the state(s) to provide facts quickly.
- Social media will increase the pressure and demand for information and greatly expand the potential for rumors and misinformation to spread rapidly.
- Special consideration should be given to monitor for and avoid stigmatization of Americans of Asian descent, including returning travelers and visitors from China.
- CDC's guidance and recommendations may change as we learn more about 2019 Novel Coronavirus.
- Existing and new CDC guidance and recommendations may differ from guidance provided by international organizations or other countries. It will be important to continue foreshadowing this and explaining, as needed, that this is a reasonable expectation.
- CDC will need to work closely with clinical partners to prevent transmission within healthcare facilities and ensure implementation of CDC's infection control guidance.

Messages

CDC messages should be timely, accurate, actionable, and relevant to the audience. The messages should be updated as soon as new information is verified.

The best source of up-to-date information is <https://www.cdc.gov/coronavirus/2019-ncov/index.html>

This is a rapidly evolving situation requiring daily updates to the website, which includes a risk assessment, summary of what CDC is doing, a plain language content for the public on prevention, treatment, about, and spread. More content, including an FAQ is in development.

CDC Media Spokespersons

The primary CDC media spokespersons are the following:

- Dr. Nancy Messonnier, Director, National Center for Immunization and Respiratory Diseases, CDC

- Dr. Joe Breese, National Center for Immunization and Respiratory Diseases, CDC
- **possible:** Dr. Gayle Langley, National Center for Immunization and Respiratory Diseases, CDC

Additional spokespersons will include:

- Dr. Jay Butler, Deputy Director for Infectious Diseases, CDC
- Dr. Robert Redfield, CDC Director
- Dr. Anne Schuchat, CDC Principal Deputy Director

Key CDC Public Affairs Activities

To be updated based on developments in response

Time Range	CDC Activities
Date TBD	• Work with local public health officials to coordinate media plan • Telebriefing, press release, interviews after ◦ Dr. Messonnier, along with public health officials from one or more of the surveillance locations • Consideration of Spanish-language interviews with CNN en Espanol, Univision, etc. • Re-assess weekend media/communication needs • Existing channels currently in use: Facebook Instagram and Twitter (@CDCgov & @CDCDirector) • Monitoring of social media for themes and issues CDC needs to address • Responding to public inquiries via 800-CDC-INFO
Date TBD	Public/Media Outreach Short term Activities: • Daily updates as needed to website, including risk assessment. • Daily reactive media statements as needed • A press release (with possible telebriefing) when stage two of community surveillance begins • As test results begin to come in, daily web updates of test results Events that would trigger additional media activity • Identification of the first confirmed U.S. case of COVID-19 not related to a previously confirmed case – telebriefing or press conference • CDC confirms patient-to-health care worker spread in U.S._telebriefing or press conference • CDC confirms first US death_telebriefing or press conference • CDC confirms sustained community spread_press briefing Long term Activities • Weekly reporting schedule similar to flu. • Communicate on a regular basis with state, tribal, local and territorial health departments and public health professionals. All of the above would be supported by accompanying social and digital media. Clinician Outreach • CDC to use all channels for communication directly with key public health stakeholders: ◦ Hosting COCA calls – Briefing calls with US-based health care providers, including state and local public health officials ◦ CDC Health Alert Network (HAN) notifications ◦ Potential CDC MMWR articles ◦ Peer-reviewed journals ◦ Medscape, WebMD partnerships, others.

	Amplification • Amplify messaging on CDC social platforms: Facebook Instagram and Twitter (@CDCgov & @CDCDirector) Feedback Loop for Possible Corrective Action • Monitoring of social media for themes and issues • Responding to public inquiries at 800-CDC-INFO
--	---

DRAFT

Rollout Title: First Case of “2019 Novel Coronavirus” Detected Through Enhanced Surveillance

Target Release Date: TBD

Topic: 2019 Novel Coronavirus in United States

Indicates areas to be updated when identification happens

Indicates items still being created

BLUE: [BOTTOM LINE UP FRONT]

The surveillance system set up to detect community spread of COVID-19 has identified its first case to test positive for the virus that causes COVID-19 [insert specifics]. It’s unclear at this point whether this case signals widespread community transmission of COVID is occurring. Community spread is defined as spread in the community that cannot be traced back to a traveler or someone who had another case.

MATERIALS

Rollout (this document)

Tick Tock (timeline – below)

Press Release (below)

Social media messaging (below)

Key messages/Talking points

Website content

CDC INFO prepared response

Partner communication dissemination

TICK TOCK:

Note: Some activities will happen **prior to** the official confirmation of a case in the United States.

Time Range	Activities
Pre-Public Announcement – 6 hours in advance	- Planning meeting with key surveillance partners to discuss communications roll-out - Brief key leadership at HHS/ASPA and other relevant agencies - NCIRD leadership - CDC leadership - HHS leadership - NSC - Other relevant HHS agencies - CDC-W and OA notifies Hill leadership, with specific calls between CDC leadership and state where case is located - HHS notifies intergovernmental organization partners: NGA, NCSL, CSG, NACo, NLC, and USCM - CDC notifies state and territorial health departments and key partner organizations including ASTHO, APHL, CSTE, NACCHO, etc. - CDC notifies PIOs (NPHIC) - CDC develops and clears media statement

Time Range	Activities
0 hour/Public Announcements (Day 1)	• CDC distributes media statement in coordination with state/local officials • POSSIBLE: Hold a press briefing (if possible, jointly with state/local health officials) ◦ Respond to news media requests • Update website and post messages on CDC social media handles • CDC notifies and coordinates with country offices and international partners • Activate archived prepared responses for CDC-INFO; consider “Hot Topic” announcement • Monitor and assess news media, social media, and public inquiries • Provide CDC guidance to clinicians, public health community, and labs (already in progress)
Days 2–4	• Distribute additional internal info to CDC staff, including Director email, Connects article • CDC issues a Health Alert Network announcement • Outreach to other stakeholder groups (e.g. hospital nurses and unions) • Ongoing strategic media outreach
Within first 5 days and beyond	New activities: • Coordinate outreach through COCA and partner calls, including calls with ASTHO, NACCHO, CSTE, NPHIC, DOD and additional notifications • Respond to partner requests for information and communication products Ongoing: • Continue posting updated information on main CDC communication channels • Respond to escalated public inquiries • Share updated information and resources with clinicians, health departments, labs, partners • Distribute additional internal communication updates to CDC staff • Monitor and assess news media, social media, and public inquiries for common themes and misperceptions and respond accordingly

PRIMARY POINTS OF CONTACT:

HHS/ASPA — Bill Hall, Mike Robinson
Agency/Communications — Michelle Bonds, Amy Heldman
NCIRD/Policy — Brooke Barry
NCIRD/Communications — Erin Burns, Kristen Nordlund

MEDIA SPOKESPERSONS:

- [spokesperson from state/local jurisdiction]
- Dr. Nancy Messonnier, Director, National Center for Immunization and Respiratory Diseases
- Dr. Anne Schuchat, CDC Principal Deputy Director

PRESS RELEASE

CDC Community-Based Surveillance Detects First Case of COVID

DATE -- The Centers for Disease Control and Prevention (CDC) today confirmed that a surveillance system set up to detect community spread of COVID-19 has identified a person who tested positive for the virus that causes COVID-19. This is the first instance of possible community spread detected through an enhanced surveillance system that CDC stood up in February. Community spread is defined as spread in the community that cannot be traced back to a traveler or someone who had another case.

Many other countries have also identified cases in the community and the coming days and weeks are likely to bring more confirmed cases of COVID-19 in the United States and globally, but strong public health measures now may blunt the impact of the virus in the United States.

[If case is from de-identified specimen] In order to get quick answers to the question of whether the virus is spreading in the community, we tested deidentified samples that had been previously collected from persons with respiratory illness. A person who sought medical care in XX tested positive. We are not able to identify the person, but we will be able to use this information to focus our surveillance efforts.

CDC and XX will enhance testing in that particular community, as well as those around it, to see whether additional cases are detected. Identifying community spread of a novel pathogen can sometimes be a trigger a change to public health response strategy. For example, efforts might move to tracking the infected person's contacts to minimize spread in hospitals and among most vulnerable people in the community.

[If case is from identifiable specimen] This case was detected in a patient in XXX who sought medical care. Testing on the respiratory sample was negative for flu, at which point it was tested for novel coronavirus and found to be positive. It's unclear at this point whether this case signals widespread community transmission of COVID is occurring or whether this person may have had travel history or exposure to a known COVID case.

CDC and XX are looking into the case and will enhance testing in that particular community, as well as those around it, to see whether additional cases are detected. Identifying community spread of a novel pathogen can sometimes be a trigger a change to public health response strategy. For example, efforts might move to tracking the infected person's contacts to minimize spread in hospitals and among most vulnerable people in the community.

CDC has been proactively preparing for the introduction of 2019-nCoV in the U.S. for weeks, including:

- First alerting clinicians on January 8 to be on the look-out for patients with respiratory symptoms and a history of travel to Wuhan, China.
- Developing guidance for preventing 2019 novel coronavirus (SARS-nCoV-2) from spreading to others in homes and communities.
- Developing guidance for clinicians for testing and management of COVID-19, as well as guidance for infection control of patients hospitalized or being evaluated by a healthcare provider.

CDC is working closely with (NAME STATES HERE) health departments, and other local partners. A CDC team has been deployed to support the ongoing investigations.

It is likely there will be more cases reported in the U.S. in the coming days and weeks. Community spread of COVID-19 is occurring in China as well as a number of other countries, including Hong Kong, Iran, Italy, Japan, Singapore, South Korea, Taiwan, and Thailand.

There is no vaccine to prevent COVID-19 and no medication specifically approved to treat infection. Treatment consists of supportive care. At this time, urging sick people to stay home and to call ahead before visiting their doctor, recommending reconsideration of large gatherings, and encouraging hand hygiene would be the most important response strategy.

###

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

CDC works 24/7 protecting America's health, safety, and security. Whether diseases start at home or abroad, are curable or preventable, chronic or acute, or from human activity or deliberate attack, CDC responds to America's most pressing health threats. CDC is headquartered in Atlanta and has experts located throughout the United States and the world.

SOCIAL MEDIA MESSAGES:

Twitter

@CDC confirmed the first case covid-19 (2019-nCoV) imported into the U.S. CDC continues to follow the situation closely and has already taken preparedness precautions to respond to this potential emerging public health threat. #2019-nCoV <https://www.cdc.gov/coronavirus/2019-nCoV/summary.html>

Facebook

CDC has confirmed the first case of 2019 Novel Coronavirus (2019-nCoV) imported into the United States in a patient in [state]. Laboratory testing confirmed this patient's illness was caused by the new coronavirus

associated with a recent outbreak of pneumonia in Wuhan City, China. The patient has been isolated and all necessary precautions are being taken to prevent any further exposures. Learn more about what CDC is doing to respond here: <https://www.cdc.gov/coronavirus/2019-nCoV/summary.html#cdc-response>

KEY MESSAGES/TALKING POINTS

WEBSITE CONTENT

CDC-INFO PREPARED RESPONSES

PARTNER COMMUNICATION DISSEMINATION

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Sent: Thursday, February 27, 2020 12:25 PM PST
To: Arwady, Allison AA (CDC cityofchicago.org); Armstrong, Gregory (CDC/DDID/NCEZID/OD); Balter, Sharon (CDC ph.lacounty.gov); Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Brad Hutton; Bresee, Joseph (CDC/DDID/NCIRD/ID); Brian Hiatt; Christine Mahle; Christopher Shields; Conover, Craig (CDC illinois.gov); Debra Wadford; Duchin, Jeff; Edward Desmond; Gail Cooksey; Ghinai, Isaac; Godfred Masinde; Green, Nicole (CDC ph.lacounty.gov); Hector Rivas; Jain, Seema (CDC cdph.ca.gov); Jessica Sell; Justin DeWitt; Kauerauf, Judy (CDC illinois.gov); Komatsu, Kenneth (CDC azdhs.gov); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Layden, Jennifer (CDC illinois.gov); Layton, Marci (CDC health.nyc.gov); Leslie Chapman; Lindquist, Scott SL (CDC doh.wa.gov); Marelle Fricchione; Kay, Meagan; Meredith Haddix; Molly Lamb; Cowgill, Karen; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov); Rose, Laura E. (CDC/DDPHSS/OLSS/OLS); Sarah Park; Black, Stephanie SB (CDC cityofchicago.org); Thomas-Smith, Evonda; Safranek, Thomas <NE> (CDC nebraska.gov); Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Weiss, Don (CDC health.nyc.gov); Zahn, Matthew
CC: Albrecht, Valerie S. (CDC/DDID/NCEZID/OD)
Subject: instructions for sending sentinel surveillance specimens to CDC
Attachments: Guidance for shipping 2019 novel coronavirus specimens to CDC_Feb 27 2020.docx, Copy of Sentinel Surveillance GFAT.xlsx

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello. As requested, enclosed are instructions for sending different types of lab specimens to CDC (e.g. surveillance, PUIs, etc.). The GFAT for sending surveillance specimens is embedded in the document and also included here.

Also on the call, we will ask each site:

site	Date of first shipment/testing	type (ID or de>ID)	setting (Clinic/ED)	Where testing will be done (CDC/site)	Any barriers remaining?
LA-CA					
SF-CA					
Solano-CA					
NYC					
Chicago					
Hawaii					
Seattle					

Talk to you soon, Gayle

Gayle Langley, MD, MPH, FAAP
Centers for Disease Control and Prevention
Respiratory Viruses Branch
Lead, RSV Epi Team
1600 Clifton Road NE MS H24-5
Atlanta, GA 30333
Telephone: 404-639-8092
Email: fez7@cdc.gov

Please keep boxes with specimens from persons under investigation/cases separate from surveillance specimens.

Persons under investigation:

- Requires DASH forms (details in pdf)
- All specimens must be labelled with unique CDC nCoV ID (previously call CDC PUI ID)



CDC RVDP Specimen
Submission Guideline

When shipments are going out on Monday – Thursday:

Ship overnight using your usual courier such as FedEx or UPS to the following address

ATTN: STAT LAB - 2019 novel coronavirus - PUI

c/o Steve Lindstrom, Shifaq Kamili (Unit 84)

Respiratory Viruses Diagnostic Laboratory / DVD

Centers for Disease Control and Prevention

1600 Clifton Road, NE

Atlanta, Georgia, 30333

Telephone: 404-639-1587

Email: SQL5@CDC.GOV

If shipments are going out Friday, Saturday, or Sunday or holidays:

•

The designated shipping point of contact should collect the following information:

- Name and contact information for the person who will be handing the package to the courier
 - Address of where the package will be picked up
 - Estimated time the package will be ready
 - Number, rough dimensions, and rough weight of the package(s)
 - Whether package contains cold pack, dry ice, or other
 - PUI ID
- Next, the shipping point of contact should email the above information to CDC IMS Logistics Transportation (eocevent306@cdc.gov) and CDC IMS Logistics Section Chief (CDC) (eoelogchief@cdc.gov)
 - Then the shipping point of contact should call the CDC Emergency Operations Center (770-488-7100) to notify the EOC Logistics Section that a World Courier shipment needs to be arranged for coronavirus specimen shipping. Please have the PUI ID number and the information in bullet number 1 ready when you call.
 - CDC EOC shipping staff will contact the person handing off the package to provide the details for how and when the courier will pick up the package.

Please email the CDC laboratory staff (sgk5@cdc.gov), the Novel Coronavirus Response Laboratory Task Force (eocevent177@cdc.gov), and the Novel Coronavirus Response PUI Team (eocevent185@cdc.gov) the shipping information, including the sender's name on the shipping label and the tracking number.

Serial specimens from confirmed cases:

- Use the CDC nCoV ID (formerly called the “PUI ID”)– specimen type identifier (NP = nasopharyngeal swab, OP = oropharyngeal swab); If there are multiple of the same specimen type please label them sequentially (e.g. 0001234-NP1, 0001234-NP2)
- **Each specimen should be accompanied by a completed CDC Form 50.34 (also known as a DASH form) or GFAT form**
 - Please include the 50.34 or GFAT in the package and send a secure email with the 50.34 or GFAT to Marla Petway (vtw6@cdc.gov), Dennis Bagarozzi (zbg7@cdc.gov), DSRstat@cdc.gov
- Please email a copy of a de-identified specimen shipping manifest for laboratory-confirmed cases and PUIs to the novel Coronavirus Epi Investigations Team Inbox (eocevent330@cdc.gov). This should include at a minimum the following: Original Submitter Patient ID, Original Submitter Specimen ID, SPHL Alternative Patient ID, SPHL Alternative Specimen ID, Sample Type, Date of Collection, patient type (CASE or PUI)

ATTN: STAT LAB—
c/o Steve Lindstrom, Shifaq Kamili (Unit 84)
Respiratory Viruses Diagnostic Laboratory / DVD
Centers for Disease Control and Prevention
1600 Clifton Road, NE
Atlanta, Georgia, 30333
Telephone: 404-639-1587
Email: respvirus@CDC.GOV

If shipments are going out Friday, Saturday, or Sunday or holidays:

- The designated shipping point of contact should collect the following information:
 - Name and contact information for the person who will be handing the package to the courier
 - Address of where the package will be picked up
 - Estimated time the package will be ready
 - Number, rough dimensions, and rough weight of the package(s)
 - Whether package contains cold pack, dry ice, or other
 - CDC nCoV ID
- Next, the shipping point of contact should email the above information to CDC IMS Logistics Transportation (eocevent306@cdc.gov) and CDC IMS Logistics Section Chief (CDC) (eoclogchief@cdc.gov)
- Then the shipping point of contact should call the CDC Emergency Operations Center (770-488-7100) to arrange weekend-specific overnight specimen logistics. Please indicate that the call is about coronavirus specimen shipping and please have the CDC nCoV ID number.
- CDC EOC shipping staff will contact the person handing off the package to provide the details for how and when the courier will pick up the package.

Please email the CDC laboratory staff (respvirus@cdc.gov) and the Novel Coronavirus Response Laboratory Task Force (eocevent177@cdc.gov) the shipping information, including the sender’s name on the shipping label and the tracking number, and copy the PUI Team (eocevent185@cdc.gov) and the Epidemiology and Surveillance Team (eocevent330@cdc.gov)

Specimens from sentinel surveillance:

- Specimen labels: SURV-STATE-FIPS-specimen # {e.g. SURV-CA-FIPS code-00001}
- NO DASH forms are required
- Shipping log is required



Copy of Sentinel
Surveillance GFAT.xls>

When shipments are going out on Monday – Thursday:

Ship overnight using your usual courier such as FedEx or UPS to the following address

ATTN: STAT LAB—2019 Novel Coronavirus surveillance

c/o Steve Lindstrom, Shifaq Kamili (Unit 84)—

Respiratory Viruses Diagnostic Laboratory / DVD

Centers for Disease Control and Prevention

1600 Clifton Road, NE

Atlanta, Georgia, 30333

Telephone: 404-639-1587

Please email completed shipping logs (in Excel format) to dsrstat@cdc.gov when the shipment is in route.

If shipments are going out Friday, Saturday, or Sunday or holidays (please check first whether that is acceptable for surveillance specimens):

- The designated shipping point of contact should collect the following information:
 - Name and contact information for the person who will be handing the package to the courier
 - Address of where the package will be picked up
 - Estimated time the package will be ready
 - Number, rough dimensions, and rough weight of the package(s)
 - Whether package contains cold pack, dry ice, or other
 - CDC nCoV ID
- Next, the shipping point of contact should email the above information to CDC IMS Logistics Transportation (eocevent306@cdc.gov) and CDC IMS Logistics Section Chief (CDC) (eoclogchief@cdc.gov)
- Then the shipping point of contact should call the CDC Emergency Operations Center (770-488-7100) to arrange weekend-specific overnight specimen logistics. Please indicate that the call is about coronavirus specimen shipping and please have the CDC nCoV ID number.
- CDC EOC shipping staff will contact the person handing off the package to provide the details for how and when the courier will pick up the package.

Please email the CDC laboratory staff (respviro@cdc.gov) and the Novel Coronavirus Response Laboratory Task Force (eocevent177@cdc.gov) the shipping information, including the sender's name on the shipping label and the tracking number, and copy the PUI Team (eocevent185@cdc.gov) and the Epidemiology and Surveillance Team (eocevent330@cdc.gov).

NATIVE DOCUMENT PLACEHOLDER

Please review the native document KCPRRCV0103641.xlsx

CDC RESPIRATORY VIRUSES DIAGNOSTIC LABORATORY

2019 NOVEL CORONAVIRUS (nCoV) SPECIMEN SUBMISSION GUIDELINES

FOR PUIs

The Respiratory Viruses Diagnostic Laboratory, located within Division of Viral Diseases, Centers for Disease Control and Prevention (CDC), is responsible for the detection and identification of respiratory viruses (non-influenza), including respiratory syncytial virus, human parainfluenza viruses 1-4, human metapneumovirus, adenovirus, rhinovirus, coronavirus (including SARS-coronavirus and MERS) and human bocavirus. Diagnostic testing for human parvovirus B19 is also available on a limited basis.

Prior to submitting any specimens, consultation is required

SAFETY NOTE

Health care personnel collecting clinical samples from potentially infectious patients should follow infection prevention and control [recommendations](#). Sample processing should be performed in at least a Class II biological safety cabinet following a minimum of biosafety level 2 guidelines. Please refer to the CDC website for specimen handling biosafety guidelines: <https://www.cdc.gov/coronavirus/2019-nCoV/lab/index.html>

TIMING OF SPECIMEN COLLECTION

Specimens should be collected as soon as possible after onset of illness, preferably within the first 3-4 days. Although some viruses may be detected after longer time periods, the likelihood of recovering most respiratory viruses diminishes after 3-4 days.

SPECIMEN TYPE

For novel coronavirus testing, CDC is currently requesting nasopharyngeal swab and oropharyngeal swab specimens on all persons under investigation (PUI). In addition, sputum samples are requested for PUIs with productive cough. Swab specimens should be collected using only swabs with a synthetic tip (e.g., polyester, Dacron®) and an aluminum or plastic shaft. Swabs with cotton tips and wooden shafts are not recommended. Specimens collected with swabs made of calcium alginate are not acceptable.

SPECIMEN COLLECTION AND STORAGE

Specific specimen collection/handling instructions and biosafety guidelines for 2019 novel coronavirus specimens are available at: <https://www.cdc.gov/coronavirus/2019-nCoV/guidance-laboratories.html>.

Refrigerate all specimens promptly after collection. If specimens can be shipped to CDC within 72 hours of collection, they should be kept refrigerated at 4°C and shipped on gel ice-packs. Freezing should be avoided if possible, as this will reduce virus viability. If specimens must be held for >72 hours, they should be promptly frozen at -70°C and shipped on dry ice. Liquid specimens should be aliquoted into properly labeled, leakproof, unbreakable screw-cap vials. Samples should be collected and processed in a manner that prevents cross-contamination between specimens, including changing gloves between specimens.

SPECIMEN LABELING AND DOCUMENTATION

All specimens must be labeled with:

- A unique identifier assigned to the patient
- CDC nCoV ID (previously called the CDC PUI ID)
- Specimen type
- Date collected

Please make sure that the information on the specimen tube matches exactly the information provided in the CDC Form 50.34 below. Otherwise, the specimen will be rejected or testing will be significantly delayed while the discordant information is rectified.

Please submit all specimens through the State Public Health Laboratory. All results will be reported from the Respiratory Viruses Diagnostic Laboratory to the State Public Health Laboratory.

FORM:

Each specimen should be accompanied by a completed CDC Form 50.34 (also known as a DASH form). Please include the 50.34 in the package. A copy of the form is available at:
<https://www.cdc.gov/laboratory/specimen-submission/pdf/form-50-34.pdf>

Complete all fields of the 50.34 electronically. **DO NOT fill it in by hand.**

In particular, please make sure to include the following:

- Patient first name and last name
- Patient date of birth
- Original Submitter Patient ID
- Original Submitter Specimen ID
- State Public Health Laboratory contact information including full name, title, complete mailing address, email address, telephone, and fax number of the submitter
- State Public Health Lab Patient ID
- States Public Health Lab Specimen ID
- CDC nCoV ID (previously called CDC PUI ID e.g., 0010GA)
- CDC nCoV ID (previously called the CDC PUI ID) - two letter specimen type identifier (NP = nasopharyngeal swab, OP = oropharyngeal swab, SP = sputum, BAL = bronchoalveolar lavage)
 - If there are multiple of the same specimen type please label them sequentially (e.g. 0010GA-NP1, 0010GA-NP2)
- Specimen collected date
- Specimen source (type)

In the upper left-hand corner of the form, to ensure proper routing:

- For *test requested*, select “Respiratory virus molecular detection (non-influenza) CDC-10401”
- For *At CDC bring to the attention of*, put “Stephen Lindstrom: 2019-nCoV”

Please make sure the State Public Health Laboratory ID and CDC nCoV IDs (previously called the CDC PUI ID) are included in the fields indicated below.

Select the Specimen Origin to Begin the Form

HUMAN CDC SPECIMEN SUBMISSION FORM: SPECIMENS OF HUMAN ORIGIN

LABORATORY EXAMINATION REQUESTED Test order name: Test order code: Suspected Agent: Date sent to CDC: At CDC, bring to the attention of:	STATE PHL / NEW YORK CITY DEPARTMENT OF HEALTH & MENTAL HYGIENE / FEDERAL AGENCY / INTERNATIONAL INSTITUTION / PEACE CORPS Name: (Laboratory Director or designee) Title: Last: First: MI: Suffix: Institution name: Street address: City: ZIP Postal Code: State: Country: Fax: Point of Contact: (Person to be contacted if there is a question regarding this order) Country Code: Area Code: Local Number (e.g. 410/0000): International Area: Country Code: Area Code: Local Number (e.g. 410/0000): POC email:
PATIENT INFORMATION Patient Name: Last: First: MI: Suffix: Birth date: Case ID: Sex: Age: Age Units: Clinical Diagnosis: Date of onset: Pregnancy Status: Fatal: Date of Death:	Patient ID: Alternative Patient ID: 0010GA Specimen ID: Alternative Specimen ID: 0010GA NP State Public Health Lab Patient ID State Public Health Lab Specimen ID CDC nCoV ID CDC nCoV ID – Specimen type Identifier

If you need help completing the 50.34 DASH Form, please contact 404-639-2170 or cdcidlabinfo@cdc.gov

SHIPPING GUIDELINES

Specimens should be packed according to International Air Transport Association (IATA) regulations <http://www.iata.org/whatwedo/cargo/dgr/Pages/index.aspx>. Shipments from outside of the United States may require an importation permit that can be obtained from the CDC. For specific instructions, see the "Packing, Shipping, and Transport" section from this CDC webpage document (last section): <http://www.cdc.gov/coronavirus/mers/guidelines-lab-biosafety.html>

Specimens should be stored and shipped at the temperatures indicated in the *Specimen Collection and Storage* section above. **If samples are unable to be shipped within 72 hours of collection, they should be stored at -70°C and shipped on dry ice.** Virus isolates can be shipped on gel ice-packs. When shipping a frozen specimen from long distances or from international locations, it is best to use a combination of dry ice and frozen gel ice-packs. The gel ice-packs will remain frozen for a day or two after the dry ice has dissipated.

All specimens must be prepacked to prevent breakage and spillage.

- Specimen containers should be sealed with Parafilm® and placed in ziplock bags.
- Place enough absorbent material to absorb the entire contents of the Secondary Container (containing Primary Container) and separate the Primary Containers (containing specimen) to prevent breakage.
- Send specimens with cold packs or other refrigerant blocks that are self-contained, not actual wet ice. This prevents leaking and the appearance of a spill.
- When large numbers of specimens are being shipped, they should be organized in a sequential manner in boxes with separate compartments for each specimen.

Some things ***not to do***:

- Do not place any dry ice in the "Primary Container" or "Secondary Container", foam envelopes, ziplock bags, cryovial boxes, or hermetically sealed containers.
- Do not place Primary Containers sideways or upside down in ziplock bags.
- Do not place any paperwork in the Secondary Containers or ziplock bags, so as not to damage the paperwork.
- Do not use biohazard/autoclave bags to prepack your materials due the inadequate seal of these bags.

When shipments are going out on Monday – Thursday:

Ship overnight using your usual courier such as FedEx or UPS to the following address

ATTN: STAT LAB - 2019 novel coronavirus - PUI
c/o Steve Lindstrom, Shifaq Kamili (Unit 84)
Respiratory Viruses Diagnostic Laboratory / DVD
Centers for Disease Control and Prevention
1600 Clifton Road, NE
Atlanta, Georgia, 30333
Telephone: 404-639-1587
Email: SQL5@CDC.GOV

If shipments are going out Friday, Saturday, or Sunday or holidays:

- The designated shipping point of contact should collect the following information:
 - Name and contact information for the person who will be handing the package to the courier
 - Address of where the package will be picked up
 - Estimated time the package will be ready
 - Number, rough dimensions, and rough weight of the package(s)
 - Whether package contains cold pack, dry ice, or other
 - PUI ID

- Next, the shipping point of contact should email the above information to CDC IMS Logistics Transportation (eocevent306@cdc.gov) and CDC IMS Logistics Section Chief (CDC) (eoclogchief@cdc.gov)
- Then the shipping point of contact should call the CDC Emergency Operations Center (770-488-7100) to notify the EOC Logistics Section that a World Courier shipment needs to be arranged for coronavirus specimen shipping. Please have the PUI ID number and the information in bullet number 1 ready when you call.
- CDC EOC shipping staff will contact the person handing off the package to provide the details for how and when the courier will pick up the package.

Please email the CDC laboratory staff (sgk5@cdc.gov), the Novel Coronavirus Response Laboratory Task Force (eocevent177@cdc.gov), and the Novel Coronavirus Response PUI Team (eocevent185@cdc.gov) the shipping information, including the sender's name on the shipping label and the tracking number.

Version 10.0, February 11, 2020



NATIVE DOCUMENT PLACEHOLDER

Please review the native document KCPRRCV0103636.xlsx

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI)
Sent: Sunday, March 1, 2020 7:27 AM PST
To: Duchin, Jeff
CC: Bell, Michael MD (CDC/DDID/NCEZID/DHQP); Armstrong, Gregory (CDC/DDID/NCEZID/OD); Kay, Meagan
Subject: RE: exposures in hospitals

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

We will be available when you want to talk – we're in meeting w/ dan and Nancy now, have a follow-up at 11 to 12 est, but can work around to find the support you need. Of course, John and team on ground are going to be best positioned. Best,
satish

*Satish K. Pillai, MD MPH
Deputy Director, Division of Preparedness and Emerging Infections
CDR, U.S. Public Health Service
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention*

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Sunday, March 1, 2020 10:16 AM
To: Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Cc: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: Fwd: exposures in hospitals

We are having a very serious challenge related to hospital exposures and impact on the healthcare system. Would be great to have a call to discuss. Will be meeting with your team here this morning and then maybe we can chat after that.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: John B. Lynch <jblynch@uw.edu>
Sent: Sunday, March 1, 2020 7:09:22 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Kawakami, Vance <Vance.Kawakami@kingcounty.gov>
Subject: exposures in hospitals

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Good morning my friends,

Quick update:

- Large Evergreen exposure (you are well aware)
- Large Valley exposure (pretty sure you are aware). We developed a plan last night, going to isolate as many HCW as possible, but can't keep ICU open without that exposed pool. So, for the moment, these medium risk individuals are at work and will be conducting 2x daily health screening. More to come today.
- HMC: last night I learned about a death in a pt presenting with sepsis from Life Center Kirkland earlier this week. My assumption is that he had COVID-19. As of 5 minutes ago, I have a symptomatic ICU physician who took care of him. We are working on mitigation today. I suspect that we will not be able to follow current CDC recs for exposed HCWs either. We are going to try to get swabs on the doc now and path is trying to get tissue to test.

As you might imagine, I am very concerned about the hospitals at this point.

Available to discuss anytime if helpful. You have my number.

John

From: Lofy, Kathy H (DOH)
Sent: Tuesday, March 3, 2020 10:01 PM PST
To: Duchin, Jeff; Clark, Thomas A. (CDC/DDID/NCIRD/DVD); Wiesman, John (DOH); Lindquist, Scott W (DOH); Kay, Meagan
Subject: RE: Case and Contact One-pagers

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Both of the documents look great. I noticed the talking points Hilary put together say something about everyone with F and cough/SOB staying home for 7/10 days. I think we talked about that at some point but probably doesn't make sense.

I will work with our comms team on formatting.

From: Duchin, Jeff [mailto:Jeff.Duchin@kingcounty.gov]
Sent: Tuesday, March 3, 2020 8:45 PM
To: Lofy, Kathy H (DOH) <Kathy.Lofy@DOH.WA.GOV>; Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>; Wiesman, John (DOH) <jmwiesman@doh.wa.gov>; Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Subject: Re: Case and Contact One-pagers

Here's the other one, thanks much.

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Lofy, Kathy H (DOH) <Kathy.Lofy@DOH.WA.GOV>
Sent: Tuesday, March 3, 2020 7:15 PM
To: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Wiesman, John (DOH) <jmwiesman@doh.wa.gov>; Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Subject: Case and Contact One-pagers

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Attached are the current drafts of the case and contact one pagers. I changed the case isolation period to 7 days per Jeff's text.

Let me know if you need help with adapting them for the school situation.

Kathy Lofy, MD

Gender Pronouns: she/her

State Health Officer

Office of the Secretary

Washington State Department of Health

kathy.lofy@doh.wa.gov

360-236-4030 | www.doh.wa.gov



From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI)
Sent: Sunday, March 1, 2020 7:36 AM PST
To: Duchin, Jeff; Bell, Michael MD (CDC/DDID/NCEZID/DHQP); Jernigan, Daniel B. (CDC/DDID/NCIRD/ID); Armstrong, Gregory (CDC/DDID/NCEZID/OD)
CC: Kay, Meagan; Belay, Ermias (CDC/DDID/NCEZID/DHCPP)
Subject: RE: exposures in hospitals

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Jeff, Meagan –

Ermias is now going to serve as the HQ POC for the field team, so you have 1 stop to make sure you get prompt responses to you inquiries. As I noted earlier, we will of course be available to support a call later today to discuss issue below.

satish

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Sunday, March 1, 2020 10:16 AM
To: Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Cc: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: Fwd: exposures in hospitals

We are having a very serious challenge related to hospital exposures and impact on the healthcare system. Would be great to have a call to discuss. Will be meeting with your team here this morning and then maybe we can chat after that.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: John B. Lynch <jblynch@uw.edu>
Sent: Sunday, March 1, 2020 7:09:22 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Kawakami, Vance <Vance.Kawakami@kingcounty.gov>
Subject: exposures in hospitals

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Good morning my friends,

Quick update:

- Large Evergreen exposure (you are well aware)
- Large Valley exposure (pretty sure you are aware). We developed a plan last night, going to isolate as many HCW as possible, but can't keep ICU open without that exposed pool. So, for the moment, these medium risk individuals are at work and will be conducting 2x daily health screening. More to come today.
- HMC: last night I learned about a death in a pt presenting with sepsis from Life Center Kirkland earlier this week. My assumption is that he had COVID-19. As of 5 minutes ago, I have a symptomatic ICU physician who took care of him. We are working on mitigation today. I suspect that we will not be able to follow current CDC recs for exposed HCWs either. We are going to try to get swabs on the doc now and path is trying to get tissue to test.

As you might imagine, I am very concerned about the hospitals at this point.

Available to discuss anytime if helpful. You have my number.

John

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI)
Sent: Sunday, March 1, 2020 7:50 AM PST
To: Duchin, Jeff
CC: Bell, Michael MD (CDC/DDID/NCEZID/DHQP); Armstrong, Gregory (CDC/DDID/NCEZID/OD); Kay, Meagan
Subject: RE: exposures in hospitals

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Tom Clark is overall team lead,
John is leading the healthcare/infection control component
Best,
satish

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Sunday, March 1, 2020 10:42 AM
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Cc: Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: RE: exposures in hospitals

Thanks. Is John leading the entire field team response.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Sunday, March 1, 2020 7:27 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Subject: RE: exposures in hospitals

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

We will be available when you want to talk – we're in meeting w/ dan and Nancy now, have a follow-up at 11 to 12 est, but can work around to find the support you need. Of course, John and team on ground are going to be best positioned. Best,

satish

*Satish K. Pillai, MD MPH
Deputy Director, Division of Preparedness and Emerging Infections
CDR, U.S. Public Health Service
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention*

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Sunday, March 1, 2020 10:16 AM
To: Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Cc: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: Fwd: exposures in hospitals

We are having a very serious challenge related to hospital exposures and impact on the healthcare system. Would be great to have a call to discuss. Will be meeting with your team here this morning and then maybe we can chat after that.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: John B. Lynch <jblynch@uw.edu>
Sent: Sunday, March 1, 2020 7:09:22 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Kawakami, Vance <Vance.Kawakami@kingcounty.gov>
Subject: exposures in hospitals

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Good morning my friends,

Quick update:

- Large Evergreen exposure (you are well aware)
- Large Valley exposure (pretty sure you are aware). We developed a plan last night, gong to isolate as many HCW as possible, but can't keep ICU open without that exposed pool. So, for the moment, these medium risk individuals are at work and will be conducting 2x daily health screening. More to come today.

- HMC: last night I learned about a death in a pt presenting with sepsis from Life Center Kirkland earlier this week. My assumption is that he had COVID-19. As of 5 minutes ago, I have a symptomatic ICU physician who took care of him. We are working on mitigation today. I suspect that we will not be able to follow current CDC recs for exposed HCWs either. We are going to try to get swabs on the doc now and path is trying to get tissue to test.

As you might imagine, I am very concerned about the hospitals at this point.

Available to discuss anytime if helpful. You have my number.

John

From: Brostrom-Smith, Claire
Sent: Tuesday, March 3, 2020 12:53 PM PST
To: Kay, Meagan; Duchin, Jeff; Montgomery, Patricia A (DOH)
CC: Stone, Nimalie (CDC/DDID/NCEZID/DHQP); Lipton, Beth; Cole, Kate; Reddy, Sujan C. (CDC/DDID/NCEZID/DHQP)
Subject: Communications need

We have heard reports that LTCF are refusing to readmit patients who have been in hospitals that have cases of COVID-19. These patients are not **under investigation as a PUI** and have alternative diagnoses. This is concerning because our hospitals need to discharge these patients and free up beds.

At this time I know this occurring at Swedish Issaquah attempting discharge to Field Stone Memory Care is Issaquah.

Patty- Is this something that could be addressed during the LTCF Webinar tomorrow? Other ideas for communication.

Claire

Claire Brostrom-Smith, RN, MSN, CIC (she/her)
Program Manager, Healthcare-Associated Infections
Communicable Disease Epidemiology & Immunization Section
Claire.Brostrom-Smith@kingcounty.gov
Direct Line: 206-477-7753
Main Line: 206-296-4774
Fax: 206-296-4803



CONFIDENTIALITY NOTICE: This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential, proprietary, and/or privileged information protected by law. If you are not the intended recipient, you may not use, copy, or distribute this e-mail message or its attachments. If you believe you have received this e-mail message in error, please contact the sender by reply e-mail and destroy all copies of the original message.

NOTICE OF PUBLIC DISCLOSURE: RCW 42.56 says that this e-mail account is public domain. What you write is a public record.

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
Sent: Wednesday, March 4, 2020 6:40 AM PST
To: Duchin, Jeff
CC: Kay, Meagan; Clark, Thomas A. (CDC/DDID/NCIRD/DVD)
Subject: Re: Guidance regarding LIFECARE

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

What we discussed yesterday was that people with close contact met our definition of PUI (as relates to lifecare) and therefore we intend to test, but for other lifecare contacts, we let their physician decide.

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Wednesday, March 4, 2020 6:32:17 AM
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Cc: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: RE: Guidance regarding LIFECARE

Also notices top says in contact and bottom says close contact - I assume for outbreak setting we will say contact is adequate to test?

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Sent: Tuesday, March 3, 2020 5:08 PM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Subject: FW: Guidance regarding LIFECARE

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

From: Bogan, Sharon <Sharon.Bogan@kingcounty.gov>
Sent: Tuesday, March 3, 2020 4:17 PM
To: Stone, Nimalie (CDC/DDID/NCEZID/DHQP) <eiy2@cdc.gov>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>

Cc: Haynes, Benjamin (CDC/OD/OADC) <fxq2@cdc.gov>

Subject: RE: Guidance regarding LIFECARE

Yes, I need the appropriate contact for LifeCare. That said, our Call Center already has our updated document.

From: Stone, Nimalie (CDC/DDID/NCEZID/DHQP) <ey2@cdc.gov>

Sent: Tuesday, March 3, 2020 1:08 PM

To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Bogan, Sharon <Sharon.Bogan@kingcounty.gov>

Cc: Haynes, Benjamin (CDC/OD/OADC) <fxq2@cdc.gov>

Subject: RE: Guidance regarding LIFECARE

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Sharon, let me know if you need the appropriate points of contact for LifeCare.

Best,

Nimalie

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>

Sent: Tuesday, March 3, 2020 4:06 PM

To: Bogan, Sharon <Sharon.Bogan@kingcounty.gov>

Cc: Stone, Nimalie (CDC/DDID/NCEZID/DHQP) <ey2@cdc.gov>

Subject: RE: Guidance regarding LIFECARE

Sharon-some additional comments from Nimalie stone to consider. She also raises the good point that perhaps we should run this by the lifecare folks before going out

JJ

From: Bogan, Sharon <Sharon.Bogan@kingcounty.gov>

Sent: Tuesday, March 3, 2020 4:01 PM

To: Cole, Kate <kacole@kingcounty.gov>; Rao, Agam K. (CDC/DDID/NCEZID/DHCPP) <ige4@cdc.gov>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; French, Hannah <n-hfrench@kingcounty.gov>; Ross, Katie-PSB <Katie-PSB.Ross@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Haynes, Benjamin (CDC/OD/OADC) <fxq2@cdc.gov>; Karasz, Hilary <Hilary.Karas@kingcounty.gov>

Subject: Guidance regarding LIFECARE

All-

This is updated as of 1 pm with all CDC.

Sharon Bogan
Communications

(she/her pronouns)

Public Health – Seattle & King County

401 5th Avenue | Seattle, WA 98104

206.263.8770 | sharon.bogan@kingcounty.gov

[Facebook](#) | [Twitter](#) | [Public Health Insider](#) | [Newsletter](#)

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
Sent: Wednesday, March 4, 2020 6:28 AM PST
To: Duchin, Jeff
CC: Kay, Meagan; Bogan, Sharon; Haynes, Benjamin (CDC/OD/OADC)
Subject: Re: Testing at LifeCare

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Just forwarded to you under separate cover the bullets we helped Sharon Bogan draft yesterday about 1:00 Pm. These bullet points are being used by Call Center staff for responding to people connected to LifeCare. It is also being used by the person responding to Media questions that are specific to LifeCare recommendations.

Maybe we should use additional methods for getting the message out? Yield to our communications colleagues for advice on that

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Tuesday, March 3, 2020 10:07:13 PM

To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>

Cc: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>

Subject: Testing at LifeCare

<https://www.nytimes.com/2020/03/03/us/coronavirus-washington-death.html>



Coronavirus Deaths at Nursing Center Came Earlier Than Anyone Knew - The New York Times

The ire of the relatives of those inside was growing with each new revelation. "Because these are elderly and infirm people, it's like we are waiting for them to be picked off, one by one ...

www.nytimes.com

We really need to get better communication to families. If someone sent me a message that was shared with families, i can;t find it in my inbox - please resend.

Thanks _ jeff

Jeffrey S. Duchin, MD (he/him)

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County

Professor in Medicine, Division of Infectious Diseases, University of Washington

Adjunct Professor, School of Public Health

401 5th Ave, Suite 1250, Seattle, WA 98104

Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803

E-mail: jeff.duchin@kingcounty.gov

From: Cowgill, Karen
Sent: Wednesday, March 4, 2020 9:18 AM PST
To: Duchin, Jeff; Clark, Thomas A. (CDC/DDID/NCIRD/DVD)
CC: Kay, Meagan; Apa, James; Elsenboss, Carina; Hayes, Patty; Worsham, Dennis; Kirsten Vannice; Schrag, Stephanie (CDC/DDID/NCIRD/DBD)
Subject: Please Hold Back RE: King County covid proposal: seeking your rapid input

Hi Folks, just a note to indicate that this is a DRAFT document and we will get you an updated version for PHSKC input after we receive feedback from CDC colleagues this morning. This definitely is not ready for COMMS or upper administration talking points! Thanks for holding off for now.

Karen

Karen Cowgill, PhD, MSc (*she/her*)
COVID-19 Response Epidemiologist
Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Affiliate Assistant Professor in Global Health, University of Washington
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-3087; Fax: (206) 296-4803
E-mail: n-kcowgill@kingcounty.gov

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Wednesday, March 4, 2020 6:58 AM
To: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Apa, James <James.Apa@kingcounty.gov>; Elsenboss, Carina <Carina.Elsenboss@kingcounty.gov>; Hayes, Patty <Patty.Hayes@kingcounty.gov>; Worsham, Dennis <Dennis.Worsham@kingcounty.gov>
Subject: RE: King County covid proposal: seeking your rapid input

Thanks, Tom. I think somehow we would need to have this integrated into our surveillance formally and emergency assistance. Also need to better describe follow-up actions once positive and negative results are obtained.

Meagan – is there anyone on our end who can liaison with SFS to set it up?

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>

Sent: Wednesday, March 4, 2020 6:52 AM

To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Subject: FW: King County covid proposal: seeking your rapid input

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

FYI from SFS

From: Schrag, Stephanie (CDC/DDID/NCIRD/DBD) <zha6@cdc.gov>

Sent: Tuesday, March 3, 2020 11:26 PM

To: Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>

Cc: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Fleming, David <dfleming@path.org>

Subject: King County covid proposal: seeking your rapid input

Dan, Greg, Tom,

After much discussion with SFS team and advisors, Gates Ventures teams, and David Fleming (with context from Team B and Bob Pinner), attached please find a proposal Karen Cowgill and I drafted for immediate launch of a new public health surveillance activity in King County, WA. If we can get your concurrence and input on concerns/wishes by our morning in Seattle, we will then have Tom Clark share the ideas with Jeff Duchin to obtain his input. Once we have these inputs and concurrences, including comfort with King County and CDC as the named agencies and faces of this activity, we will proceed with seeking human subjects determinations at CDC and WA. Our view is this likely falls under public health surveillance/response activity and not human subjects research.

The hope on the part of the partners here is to launch ASAP (days at most from now).

Regarding the serosurvey ideas you sent yesterday, these are under discussion by the SFS team, but will be considered as a separate activity (don't fit directly on the proposed platform here).

Looking forward to your thoughts on the document,
Stephanie and Karen

Stephanie Schrag, D Phil
Epidemiology Team Lead
Respiratory Diseases Branch
MS H24-6, Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30329
404 639 4646 (office)
404 580 1960 (mobile)

From: Duchin, Jeff
Sent: Tuesday, March 3, 2020 7:30 AM PST
To: Dan Jernigan (dbj0@cdc.gov)
CC: Kathy Lofy (Kathy.Lofy@DOH.WA.GOV); Jernigan, John A.
Subject: Request for Flexibility in PPE and IC Guidance for HCW
Attachments: COVID-19 infection prevention in healthcare setting 3.2.2020_UW_NWHRN.pdf

Dear Dan,

On behalf of Dr. Kathy Lofy, Health Officer, Washington State Department of Health and myself, please see the attached letter from our main front line acute care hospital system responding to the COVID-19 outbreak in King County, Washington. Even the relatively limited number of cases at this time, the hospitals are feeling they cannot comply with the requirement for respirator use for the care of suspected and confirmed COVID-19 cases due to supply constraints which are expected to worsen. In addition, the recommendation to furlough asymptomatic HCW exposed to COVID-19 cases would require them to curtail critical care services.

UW Medicine consists of University of Washington Medical Center, Harborview Medical Center, and Valley Medical Center with Harborview Medical Center serving as the King County Disaster Control Hospital and designated Ebola Treatment Facility. UW Medicine admits more than 63,000 patients per year and provides outpatient care for more than 1.3 million patients each year at its 14 UW Neighborhood Clinics and its many other primary and specialty care clinics. Seattle Cancer Care Alliance is a collaborative partnership of UW Medicine, Fred Hutchinson Cancer Research Center, and Seattle Children's Hospital.

The Northwest Healthcare Response Network is our regional healthcare coalition comprised of 70% of the state's hospital beds, nearly 3,000 healthcare organizations and 178,000 healthcare workers and is a key partner with Public Health in coordinating and implementing public health and healthcare system emergency response activities.

Our healthcare system colleagues are committed to providing the highest level of care and safety for both patients and healthcare providers and feel that guidance reflecting real world conditions would be more conducive that goal than guidance that is not possible to comply with.

Thank you for your consideration of this request for flexibility in this critical guidance.

Sincerely,

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

March 2, 2020

Kathy Lofy, MD
State Health Officer
Washington State Department of Health

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Diseases Epidemiology & Immunization Section
Public Health – Seattle and King County

Dear Drs. Lofy and Duchin,

We write to request your support in changing the Interim Infection Prevention and Control Recommendations for Patients with suspected or confirmed Coronavirus Disease 2019 (COVID-19) to Standard, Droplet, and Contact Precautions to include the use of masks, eye protection, gown, and gloves while using airborne precautions with use of respirators when performing aerosol-generating procedures as recommended by the World Health Organization, Infection Prevention and Control Canada, and other countries.

COVID-19 is transmitted person to person through respiratory droplets created when individuals cough or sneeze similar to other respiratory viruses. Recent community cases of COVID-19 have not had relevant travel history nor known contact with an individual with confirmed COVID-19. Given the presence of local community transmission of COVID-19 and continued transmission of other respiratory viruses such as influenza, it is difficult to clinically identify individuals with potential COVID-19 from an individual without COVID-19 when they present with fever and respiratory symptoms.

Given the lack of airborne isolation rooms in clinics and the limited number of airborne isolation rooms in hospitals combined with shortages in personal protective equipment (PPE), we cannot manage the increasing numbers of patients presenting with possible COVID-19 and are creating more risk for our healthcare workers given the complexities of the current CDC recommendations. It will be safer for our healthcare workers to consistently use Standard, Droplet, and Contact Precautions for all patients presenting with fever and respiratory symptoms.

While we support the initial approach with Standard, Contact, and Airborne precautions with eye protection for a novel pathogen with few potential cases that we identify from an epidemiology standpoint, we are in the midst of a public health crises with anticipated large numbers of patients that will overwhelm our health systems. **We urge you to focus on how SARS-CoV-19 is transmitted similarly to**

other respiratory viruses and change the recommendations to use of Standard, Droplet, and Contact Precautions reserving airborne isolation and use of respirators for aerosol-generating procedures as recommended by WHO, Canada, and other countries.

In addition, we request a change in guidance requiring keeping asymptomatic exposed healthcare workers out of work for 14 days from last exposure as we are rapidly depleting our workforce with this recommendation. **We urge you to consider allowing asymptomatic healthcare workers to continue to work while doing symptom self-monitoring as we do with other respiratory viruses including influenza.**

Thank you for your consideration,



Timothy H. Dellit, MD
Chief Medical Officer, UW Medicine
Vice President for Medical Affairs
University of Washington
President, UW Physician



Onora Lien
Executive Director
Northwest Healthcare Response Network



Nancy E. Davidson, MD
President & Executive Director, Seattle Cancer Care Alliance
Senior Vice President and Member, Clinical Research Division, Fred Hutchinson Cancer Research Center
Head, Department of Medicine, Division of Medical Oncology, University of Washington
Raisbeck Endowed Chair for Collaborative Research

From: Bogan, Sharon
Sent: Tuesday, March 3, 2020 1:01 PM PST
To: Cole, Kate; akrao@cdc.gov; jqj9@cdc.gov; French, Hannah; Ross, Katie-PSB; Duchin, Jeff; Kay, Meagan; Haynes, Benjamin (CDC/OD/OADC); Karasz, Hilary
Subject: Guidance regarding LIFECARE
Attachments: LIfeCare guidance 3.3. 1 pm version.docx

All-

This is updated as of 1 pm with all CDC.

Sharon Bogan
Communications
(she/her pronouns)
Public Health – Seattle & King County
401 5th Avenue | Seattle, WA 98104
206.263.8770 | sharon.bogan@kingcounty.gov
[Facebook](#) | [Twitter](#) | [Public Health Insider](#) | [Newsletter](#)

FOR LIFECARE

- **If you have been in contact with someone from Lifecare while they were sick, self-quarantine for 14 days and self-monitor your symptoms.**

If you are a healthcare worker at LifeCare.

- Healthcare provider are needed to provide essential services for ill people. We support healthcare organizations making their own guidance to ensure continued care.

- **If you have been at LifeCare, but haven't had contact with someone while they were ill, you do not need to self-quarantine at this time. You do need to:**

- Monitor your symptoms,
- Practice good hygiene.
- If you develop symptoms, isolate yourself at home immediately and call your healthcare provider.

- **Who should be tested?**

- Public health is working to test symptomatic healthcare workers of LifeCare who have illness and residents of LifeCare who have illness.
- People who are ill and have had close contact with a resident of LifeCare, immediately self-quarantine, call your healthcare provider by phone before coming in AND contact Public Health so testing can be started.
- For those who have been inside LifeCare, but without close contact with a resident, if you start to feel ill, contact your healthcare provider immediately by phone to report your symptoms. Let your healthcare provider know you have been inside LifeCare. Your provider will determine whether testing is recommended.

- **What is considered close contact of a person at LifeCare?**

Close contact is:

Being within approximately 6 feet of an ill person for a prolonged period of time such as caring for or visiting the patient; sitting within 6 feet of the patient in a healthcare waiting area or room, or exposed to a patients'

respiratory secretions such as being coughed on or contact with used tissues with a bare hand.

- **What is happening with my family member at LifeCare?**

We are working with LifeCare so that your family members are cared for:

- Monitoring for progression of illness
- Implementing infection control to prevent spread to others
- For anyone who is ill at LifeCare, we are managing and treating them as if they have COVID-19.
- For all ill patients, we are providing medical care they need
- We are monitoring all patients closely, ill or not. And if residents develop symptoms that need higher level of care, we are transporting them to a hospital for care.

We understand how unsettling this can be at this time. LifeCare and Public Health will do everything we can to ensure the care of your loved ones.

From: Berliner, Debra
Sent: Wednesday, March 4, 2020 2:17 PM PST
To: Duchin, Jeff; Kay, Meagan; Li-Vollmer, Meredith; tnc4@cdc.gov
CC: Rigel, Sara; Lewis, James
Subject: Seeking Approval Today: Post Press Conference Messages for Schools
Attachments: FOR REVIEW -- school QA re mitigation measures.docx

Great job on the press conference. As I mentioned earlier, we want to have messages ready to go because we expect an onslaught of calls and emails from schools about the new recommendations (and why we're not recommending closure).

Can you please review these messages, make any changes, and approve? There are a few items I've highlighted in yellow that I need help answering. Jeff, Meagan, and Tom – after you chime in, I can work with Meredith on the final wording. I will take your advice on whether we should send a direct message out to all schools or simply have these on hand when we need to answer questions. If the former, I will add an introductory statement that echoes existing approved messages about recommended mitigation measures.

Thank you!
Debra

Debra Berliner, MPH (she/her/hers)
Immunization Educator Consultant, Immunization Program
Public Health - Seattle & King County
401 5th Ave, Ste 1250, Seattle, WA 98104
P (206) 263-4161 | F (206) 296-4803

**DRAFT Q&A FOR CHILDCARE AND SCHOOLS
MEASURES TO MINIMIZE THE SPREAD OF COVID-19 IN THE COMMUNITY**

Why is Public Health recommending that employers telecommute but not recommending that childcare and K-12 schools close?

Childcare and K-12 schools are unique settings for several reasons:

- When it comes to COVID-19, children appear to be quite resilient. Most confirmed cases of COVID-19 reported from China have occurred in adults. COVID-19 infection in children tends to present more like a common cold or a mild fever. Limited information published about past outbreaks of other coronaviruses, like Severe Acute Respiratory Syndrome (SARS-CoV) and Middle East respiratory syndrome (MERS-CoV), indicate that infection among children was relatively uncommon.
- When schools closed during the H1N1 influenza pandemic, we learned that many children still gathered in group settings and still had exposure to one another.
- We know that schools and childcare are doing the important work of educating our children. We don't want to disrupt that unless there are known coronavirus exposure risks.
- School and childcare closures have other significant impacts on working parents. Closures can be disruptive and costly for families. Identifying and paying for alternative childcare can be prohibitively expensive for families, and many students rely on schools for free and reduced meals and other vital resources.

Bearing in mind these considerations, we know that school districts and childcare institutions act with extra special caution in the interest of protecting children. Each school and childcare knows its community best and, ultimately, has the discretion and the support of Public Health to determine the approach for their community.

Is Public Health recommending that schools cancel school assemblies and other school events? If not, why not?

At this time, Public Health is not recommending that schools cancel assemblies and other group gatherings of children. Children are naturally social and interact throughout the day: in classrooms, in hallways, and at lunchtime. Assemblies don't substantially increase the level of interaction between students to merit cancellation.

Is Public Health recommending cancellation of community events that involve family as spectators or participants, like school sports games and PTA meetings?

Since adults are more at risk of serious illness from COVID-19, when possible, it's a good idea for schools to practice social distancing by postponing unessential community events involving adults. In particular, we recommend that people over age 60, those with underlying health conditions like heart disease, lung disease, or diabetes stay home and away from large groups of people as much as possible. There is not much information about COVID-19 in pregnancy, so we suggest pregnant women also take precautions recommended for other high-risk groups.

If children are spending time at school and become infected with COVID-19, they're likely to have mild illness. But won't an infected child potentially put their family members at risk, especially household members with immune compromising conditions?

We don't fully know the role children play in transmitting illness. **NEED HELP**

My child is immune compromised or has an underlying health condition. Should they attend school?

Individuals with underlying health issues should talk to their healthcare provider to develop a plan based on their specific health conditions. If you and your healthcare provider determine that your child should stay home, we encourage you to work with your school to set up a distance learning agreement, if possible. We strongly encourage schools to support students to stay on track with academic requirements while learning from home, and not to not penalize students who are unable to attend school or participate in distance learning.

I am a parent of a healthy child, but I am not comfortable with them attending school at this time.

Meredith -- need help here.

What about administrators or teachers who are pregnant, over 60 years of age, or those who have preexisting health conditions?

Staff in these higher vulnerability categories are encouraged to work from home, if possible, or use leave benefits. We encourages school districts to support staff in these higher risk categories by:

- Using telecommuting options whenever possible.
- Maximizing flexibility in sick leave benefits.

We understand that absences may significantly affect the school's capacity to continue normal operations, and we encourage schools to use their discretion when making choices about operations.

Why are other employees in other settings advised to telecommute, while teachers and school staff are encouraged to attend work?

Meredith -- need help here.

Under what circumstances would Public Health recommend school closures?

At this time, Public Health would likely recommend a closure if someone with a laboratory-confirmed COVID-19 case spent time in a school and had contacts with other individuals in the school setting while ill. In this situation, Public Health will work with school leadership to consider the duration of the closure and to determine other steps that should be taken to limit spread.

If our school is closed because of a confirmed case, how long will the closure last?

The length of the closure will be determined based on multiple factors, including the number of laboratory-confirmed cases and the number and types of exposure that other individuals in the school may have had. Public Health may recommend closure for anywhere from a few days up to a few weeks, depending on the circumstances.

Will public health notify our school if there is a confirmed case?

Yes, if Public Health is aware of a case in a King County school, we will contact key school personnel, such as the school nurse, principal, or district leadership.

What should we do if a student or staff member becomes ill?

Any person who exhibits flu-like symptoms (primarily fever, cough and shortness of breath) should not be at work or school. Sick individuals should stay home and away from others and contact their healthcare provider. The healthcare provider can assess the individual's risk and determine whether they should be tested for novel coronavirus.

What happens if novel coronavirus continues to spread?

If novel coronavirus continues to spread, Public Health may require event cancellations and closures of schools and child care centers. However, the decision to implement these requirements will not be made lightly and will only be implemented in the case of widespread illness.

What else can our school do to protect students and staff from COVID-19? (NOTE – this is from the DOH website)

Schools do not need to take any special precautions beyond what is normally recommended to prevent the spread of viruses in schools. You can help students and staff reduce their risk for getting and spreading viral respiratory infections, including the flu and the common cold, by encouraging them to take simple steps which will also prevent COVID-19. These include:

- Staying home when they are sick.
- Frequent hand washing with soap and water for at least 20 seconds, especially after going to the bathroom, before eating, and after they blow their nose. Help young children do the same. If hands are visibly dirty, use soap and water to clean hands.
- If soap and water are not readily available, using an alcohol-based hand sanitizer with at least 60% alcohol.
- Advising persons to avoid touching their eyes, nose, and mouth with unwashed hands.
- Following the school's routine cleaning and disinfection program. Emphasizing to clean and disinfect frequently touched objects and surfaces.
- Covering coughs or sneezes with a tissue, then throwing the tissue in the trash and cleaning hands with soap and water or hand sanitizer (if soap and water are not readily available).
- Urging students and staff to get a flu shot during the flu season.
- Providing adequate supplies for good hygiene, including clean and functional handwashing stations, soap, paper towels, and alcohol-based hand sanitizer.

Cleaning and Disinfecting Procedures

Special processes beyond routine cleaning are not necessary nor recommended to slow the spread of respiratory illness. Schools should follow standard procedures for cleaning with third party certified “green” cleaners and disinfecting with an Environmental Protection Agency (EPA) registered disinfectant with a claim for human coronaviruses. Typically, this means daily sanitizing surfaces and objects that are touched often, such as bathrooms, water coolers, desks, countertops, doorknobs, computer keyboards, hands-on learning items, faucet handles, phones and toys.

Disinfecting is the responsibility of school custodial staff. They are trained to use disinfectants in a safe and effective manner and to clean up potentially infectious materials and body fluid spills – blood, vomit, feces, and urine. Contact your custodian or school nurse if students are ill and your classroom needs cleaning and disinfection.

Clean the surface first to remove all organic matter. Custodial staff should follow the disinfectant manufacturer’s instructions for use including:

- Using the proper concentration of disinfectant
- Allowing the required wet contact time
- Paying close attention to hazard warnings and instructions for using personal protective items such as gloves and eye protection

- Using disinfectants in a sufficiently ventilated space
Schools and districts must have a Safety Data Sheet (SDS) for each chemical used in the school.

From: Bogan, Sharon
Sent: Tuesday, March 3, 2020 10:14 PM PST
To: Duchin, Jeff; Karasz, Hilary; Heather Thomas; Lofy, Kathy H (DOH); kevin.wickersham@doh.wa.gov; jwiesman@doh.wa.gov; Hayes, Patty; Shawn Frederick; Christopher Spitters [External]
CC: Apa, James; bhaynes@cdc.gov; Kay, Meagan; Worsham, Dennis
Subject: COVID 19 community mitigation draft 3-3.docx KEY MESSAGES
Attachments: DRAFT COVID 19 community mitigation_key messages_03-03-20.docx

Here are the key messages that we would like to use for press release, talking points etc.
Please use this version for edits and approvals.

With appreciation,

Sharon Bogan
Communications
(she/her pronouns)
Public Health – Seattle & King County
401 5th Avenue | Seattle, WA 98104
206.263.8770 | sharon.bogan@kingcounty.gov
[Facebook](#) | [Twitter](#) | [Public Health Insider](#) | [Newsletter](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Tuesday, March 3, 2020 10:10 PM
To: Karasz, Hilary <Hilary.Karasz@kingcounty.gov>; Heather Thomas <hthomas@snohd.org>; Lofy, Kathy H (DOH) <Kathy.Lofy@DOH.WA.GOV>; kevin.wickersham@doh.wa.gov; Bogan, Sharon <Sharon.Bogan@kingcounty.gov>; jwiesman@doh.wa.gov; Hayes, Patty <Patty.Hayes@kingcounty.gov>; Shawn Frederick <sfrederick@snohd.org>; Christopher Spitters [External] <christopher.spitters@comcast.net>
Cc: Apa, James <James.Apa@kingcounty.gov>; bhaynes@cdc.gov; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Worsham, Dennis <Dennis.Worsham@kingcounty.gov>
Subject: Re: COVID 19 community mitigation draft 3-3.docx

please send word doc and ill review in am

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Karasz, Hilary <Hilary.Karasz@kingcounty.gov>
Sent: Tuesday, March 3, 2020 7:05 PM
To: Heather Thomas <hthomas@snohd.org>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Lofy, Kathy H (DOH) <Kathy.Lofy@DOH.WA.GOV>; kevin.wickersham@doh.wa.gov <kevin.wickersham@doh.wa.gov>; Bogan, Sharon <Sharon.Bogan@kingcounty.gov>; jwiesman@doh.wa.gov <jwiesman@doh.wa.gov>; Hayes, Patty <Patty.Hayes@kingcounty.gov>; Shawn Frederick <sfrederick@snohd.org>; Christopher Spitters [External] <christopher.spitters@comcast.net>
Cc: Apa, James <James.Apa@kingcounty.gov>; bhaynes@cdc.gov <bhaynes@cdc.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Worsham, Dennis <Dennis.Worsham@kingcounty.gov>
Subject: Re: COVID 19 community mitigation draft 3-3.docx

Copying Meagan and Dennis on this as well.

Get [Outlook for iOS](#)

From: Heather Thomas <hthomas@snohd.org>
Sent: Tuesday, March 3, 2020 5:36:41 PM
To: Karasz, Hilary <Hilary.Karasz@kingcounty.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Lofy, Kathy H (DOH) <Kathy.Lofy@DOH.WA.GOV>; kevin.wickersham@doh.wa.gov <kevin.wickersham@doh.wa.gov>; Bogan, Sharon <Sharon.Bogan@kingcounty.gov>; jwiesman@doh.wa.gov <jwiesman@doh.wa.gov>; Hayes, Patty <Patty.Hayes@kingcounty.gov>; Shawn Frederick <sfrederick@snohd.org>; Christopher Spitters [External] <christopher.spitters@comcast.net>
Cc: Apa, James <James.Apa@kingcounty.gov>; bhaynes@cdc.gov <bhaynes@cdc.gov>
Subject: RE: COVID 19 community mitigation draft 3-3.docx

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks; I have forwarded to Shawn and Chris. Also copied them on this thread for future communication.

Heather Thomas | Public & Government Affairs Manager | Snohomish Health District
3020 Rucker Avenue, Suite #306 | Everett, WA 98201 | **p: 425.339.8688** | c: 425.508.4980

Public Health: Always working for a safer & healthier Snohomish County

NOTICE: All emails and attachments sent to and from the Snohomish Health District are public records and may be subject to disclosure pursuant to the Public Records Act (RCW 42.56).

From: Karasz, Hilary [<mailto:Hilary.Karasz@kingcounty.gov>]
Sent: Tuesday, March 3, 2020 5:24 PM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Lofy, Kathy H (DOH) <Kathy.Lofy@DOH.WA.GOV>; kevin.wickersham@doh.wa.gov; Bogan, Sharon <Sharon.Bogan@kingcounty.gov>; jwiesman@doh.wa.gov; Hayes, Patty <Patty.Hayes@kingcounty.gov>
Cc: Heather Thomas <hthomas@snohd.org>; Apa, James <James.Apa@kingcounty.gov>; bhaynes@cdc.gov
Subject: COVID 19 community mitigation draft 3-3.docx

These are the community mitigation strategies we discuss this afternoon. We have reviewed them together several times, but Jeff has not noodled with them. These are the measures we will announce at the presser tomorrow. I think Chris Spitters was looking to see these as well but I don't have his email. Please forward.

Hilary Karasz, PhD (she/her)

Communications

Public Health – Seattle & King County

401 5th Avenue, Suite 1300

Seattle, WA 98104

206-263-8705

Subscribe to the *PH Insider*! <https://publichealthinsider.com/subscribe/>

From: Lofy, Kathy H (DOH)
Sent: Tuesday, March 3, 2020 6:56 PM PST
To: Duchin, Jeff; Clark, Thomas A. (CDC/DDID/NCIRD/DVD); Kay, Meagan; Lindquist, Scott W (DOH); Wiesman, John (DOH); Hensley, Joni L (DOH)
Subject: Case and contact Guidance
Attachments: Case One-pager 20200303.docx, Contact One-pager 20200303.docx

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Attached are the current drafts of the case and contact guidance.

Kathy Lofy, MD

Gender Pronouns: she/her_

State Health Officer

Office of the Secretary

Washington State Department of Health

kathy.lofy@doh.wa.gov

360-236-4030 | www.doh.wa.gov



DRAFT KEY MESSAGES ABOUT MEASURES TO MINIMIZE THE SPREAD OF COVID-19 IN THE COMMUNITY

3/3/20

Public Health – Seattle & King County is taking proactive steps to protect the health of our community by making recommendations that are meant to slow the spread of the novel coronavirus (COVID-19) in our community and reduce the number of people infected.

We understand these actions will have a tremendous impact on the lives of people in our community. Public Health is making these recommendations in consultation with Centers for Disease Control and Prevention (CDC) based on the best information we have to protect the public's health. This is a critical moment in the growing outbreak of COVID-19 in King County when such measures can potentially impact the spread of the disease.

PUBLIC HEALTH RECOMMENDATIONS

Public Health is recommending, but not requiring, the following steps:

Guidance for people at higher risk for severe COVID-19 illness

Public Health recommends that people at higher risk of severe illness should stay home and away from large groups of people as much as possible, including public places with lots of people and large gatherings where there will be close contact with others. This includes concert venues, conventions, sporting events, and crowded social gatherings.

People at higher risk include people:

- Over 60 years of age
- With underlying health conditions including include heart disease, lung disease, or diabetes
- With weakened immune systems
- Who are pregnant

Caregivers of children with underlying health conditions should consult with healthcare providers about whether their children should stay home. Anyone who has questions about whether their condition puts them at risk for novel coronavirus should consult with their healthcare providers.

People who are not in these higher risk groups should continue their normal daily activities and routines.

Workplaces and businesses

All employees should work from home if they are able.

Employers should take steps to make it more feasible for their employees to work in ways that minimize close contact with large numbers of people.

Employers should:

- Maximize telecommuting options for as many employees as possible.
- Urge employees to stay home when they are sick and maximize flexibility in sick leave benefits.

- Consider staggering start and end times to reduce large numbers of people coming together at the same time.

Event and community gathering considerations

If you can feasibly avoid bringing large groups of people together, consider postponing events and gatherings.

If you can't avoid bringing groups of people together:

- Urge anyone who is sick to not attend.
- Encourage those who are at higher risk for coronavirus to not attend.
- Try to find ways to give people more physical space so that they aren't in close contact as much as possible.
- Encourage attendees to maintain good healthy habits, such as frequent hand washing.
- Clean surfaces with standard cleaners.

Schools:

Public Health is not recommending closing schools at this time unless there has been a confirmed case in your school. The reason we are not recommending school closures at this time is because children have not been shown to be a high risk group for serious illness from this virus. In addition, when some schools briefly closed during the H1N1 influenza pandemic, we learned that many children still gathered in group settings and still had exposure to one another. As much as possible, children should be allowed to carry on with their education and normal activities.

Public Health –Seattle & King County also respects an individual school's decisions about closures or postponement of activities as each school knows the needs of their community best.

Some children have underlying health conditions, such as weakened immune systems, that put them at higher risk. Caregivers of children with underlying health conditions should consult with healthcare providers about whether their children should stay home.

For people who are sick:

Stay home when you are sick. Do not go out in public when you are sick.

Adults with fever AND cough OR shortness of breath should stay home for 10 days or until symptoms have been resolved for 72 hours, whichever is longer.

Avoid medical settings in general unless necessary. If you are ill in any way call your doctor's office first before going in.

For the general public:

- Even if you are not ill, avoid visiting hospitals, long term care facilities or nursing homes to the extent possible. If you do need to visit one of these facilities limit your time there and keep 6 feet away from patients.
- **Do not go to the emergency room unless essential.** Emergency rooms need to be able to serve those with the most critical needs. If you have symptoms like cough, fever, or other respiratory problems, contact your regular doctor first.
- Stay home when sick.
- Practice excellent personal hygiene habits, including washing your hands with soap and water frequently, coughing into a tissue or your elbow, and avoid touching your eyes, nose, or mouth.
- Stay away from people who are ill, especially if you are at higher risk for coronavirus.
- Clean frequently touched surfaces and objects (like doorknobs and light switches). Regular household cleaners are effective.
- Avoid touching your eyes, nose, and mouth unless you've just washed your hands.
- Get plenty of rest, drink plenty of fluids, eat healthy foods, and manage your stress to keep your immunity strong
- Stay informed. Information is changing frequently. Check and subscribe to Public Health's website (www.kingcounty.gov/COVID) or blog (www.publichealthinsider.com).

How the decision to issue these recommendations were made

We recognize that we are the first in the nation to issue such recommendations, and the decision was not made lightly. It was made in consultation with the CDC, based on the rising number of cases in our community and the importance of taking these actions now to reduce further transmission.

What to do if you were potentially exposed to someone with confirmed coronavirus disease 2019 (COVID-19)

If you think you have been exposed to someone with laboratory-confirmed COVID-19, follow the steps below to monitor your health and avoid spreading the disease to others if you get sick.

What is coronavirus disease 2019 (COVID-19)?

COVID-19 is a respiratory disease caused by a new virus called SARS-CoV-2. The most common symptoms of the disease are fever, cough, and shortness of breath. Most people with COVID-19 will have mild disease but some people will get sicker and may need to be hospitalized.

How do I know if I was exposed?

You generally need to be in close contact with a sick person to get infected. Close contact includes:

- Living in the same household as a sick person with COVID-19,
- Caring for a sick person with COVID-19
- Being within 6 feet of a sick person with COVID-19 for about 10 minutes, OR
- Being in direct contact with secretions from a sick person with COVID-19 (e.g., being coughed on, kissing, sharing utensils, etc.)

If you have not been in close contact with a sick person with COVID-19, you are considered to be at low risk for infection. You can continue to go to work and school, but should monitor your health for 14 days and stay away from other if you get sick.

What should I do if I am a close contact to someone with COVID-19 but am not sick?

You should monitor your health for fever, cough and shortness of breath during the 14 days after the last day you were in close contact with the sick person with COVID-19. You should also not go to work or school, and should avoid public places for 14 days.

What should I do if I am a close contact to someone with COVID-19 and get sick?

If you get sick with fever, cough or shortness of breath (even if your symptoms are very mild), you should stay at home and away from other people.

If you have any of the following high risk conditions—age 60 years or over, are pregnant, or have medical conditions—contact your physician’s office and tell them that you were exposed to someone with COVID-19. They may want to monitor your health more closely or test you for COVID-19.

If you do not have a high risk condition but want medical advice, you can call your healthcare provider and tell them that you were exposed to someone with COVID-19. Your healthcare provider can help you decide if you need to see a healthcare provider. There are currently no medications to treat COVID-19.

If you have a medical emergency and need to call 911, notify the dispatch personnel that you may have been exposed to COVID-19. If possible, put on a facemask before emergency medical services arrive or immediately after they arrive.

What to do if you have coronavirus disease 2019 (COVID-19) or think you may have COVID-19

If you are sick with COVID-19 or have symptoms consistent with COVID-19, follow the steps below to help prevent the disease from spreading to people in your home and community.

Symptoms of COVID-19

The most common symptoms of COVID-19 are fever, cough and shortness of breath. If you are experiencing fever with either cough or shortness of breath, you might have COVID-19. You can contact your doctor to see if you need to be tested. If you cannot be tested or if you have tested positive for COVID-19, you should follow the below instructions.

Stay home except to get medical care

You should restrict activities outside your home, except for getting medical care. Do not go to work, school, or public areas. Avoid using public transportation, ride-sharing, or taxis.

Separate yourself from other people and animals in your home

People: As much as possible, you should stay in a specific room and away from other people in your home. Also, you should use a separate bathroom, if available.

Animals: Do not handle pets or other animals while sick. See [COVID-19 and Animals](#) for more information.

Call ahead before visiting your doctor

If you have a medical appointment, call the healthcare provider and tell them that you have or may have COVID-19. This will help the healthcare provider's office take steps to keep other people from getting infected or exposed.

Wear a facemask

You should wear a facemask when you are around other people (e.g., sharing a room or vehicle) or pets and before you enter a healthcare provider's office. If you are not able to wear a facemask (for example, because it causes trouble breathing), then people who live with you should not stay in the same room with you, or they should wear a facemask if they enter your room.

Cover your coughs and sneezes

Cover your mouth and nose with a tissue when you cough or sneeze. Throw used tissues in a lined trash can; immediately wash your hands with soap and water for at least 20 seconds or clean your hands with an alcohol-based hand sanitizer that contains at least 60 to 95% alcohol, covering all surfaces of your hands and rubbing them together until they feel dry. Soap and water should be used preferentially if hands are visibly dirty.

Avoid sharing personal household items

You should not share dishes, drinking glasses, cups, eating utensils, towels, or bedding with other people or pets in your home. After using these items, they should be washed thoroughly with soap and water.

Clean your hands often

Wash your hands often with soap and water for at least 20 seconds. If soap and water are not available, clean your hands with an alcohol-based hand sanitizer that contains at least 60% alcohol, covering all surfaces of your hands and rubbing them together until they feel dry. Soap and water should be used preferentially if hands are visibly dirty. Avoid touching your eyes, nose, and mouth with unwashed hands.

Clean all “high-touch” surfaces every day

High touch surfaces include counters, tabletops, doorknobs, bathroom fixtures, toilets, phones, keyboards, tablets, and bedside tables. Also, clean any surfaces that may have blood, stool, or body fluids on them. Use a household cleaning spray or wipe, according to the label instructions. Labels contain instructions for safe and effective use of the cleaning product including precautions you should take when applying the product, such as wearing gloves and making sure you have good ventilation during use of the product.

Monitor your symptoms

Seek prompt medical attention if your illness is worsening (e.g., difficulty breathing). **Before** seeking care, call your healthcare provider and tell them that you have, or are being evaluated for, COVID-19. Put on a facemask before you enter the facility. These steps will help the healthcare provider’s office to keep other people in the office or waiting room from getting infected or exposed.

Ask your healthcare provider to call the local or state health department. Persons who are placed under active monitoring or facilitated self-monitoring should follow instructions provided by their local health department or occupational health professionals, as appropriate.

If you have a medical emergency and need to call 911, notify the dispatch personnel that you have, or are being evaluated for COVID-19. If possible, put on a facemask before emergency medical services arrive.

Discontinuing home isolation

If you have tested positive for COVID-19, you should remain under home isolation precautions for 10 days **OR** 72 hours after resolution of fever and symptoms, **whichever is longer**. You may be infectious to others for longer than this time period so you should wash your hands frequently and cover your coughs and sneezes for at least two more weeks after discontinuing home isolation.

If you have fever with cough or shortness of breath but have not been confirmed to have COVID-19, you should stay home away from others until 72 hours after resolution of fever and improvement of symptoms.

Additional information for your household members, intimate partners, and caregivers is available at:

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-prevent-spread.html>

From:
Sent: Tuesday, March 3, 2020 6:41 PM PST
To: Kathy Lofy (Kathy.Lofy@DOH.WA.GOV); Clark, Thomas A. (CDC/CCID/NCIRD)
Subject: Upcoming CDC criteria for release from

Afebrile + symptoms improving for some minimum duration (they may go with 72 hrs but we can do 7days)

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Duchin, Jeff
Sent: Saturday, February 29, 2020 9:49 PM PST
To: Bell, Michael MD (CDC/DDID/NCEZID/DHQP)
CC: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI)
Subject: Re: infection prevention at HD facility

Thanks, Michael.
Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>
Sent: Saturday, February 29, 2020 7:44 PM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Subject: Re: infection prevention at HD facility

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Jeff;

I agree that the best approach for an a symptomatic contact is to have them keep a mask on for the next few dialysis sessions, from arrival until they leave the building. Adherence to environmental hand hygiene should be emphasized.

If the patients become symptomatic, it would be best to have them be the last patients of the day, and as you note, staff would use PPE according to PUI recs. I would want to have them in a separated chair away from others, e.g., like you might use for a HBV Ag positive person.

-Mike

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 29, 2020 8:04 PM
To: Bell, Michael MD (CDC/DDID/NCEZID/DHQP)
Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI)
Subject: Fwd: infection prevention at HD facility

Michael - can you please review my response to this question about IC for dialysis and let me know if there are additions/corrections.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health

401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov
From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 29, 2020 4:48:27 PM
To: Limaye, Ajit <ALimaye@medicine.washington.edu>; Jeff Duchin <Jeff.Duchin@METROKC.GOV>
Cc: Watnick, Suzanne11 <suzanne.watnick@nwkidney.org>
Subject: Re: infection prevention at HD facility

Hi, Agit. If the patient was a close contact while the case was symptomatic they would be considered at medium risk but there is no clear classification for this situation. We can run it by CDC. Medium risk gets home isolation. If they need dialysis, masking the patient for the entire time and using POR for PUI would be ideal. CDC recognizes that not all healthcare settings can meet those IC/PPE criteria and that if not, standard, contact and droplet with eye protection is acceptable.

If the patient with close contact develops fever and respiratory symptoms, they would be considered a person under investigation and should be treated with infection control precautions according to the CDC guidance for evaluating PUI.

Jeff

Jeffrey S. Duchin, MD

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov
From: Limaye, Ajit <ALimaye@medicine.washington.edu>
Sent: Saturday, February 29, 2020 3:55 PM
To: Duchin, Jeff; Jeff Duchin
Cc: Watnick, Suzanne11
Subject: infection prevention at HD facility

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Jeff,

My colleague Dr. Watnick (CMO Northwest Kidney Centers) and I have a time-sensitive issue regarding precautions for patients who underwent hemodialysis in immediate proximity (adjoining HD station within 6 feet) and during the time of clinical symptoms of the index case of CoV that you discussed at today's press conference (from Kirkland NKC Dialysis Center). These patients are due for HD on Monday, we would appreciate your guidance about precautions/work-up, etc. Thanks, I'm pasting contact info for Suzanne below.

suzanne.watnick@nwkidney.org
(503) 329-9820

Ajit P. Limaye, M.D.

Professor of Medicine & Laboratory Medicine
Director, Solid-Organ Transplant Infectious Disease Program
Department of Medicine | UW Medicine
1959 N.E. Pacific St. | Box 356174 | Seattle, WA 98195-6174
OFFICE: 206.598.1041 EMAIL: limaye@uw.edu

Pronouns | He, Him, His

Privileged, confidential or patient identifiable information may be contained in this message. This information is meant only for the use of the intended recipients. If you are not the intended recipient, or if the message has been addressed to you in error, do not read, disclose, reproduce, distribute, disseminate or otherwise use this transmission. Instead, please notify the sender by reply e-mail, and then destroy all copies of the message and any attachments.

From: Duchin, Jeff
Sent: Sunday, March 1, 2020 7:16 AM PST
To: Bell, Michael MD (CDC/DDID/NCEZID/DHQP); Dan Jernigan (dbj0@cdc.gov);
Armstrong, Gregory (CDC/DDID/NCEZID/OD); Pillai, Satish K. (CDC/DDID/NCEZID/DPEI)
CC: Kay, Meagan
Subject: Fwd: exposures in hospitals

We are having a very serious challenge related to hospital exposures and impact on the healthcare system. Would be great to have a call to discuss. Will be meeting with your team here this morning and then maybe we can chat after that.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov
From: John B. Lynch <jblynch@uw.edu>
Sent: Sunday, March 1, 2020 7:09:22 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>;
Kawakami, Vance <Vance.Kawakami@kingcounty.gov>
Subject: exposures in hospitals

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Good morning my friends,
Quick update:

- Large Evergreen exposure (you are well aware)
- Large Valley exposure (pretty sure you are aware). We developed a plan last night, gong to isolate as many HCW as possible, but can't keep ICU open without that exposed pool. So, for the moment, these medium risk individuals are at work and wil be conducting 2x daily health screening. More to come today.
- HMC: last night I learned about a death in a pt presenting with sepsis from Life Center Kirkland earltier this week. My assumption is that he had COVID-19. As of 5 minutes ago, I have a symptomatic ICU physician who took care of him. We are working on mitigation today. I suspect that we will not be able to follow current CDC recs for exposed HCWs either. We are going to try to get swabs on the doc now and path is trying to get tissue to test.

As you migh imagine, I am very concerned about the hospitals at this point.
Available to discuss anytime if helpful. You have my number.
John

From: Armstrong, Gregory (CDC/DDID/NCEZID/OD)
Sent: Wednesday, March 4, 2020 2:33 PM PST
To: Trevor Bedford; Duchin, Jeff; Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen; Schrag, Stephanie (CDC/DDID/NCIRD/DBD)
CC: Helen Y Chu; Clark, Thomas A. (CDC/DDID/NCIRD/DVD); Jay Shendure; Mark J Rieder; Englund, Janet; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Belay, Ermias (CDC/DDID/NCEZID/DHCPP); MacCannell, Duncan (CDC/DDID/NCEZID/OD)
Subject: RE: Results from first four WA SARS-CoV-2 genomes

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Trevor:

Let me know if this interpretation is correct:

- The clade of three is consistent that clade being introduced into Washington, with ongoing transmission since then. This is the most simple explanation.
- That clade could also be consistent with 2 separate introductions (or more). If you consider only the phylogenetic data, this scenario would be much less likely. It would be hard to put a p-value on this, but if you only look at the probability of this (i.e., the probability that a second introduction into Washington would be from the same clade), the p-value would be ~0.2-0.4. However, this assumes that sequencing that has been done so far has been done at random among cases. This is unlikely, so the p-value is probably higher, possibly considerably higher.
- So while the most parsimonious explanation remains a single introduction, the findings by themselves at this point aren't definitive. It will be interesting to see what additional sequences show.
- If the case in the other clade is in a traveler, that is what we'd expect. If that's not the case—if the case had no known exposures—it would suggest a second introduction into Washington.

Thanks,
Greg

Gregory Armstrong, MD | currently assigned to CDC Coronavirus Response as Deputy Incident Manager | garmstrong@cdc.gov

From: Trevor Bedford <trevor@bedford.io>
Sent: Wednesday, March 4, 2020 5:10 PM
To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; n-kcowgill@kingcounty.gov; Schrag, Stephanie (CDC/DDID/NCIRD/DBD) <zha6@cdc.gov>
Cc: Helen Y Chu <helenchu@uw.edu>; Mike Famulare <mfamulare@idmod.org>; Jay Shendure <shendure@gmail.com>; Mark J Rieder <mrieder@uw.edu>; Englund, Janet <janet.englund@seattlechildrens.org>
Subject: Results from first four WA SARS-CoV-2 genomes

Hi all,

We just had another genome come off the sequencer. I'm provisionally calling this WA-S2.

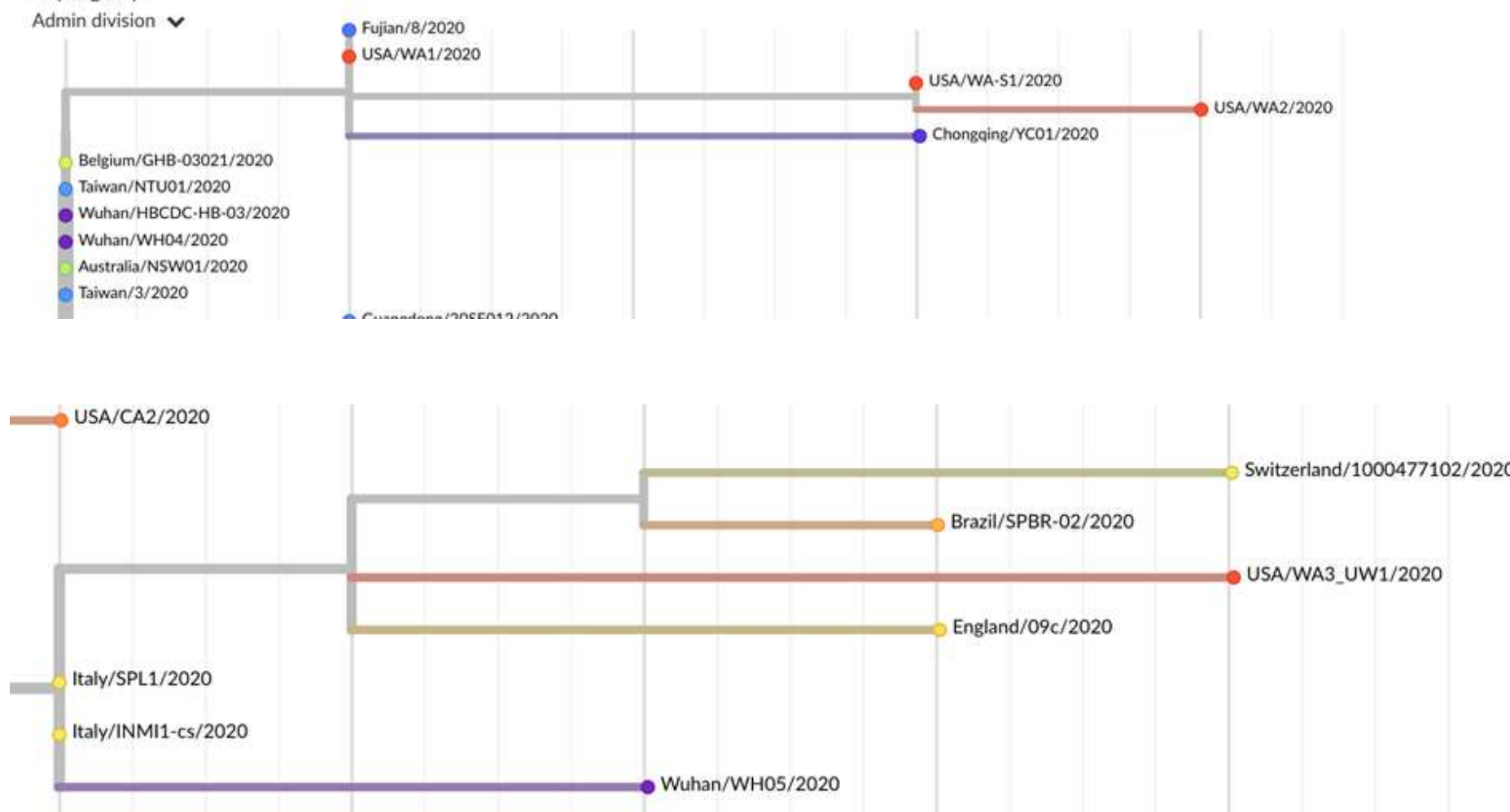
This brings us to:

- WA1 --- Jan 19, first case in Everett (sequenced by CDC)
- WA2 --- Feb 24, Snohomish County
- WA3_UW1 --- Feb 27 Seattle (sequenced by UW Virology)
- WA-S2 --- Feb 20 Seattle

We see that WA1, WA2 and WA-S2 all fall into the same cluster. This is the one we think has been circulating since mid-Jan. WA3_UW1 is a separate, possibly recent introduction.

Phylogeny

Admin division ▼



Given that these three fall into the same cluster, we still estimate that this cluster has resulted in ~600 infections circulating at this moment.

It's hard to say how big of a transmission chain WA3_UW1 is part of.

This genome came from a metagenomics run, the other three failed in this run. These were run in parallel in hybrid capture and should be finished tomorrow I believe.

Please feel free to forward this within public health as you see fit.

I would like to make a public announcement of this genome result alongside broad denominator data (we tested ~1000 specimens and found 5 positives in our research assay) this evening. I will plan to preview this announcement with the group.

- Trevor

From: Trevor Bedford
Sent: Wednesday, March 4, 2020 3:14 PM PST
To: Armstrong, Gregory (CDC/DDID/NCEZID/OD)
CC: Duchin, Jeff; Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen; Schrag, Stephanie (CDC/DDID/NCIRD/DBD); Helen Y Chu; Clark, Thomas A. (CDC/DDID/NCIRD/DVD); Jay Shendure; Mark J Rieder; Englund, Janet; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Belay, Ermias (CDC/DDID/NCEZID/DHCPP); MacCannell, Duncan (CDC/DDID/NCEZID/OD)
Subject: Re: Results from first four WA SARS-CoV-2 genomes

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks for the input Greg. We should be able to do some modeling of clade sizes. We've done this in other projects.

I'm working with Scott, UW Virology to confirm travel history of WA3_UW1. Preliminarily, this may be a one-off travel introduction and so we'd still be looking at the (hypothesized) single large transmission chain.

- Trevor

On Mar 4, 2020, at 2:33 PM, Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov> wrote:

Trevor:

Let me know if this interpretation is correct:

- The clade of three is consistent that clade being introduced into Washington, with ongoing transmission since then. This is the most simple explanation.
- That clade could also be consistent with 2 separate introductions (or more). If you consider only the phylogenetic data, this scenario would be much less likely. It would be hard to put a p-value on this, but if you only look at the probability of this (i.e., the probability that a second introduction into Washington would be from the same clade), the p-value would be ~0.2-0.4. However, this assumes that sequencing that has been done so far has been done at random among cases. This is unlikely, so the p-value is probably higher, possibly considerably higher.
- So while the most parsimonious explanation remains a single introduction, the findings by themselves at this point aren't definitive. It will be interesting to see what additional sequences show.
- If the case in the other clade is in a traveler, that is what we'd expect. If that's not the case—if the case had no known exposures—it would suggest a second introduction into Washington.

Thanks,
Greg

Gregory Armstrong, MD | currently assigned to CDC Coronavirus Response as Deputy Incident Manager | garmstrong@cdc.gov

From: Trevor Bedford <trevor@bedford.io>
Sent: Wednesday, March 4, 2020 5:10 PM
To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; n-kcowgill@kingcounty.gov; Schrag, Stephanie (CDC/DDID/NCIRD/DBD) <zha6@cdc.gov>
Cc: Helen Y Chu <helenchu@uw.edu>; Mike Famulare <mfamulare@idmod.org>; Jay Shendure <shendure@gmail.com>; Mark J Rieder <mrieder@uw.edu>; Englund, Janet <janet.englund@seattlechildrens.org>
Subject: Results from first four WA SARS-CoV-2 genomes

Hi all,

We just had another genome come off the sequencer. I'm provisionally calling this WA-S2.

This brings us to:

- WA1 --- Jan 19, first case in Everett (sequenced by CDC)
- WA2 --- Feb 24, Snohomish County
- WA3_UW1 --- Feb 27 Seattle (sequenced by UW Virology)
- WA-S2 --- Feb 20 Seattle

We see that WA1, WA2 and WA-S2 all fall into the same cluster. This is the one we think has been circulating since mid-Jan. WA3_UW1 is a separate, possibly recent introduction.

<image002.png>

<image004.png>

Given that these three fall into the same cluster, we still estimate that this cluster has resulted in ~600 infections circulating at this moment.

It's hard to say how big of a transmission chain WA3_UW1 is part of.

This genome came from a metagenomics run, the other three failed in this run. These were run in parallel in hybrid capture and should be finished tomorrow I believe.

Please feel free to forward this within public health as you see fit.

I would like to make a public announcement of this genome result alongside broad denominator data (we tested ~1000 specimens and found 5 positives in our research assay) this evening. I will plan to preview this announcement with the group.

- Trevor

From: Trevor Bedford
Sent: Wednesday, March 4, 2020 7:05 PM PST
To: Armstrong, Gregory (CDC/DDID/NCEZID/OD)
CC: Duchin, Jeff; Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen; Schrag, Stephanie (CDC/DDID/NCIRD/DBD); Helen Y Chu; Clark, Thomas A. (CDC/DDID/NCIRD/DVD); Jay Shendure; Mark J Rieder; Englund, Janet; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Belay, Ermias (CDC/DDID/NCEZID/DHCPP); MacCannell, Duncan (CDC/DDID/NCEZID/OD); Alex Greninger; Pavitra Roychoudhury; Jerome, Keith R
Subject: Re: Results from first four WA SARS-CoV-2 genomes

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi all,

We have an additional genome from the UW Virology (Alex, Pavitra and Keith cc'ed). This is "WA4-UW2". This is identical in sequence to what SFS sequenced today with "WA-S1". Again, I think the most probable scenario is a transmission chain initiated in mid-Jan by WA1 that has continued to circulate locally resulting in WA-S2, WA4-UW2, WA2.

The metadata shows that WA-S2, WA4-UW2 are definitely different samples.

Scott, Alex was able to confirm that yes WA3_UW1 was a travel case.

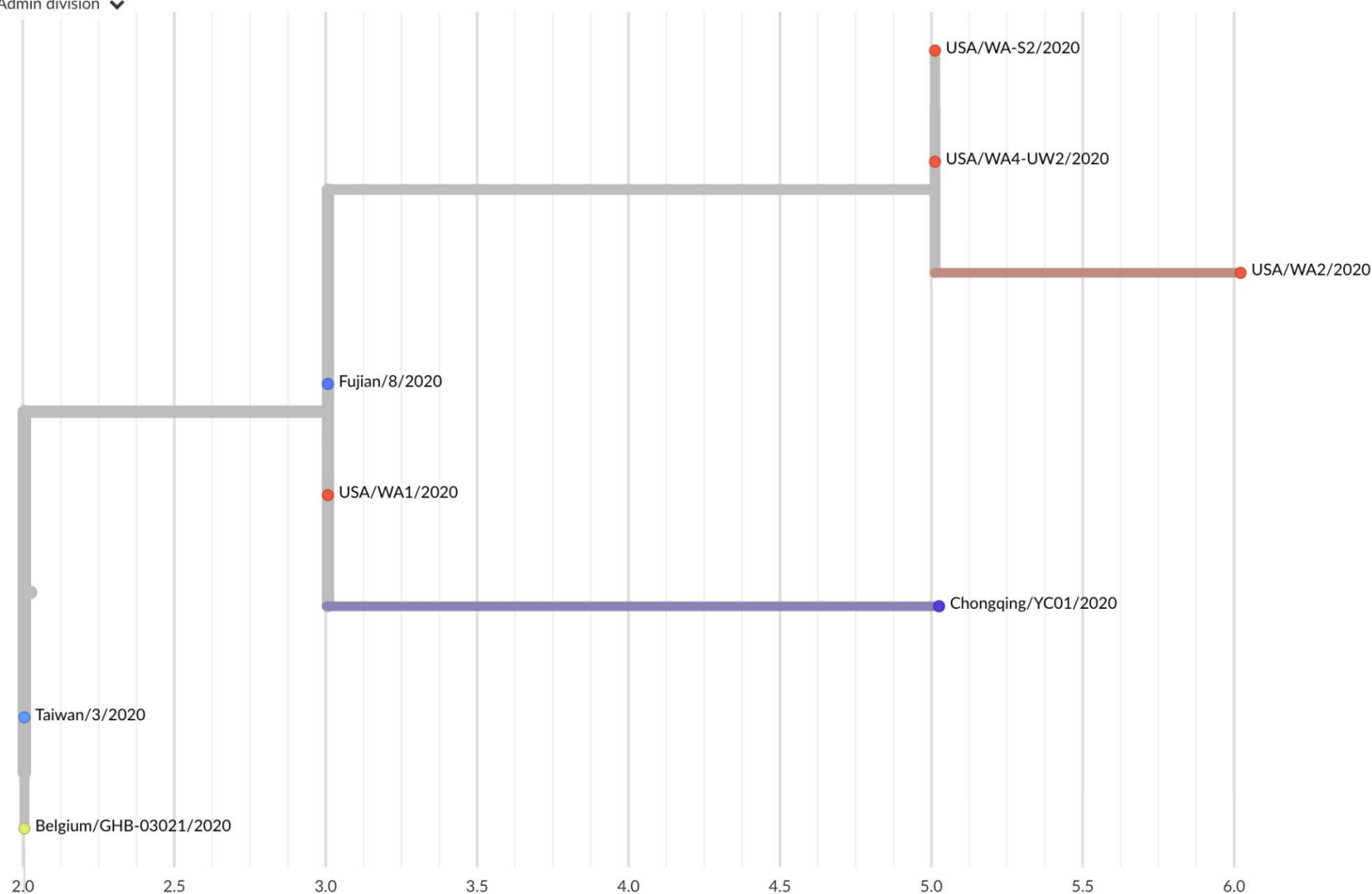
For me, the evidence suggests a single transmission chain circulating in the community. The forward simulation still suggests a median of 600 active infections.

- Trevor

Phylogeny

Admin division ▼

RESET LAYOUT



On Mar 4, 2020, at 3:14 PM, Trevor Bedford <trevor@bedford.io> wrote:

Thanks for the input Greg. We should be able to do some modeling of clade sizes. We've done this in other projects.

I'm working with Scott, UW Virology to confirm travel history of WA3_UW1. Preliminarily, this may be a one-off travel introduction and so we'd still be looking at the (hypothesized) single large transmission chain.

- Trevor

On Mar 4, 2020, at 2:33 PM, Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov> wrote:

Trevor:

Let me know if this interpretation is correct:

- The clade of three is consistent that clade being introduced into Washington, with ongoing transmission since then. This is the most simple explanation.
- That clade could also be consistent with 2 separate introductions (or more). If you consider only the phylogenetic data, this scenario would be much less likely. It would be hard to put a p-value on this, but if you only look at the probability of this (i.e., the probability that a second introduction into Washington would be from the same clade), the p-value would be ~0.2-0.4. However, this assumes that sequencing that has been done so far has been done at random among cases. This is unlikely, so the p-value is probably higher, possibly considerably higher.
- So while the most parsimonious explanation remains a single introduction, the findings by themselves at this point aren't definitive. It will be interesting to see what additional sequences show.
- If the case in the other clade is in a traveler, that is what we'd expect. If that's not the case—if the case had no known exposures—it would suggest a second introduction into Washington.

Thanks,
Greg

Gregory Armstrong, MD | currently assigned to CDC Coronavirus Response as Deputy Incident Manager | garmstrong@cdc.gov

From: Trevor Bedford <trevor@bedford.io>

Sent: Wednesday, March 4, 2020 5:10 PM

To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; n-kcowgill@kingcounty.gov; Schrag, Stephanie (CDC/DDID/NCIRD/DBD) <zha6@cdc.gov>

Cc: Helen Y Chu <helenchu@uw.edu>; Mike Famulare <mfamulare@idmod.org>; Jay Shendure <shendure@gmail.com>; Mark J Rieder <mrieder@uw.edu>; Englund, Janet <janet.englund@seattlechildrens.org>

Subject: Results from first four WA SARS-CoV-2 genomes

Hi all,

We just had another genome come off the sequencer. I'm provisionally calling this WA-S2.

This brings us to:

- WA1 --- Jan 19, first case in Everett (sequenced by CDC)
- WA2 --- Feb 24, Snohomish County
- WA3_UW1 --- Feb 27 Seattle (sequenced by UW Virology)
- WA-S2 --- Feb 20 Seattle

We see that WA1, WA2 and WA-S2 all fall into the same cluster. This is the one we think has been circulating since mid-Jan. WA3_UW1 is a separate, possibly recent introduction.

<image002.png>

<image004.png>

Given that these three fall into the same cluster, we still estimate that this cluster has resulted in ~600 infections circulating at this moment.

It's hard to say how big of a transmission chain WA3_UW1 is part of.

This genome came from a metagenomics run, the other three failed in this run. These were run in parallel in hybrid capture and should be finished tomorrow I believe.

Please feel free to forward this within public health as you see fit.

I would like to make a public announcement of this genome result alongside broad denominator data (we tested ~1000 specimens and found 5 positives in our research assay) this evening. I will plan to preview this announcement with the group.

- Trevor

From: Duchin, Jeff
Sent: Sunday, March 1, 2020 7:41 AM PST
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI); Bell, Michael MD (CDC/DDID/NCEZID/DHQP); Jernigan, Daniel B. (CDC/DDID/NCIRD/ID); Armstrong, Gregory (CDC/DDID/NCEZID/OD)
CC: Kay, Meagan; Belay, Ermias (CDC/DDID/NCEZID/DHCPP)
Subject: RE: exposures in hospitals

Thanks. If there are additional team members who could come out here and support hcf response (help track/exposures, provide care, esp nurses) that would be great. We rally need a field team to do testing of exposed HCW that are furloguhted – have not way to test people except in HCF and ithat is increasingly problematic.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Sunday, March 1, 2020 7:37 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Belay, Ermias (CDC/DDID/NCEZID/DHCPP) <ebb8@cdc.gov>
Subject: RE: exposures in hospitals

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Jeff, Meagan –
Ermias is now going to serve as the HQ POC for the field team, so you have 1 stop to make sure you get prompt responses to you inquiries. As I noted earlier, we will of course be available to support a call later today to discuss issue below.
satish

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Sunday, March 1, 2020 10:16 AM
To: Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Cc: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: Fwd: exposures in hospitals

We are having a very serious challenge related to hospital exposures and impact on the healthcare system. Would be great to have a call to discuss. Will be meeting with your team here this morning and then maybe we can chat after that.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: John B. Lynch <jblynch@uw.edu>
Sent: Sunday, March 1, 2020 7:09:22 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Kawakami, Vance <Vance.Kawakami@kingcounty.gov>
Subject: exposures in hospitals

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Good morning my friends,

Quick update:

- Large Evergreen exposure (you are well aware)
- Large Valley exposure (pretty sure you are aware). We developed a plan last night, going to isolate as many HCW as possible, but can't keep ICU open without that exposed pool. So, for the moment, these medium risk individuals are at work and will be conducting 2x daily health screening. More to come today.
- HMC: last night I learned about a death in a pt presenting with sepsis from Life Center Kirkland earlier this week. My assumption is that he had COVID-19. As of 5 minutes ago, I have a symptomatic ICU physician who took care of him. We are working on mitigation today. I suspect that we will not be able to follow current CDC recs for exposed HCWs either. We are going to try to get swabs on the doc now and path is trying to get tissue to test.

As you might imagine, I am very concerned about the hospitals at this point.

Available to discuss anytime if helpful. You have my number.

John

From: Baker, Michael (OS/IEA)
Sent: Saturday, February 29, 2020 3:55 PM PST
To: Baker, Michael (OS/IEA)
Subject: [IMPORTANT UPDATE] FDA Issues New Policy to Help Expedite Availability of Diagnostics

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Dear Partner –

Today, as part of the U.S. Food and Drug Administration’s ongoing and aggressive commitment to address the coronavirus outbreak, the agency [issued a new policy](#) for certain laboratories seeking to develop diagnostic tests for coronavirus in order to achieve more rapid testing capacity in the U.S.

The new policy is for certain laboratories that develop and begin to use validated COVID-19 diagnostics before the FDA has completed review of their [Emergency Use Authorization](#) (EUA) requests. The immediately in effect guidance issued today describes the circumstances where the FDA does not intend to object to the use of these tests for clinical testing while the laboratories are pursuing an EUA with the FDA. Importantly, this policy only applies to laboratories that are certified to perform high-complexity testing consistent with requirements under [Clinical Laboratory Improvement Amendments](#).

The FDA guidance provides recommendations for test developers, including information regarding test validation, FDA notification and interim confirmatory clinical testing. Following the completion of their test validation, laboratories should communicate with the FDA, via email, in order to notify the agency that the test has been validated. Laboratories should submit a completed EUA request within 15 business days of notification.

The link to the full press release is [here](#).

Related Information

- [Novel Coronavirus](#)
- [Policy for Diagnostics Testing in Laboratories Certified to Perform High Complexity Testing under CLIA prior to Emergency Use Authorization for Coronavirus Disease-2019 during the Public Health Emergency - Immediately in Effect Guidance for Clinical Laboratories and Food and Drug Administration Staff](#)

Sincerely,
Darcie

Darcie L. Johnston
Director, Intergovernmental Affairs
U.S. Department of Health and Human Services

Darcie.Johnston@hhs.gov

From: Pavan Bhatraju
Sent: Wednesday, March 4, 2020 12:51 PM PST
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP); Duchin, Jeff; Craig Smith; 'Liles, Conrad'; sumip1@gmail.com
CC: Page, Libby Charhon; Stein, Kate; Craig Smith; Craig Smith
Subject: Re: Resource for Community Prevalence Estimate of COVID-19

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

I'm looping in Craig Smith at Bloodworks.
Craig and Sumi please respond all a time that we all could talk.
Get [Outlook for iOS](#)

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Sent: Wednesday, March 4, 2020 12:15:00 PM
To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Pavan Bhatraju <bhatraju@uw.edu>; Craig Smith <CSmith@Bloodworksnw.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumip1@gmail.com <sumip1@gmail.com>
Cc: Page, Libby Charhon <Libby.Page@kingcounty.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>
Subject: RE: Resource for Community Prevalence Estimate of COVID-19

Pavan-

Thank you for reaching out! I am leading the infection prevention and control team from CDC here in Seattle. Can we touch base by phone? Cell 404-259-7280
John

John A. Jernigan, MD, MS
Director, Office of Prevention Research and Evaluation
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
1600 Clifton Road, Mailstop A-31
Atlanta, Georgia 30333
Phone 404-639-4245
Fax 404-639-4046

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Wednesday, March 4, 2020 3:03 PM
To: Pavan Bhatraju <bhatraju@uw.edu>; Craig Smith <CSmith@Bloodworksnw.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumip1@gmail.com
Cc: Page, Libby Charhon <Libby.Page@kingcounty.gov>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>
Subject: RE: Resource for Community Prevalence Estimate of COVID-19

Pavan,

This is very wonderful news. We desperately need field teams to do testing for people who need testing but not medical care. I'm connecting you with our staff working on developing mobile field strike teams. We have an acute need at LifeWorks and would like to test family members of patients ASAP.

Much obliged - Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Pavan Bhatraju <bhatraju@uw.edu>
Sent: Wednesday, March 4, 2020 11:51 AM
To: Craig Smith <CSmith@Bloodworksnw.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumip1@gmail.com; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Subject: Resource for Community Prevalence Estimate of COVID-19

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Dear All,

Bloodworks NW has reached out and wants to know how they can help. They have mobile bloodworks units, have the capability to swab and collect samples from many people and have the capacity to run COVID-19 assays at Bloodworks.

How can we utilize this resource to understand the prevalence of COVID-19 in the community?

Dr. Duchin, please tell us your thoughts and who we could work with.

Thanks,

Pavan

Pavan Bhatraju, MD MSc
Assistant Professor
Pulmonary, Critical Care and Sleep Medicine

From: Suman Paranjape
Sent: Wednesday, March 4, 2020 1:18 PM PST
To: Pavan Bhatraju
CC: Jernigan, John A. (CDC/DDID/NCEZID/DHQP); Duchin, Jeff; Craig Smith; Liles, Conrad; Page, Libby Charhon; Stein, Kate; Craig Smith
Subject: Re: Resource for Community Prevalence Estimate of COVID-19

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi all,
I can make myself available anytime although 4:15-5:40 PM will be more difficult.
Best,
Sumi

On Wed, Mar 4, 2020 at 12:51 PM Pavan Bhatraju <bhatraju@uw.edu> wrote:
I'm looping in Craig Smith at Bloodworks.
Craig and Sumi please respond all a time that we all could talk.
Get [Outlook for iOS](#)
From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Sent: Wednesday, March 4, 2020 12:15:00 PM
To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Pavan Bhatraju <bhatraju@uw.edu>; Craig Smith <CSmith@Bloodworksnw.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumip1@gmail.com <sumip1@gmail.com>
Cc: Page, Libby Charhon <Libby.Page@kingcounty.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>
Subject: RE: Resource for Community Prevalence Estimate of COVID-19

Pavan-

Thank you for reaching out! I am leading the infection prevention and control team from CDC here in Seattle. Can we touch base by phone? Cell 404-259-7280

John

John A. Jernigan, MD, MS
Director, Office of Prevention Research and Evaluation
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
1600 Clifton Road, Mailstop A-31
Atlanta, Georgia 30333
Phone 404-639-4245
Fax 404-639-4046

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Wednesday, March 4, 2020 3:03 PM
To: Pavan Bhatraju <bhatraju@uw.edu>; Craig Smith <CSmith@Bloodworksnnw.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumip1@gmail.com
Cc: Page, Libby Charhon <Libby.Page@kingcounty.gov>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>
Subject: RE: Resource for Community Prevalence Estimate of COVID-19

Pavan,

This is very wonderful news. We desperately need field teams to do testing for people who need testing but not medical care. I'm connecting you with our staff working on developing mobile field strike teams. We have an acute need at LifeWorks and would like to test family members of patients ASAP.

Much obliged - Jeff

Jeffrey S. Duchin, MD

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County

Professor in Medicine, Division of Infectious Diseases, University of Washington

Adjunct Professor, School of Public Health

401 5th Ave, Suite 1250, Seattle, WA 98104

Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803

E-mail: jeff.duchin@kingcounty.gov

From: Pavan Bhatraju <bhatraju@uw.edu>
Sent: Wednesday, March 4, 2020 11:51 AM
To: Craig Smith <CSmith@Bloodworksnw.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumip1@gmail.com; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Subject: Resource for Community Prevalence Estimate of COVID-19

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Dear All,

Bloodworks NW has reached out and wants to know how they can help. They have mobile bloodworks units, have the capability to swab and collect samples from many people and have the capacity to run COVID-19 assays at Bloodworks.

How can we utilize this resource to understand the prevalence of COVID-19 in the community?

Dr. Duchin, please tell us your thoughts and who we could work with.

Thanks,

Pavan

Pavan Bhatraju, MD MSc

Assistant Professor

Pulmonary, Critical Care and Sleep Medicine

From: Kay, Meagan
Sent: Wednesday, March 4, 2020 7:37 AM PST
To: Duchin, Jeff; Clark, Thomas A. (CDC/DDID/NCIRD/DVD); kirsten.vannice@gatesfoundation.org
CC: Cowgill, Karen; Apa, James; Elsenboss, Carina; Hayes, Patty; Worsham, Dennis
Subject: RE: King County covid proposal: seeking your rapid input

Kirsten will be our point.

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Wednesday, March 4, 2020 6:58 AM
To: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Apa, James <James.Apa@kingcounty.gov>; Elsenboss, Carina <Carina.Elsenboss@kingcounty.gov>; Hayes, Patty <Patty.Hayes@kingcounty.gov>; Worsham, Dennis <Dennis.Worsham@kingcounty.gov>
Subject: RE: King County covid proposal: seeking your rapid input

Thanks, Tom. I think somehow we would need to have this integrated into our surveillance formally and emergency assistance. Also need to better describe follow-up actions once positive and negative results are obtained.

Meagan – is there anyone on our end who can liaison with SFS to set it up?

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>
Sent: Wednesday, March 4, 2020 6:52 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Subject: FW: King County covid proposal: seeking your rapid input

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

FYI from SFS

From: Schrag, Stephanie (CDC/DDID/NCIRD/DBD) <zha6@cdc.gov>
Sent: Tuesday, March 3, 2020 11:26 PM
To: Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>

Cc: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Fleming, David <dfleming@path.org>

Subject: King County covid proposal: seeking your rapid input

Dan, Greg, Tom,

After much discussion with SFS team and advisors, Gates Ventures teams, and David Fleming (with context from Team B and Bob Pinner), attached please find a proposal Karen Cowgill and I drafted for immediate launch of a new public health surveillance activity in King County, WA. If we can get your concurrence and input on concerns/wishes by our morning in Seattle, we will then have Tom Clark share the ideas with Jeff Duchin to obtain his input. Once we have these inputs and concurrences, including comfort with King County and CDC as the named agencies and faces of this activity, we will proceed with seeking human subjects determinations at CDC and WA. Our view is this likely falls under public health surveillance/response activity and not human subjects research.

The hope on the part of the partners here is to launch ASAP (days at most from now).

Regarding the serosurvey ideas you sent yesterday, these are under discussion by the SFS team, but will be considered as a separate activity (don't fit directly on the proposed platform here).

Looking forward to your thoughts on the document,
Stephanie and Karen

Stephanie Schrag, D Phil
Epidemiology Team Lead
Respiratory Diseases Branch
MS H24-6, Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30329
404 639 4646 (office)
404 580 1960 (mobile)

From: Kay, Meagan
Sent: Wednesday, March 4, 2020 6:30 AM PST
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP); Duchin, Jeff
Subject: Re: Guidance regarding LIFECARE

Thanks. I think we shouldn't tell them to call us if we are sick because we are having a hard time responding to calls right now. If they are sick they should talk with their healthcare provider and mention their Lifecare exposure.

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Sent: Wednesday, March 4, 2020 6:24:42 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Subject: Fwd: Guidance regarding LIFECARE

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Get [Outlook for iOS](#)

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
Sent: Tuesday, March 3, 2020 5:27:27 PM
To: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: FW: Guidance regarding LIFECARE

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
Sent: Tuesday, March 3, 2020 8:08 PM
To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: FW: Guidance regarding LIFECARE

From: Bogan, Sharon <Sharon.Bogan@kingcounty.gov>
Sent: Tuesday, March 3, 2020 4:17 PM
To: Stone, Nimalie (CDC/DDID/NCEZID/DHQP) <ei2@cdc.gov>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Cc: Haynes, Benjamin (CDC/OD/OADC) <fxq2@cdc.gov>
Subject: RE: Guidance regarding LIFECARE

Yes, I need the appropriate contact for LifeCare. That said, our Call Center already has our updated document.

From: Stone, Nimalie (CDC/DDID/NCEZID/DHQP) <ei2@cdc.gov>
Sent: Tuesday, March 3, 2020 1:08 PM
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jq9@cdc.gov>; Bogan, Sharon <Sharon.Bogan@kingcounty.gov>
Cc: Haynes, Benjamin (CDC/OD/OADC) <fxq2@cdc.gov>
Subject: RE: Guidance regarding LIFECARE

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Sharon, let me know if you need the appropriate points of contact for LifeCare.
Best,
Nimalie

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jq9@cdc.gov>
Sent: Tuesday, March 3, 2020 4:06 PM
To: Bogan, Sharon <Sharon.Bogan@kingcounty.gov>
Cc: Stone, Nimalie (CDC/DDID/NCEZID/DHQP) <ei2@cdc.gov>
Subject: RE: Guidance regarding LIFECARE

Sharon-some additional comments from Nimalie stone to consider. She also raises the good point that perhaps we should run this by the lifecare folks before going out
JJ

From: Bogan, Sharon <Sharon.Bogan@kingcounty.gov>
Sent: Tuesday, March 3, 2020 4:01 PM
To: Cole, Kate <kacole@kingcounty.gov>; Rao, Agam K. (CDC/DDID/NCEZID/DHCPP) <ige4@cdc.gov>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jq9@cdc.gov>; French, Hannah <n-french@kingcounty.gov>; Ross, Katie-PSB <Katie-PSB.Ross@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Haynes, Benjamin (CDC/OD/OADC) <fxq2@cdc.gov>; Karasz, Hilary <Hilary.Karas@kingcounty.gov>
Subject: Guidance regarding LIFECARE

All-
This is updated as of 1 pm with all CDC.

Sharon Bogan
Communications
(she/her pronouns)
Public Health – Seattle & King County
401 5th Avenue | Seattle, WA 98104
206.263.8770 | sharon.bogan@kingcounty.gov
[Facebook](#) | [Twitter](#) | [Public Health Insider](#) | [Newsletter](#)

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
Sent: Wednesday, March 4, 2020 1:28 PM PST
To: Suman Paranjape; Pavan Bhatraju
CC: Duchin, Jeff; Craig Smith; Liles, Conrad; Page, Libby Charhon; Stein, Kate; Craig Smith
Subject: Re: Resource for Community Prevalence Estimate of COVID-19

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

How about 2:00? Could someone set up a conference line?

Get [Outlook for iOS](#)

From: Suman Paranjape <sumip1@gmail.com>

Sent: Wednesday, March 4, 2020 1:18:17 PM

To: Pavan Bhatraju <bhatraju@uw.edu>

Cc: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Craig Smith <CSmith@bloodworksnw.org>; Liles, Conrad <WCLiles@medicine.washington.edu>; Page, Libby Charhon <Libby.Page@kingcounty.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>; Craig Smith <nwmsdoc@cs.com>

Subject: Re: Resource for Community Prevalence Estimate of COVID-19

Hi all,

I can make myself available anytime although 4:15-5:40 PM will be more difficult.

Best,

Sumi

On Wed, Mar 4, 2020 at 12:51 PM Pavan Bhatraju <bhatraju@uw.edu> wrote:

I'm looping in Craig Smith at Bloodworks.

Craig and Sumi please respond all a time that we all could talk.

Get [Outlook for iOS](#)

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>

Sent: Wednesday, March 4, 2020 12:15:00 PM

To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Pavan Bhatraju <bhatraju@uw.edu>; Craig Smith <CSmith@Bloodworksnw.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumip1@gmail.com <sumip1@gmail.com>

Cc: Page, Libby Charhon <Libby.Page@kingcounty.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>

Subject: RE: Resource for Community Prevalence Estimate of COVID-19

Pavan-

Thank you for reaching out! I am leading the infection prevention and control team from CDC here in Seattle. Can we touch base by phone? Cell 404-259-7280

John

John A. Jernigan, MD, MS
Director, Office of Prevention Research and Evaluation
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
1600 Clifton Road, Mailstop A-31
Atlanta, Georgia 30333
Phone 404-639-4245
Fax 404-639-4046

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Wednesday, March 4, 2020 3:03 PM
To: Pavan Bhatraju <bhatraju@uw.edu>; Craig Smith <CSmith@Bloodworksnc.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumip1@gmail.com
Cc: Page, Libby Charhon <Libby.Page@kingcounty.gov>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>
Subject: RE: Resource for Community Prevalence Estimate of COVID-19

Pavan,

This is very wonderful news. We desperately need field teams to do testing for people who need testing but not medical care. I'm connecting you with our staff working on developing mobile field strike teams. We have an acute need at LifeWorks and would like to test family members of patients ASAP.

Much obliged - Jeff

Jeffrey S. Duchin, MD

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County

Professor in Medicine, Division of Infectious Diseases, University of Washington

Adjunct Professor, School of Public Health

401 5th Ave, Suite 1250, Seattle, WA 98104

Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803

E-mail: jeff.duchin@kingcounty.gov

From: Pavan Bhatraju <bhatraju@uw.edu>

Sent: Wednesday, March 4, 2020 11:51 AM

To: Craig Smith <CSmith@Bloodworksnw.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumipl@gmail.com; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Subject: Resource for Community Prevalence Estimate of COVID-19

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Dear All,

Bloodworks NW has reached out and wants to know how they can help. They have mobile bloodworks units, have the capability to swab and collect samples from many people and have the capacity to run COVID-19 assays at Bloodworks.

How can we utilize this resource to understand the prevalence of COVID-19 in the community?

Dr. Duchin, please tell us your thoughts and who we could work with.

Thanks,

Pavan

Pavan Bhatraju, MD MSc

Assistant Professor

Pulmonary, Critical Care and Sleep Medicine

From: Armstrong, Gregory (CDC/DDID/NCEZID/OD)
Sent: Saturday, February 29, 2020 11:20 AM PST
To: Jay Shendure; Scott Dowell
CC: Jernigan, Daniel B. (CDC/DDID/NCIRD/ID); bosc@bgc3.com; Sharon Bergquist (Gates Ventures); Dan Wattendorf; Duchin, Jeff; Schrag, Stephanie (CDC/DDID/NCIRD/DBD)
Subject: RE: Seattle flu (Covid-19?) study - introductions

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Jay: Let me introduce you to Stephanie Schrag, who is tentatively flying out tomorrow to meet with your team. She is a very seasoned epidemiologist here who has been working in bacterial respiratory disease since 1998.

When you're off your call, can you call her at 404.580.1960?

Thanks,
Greg

Gregory Armstrong, MD | currently assigned to CDC Coronavirus Response as Deputy Incident Manager | garmstrong@cdc.gov

From: Jay Shendure <shendure@gmail.com>
Sent: Friday, February 28, 2020 7:29 PM
To: Scott Dowell <Scott.Dowell@gatesfoundation.org>
Cc: Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; bosc@bgc3.com; Sharon Bergquist (Gates Ventures) <Sharon.Bergquist@gatesventures.com>; Dan Wattendorf <Dan.Wattendorf@gatesfoundation.org>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: Re: Seattle flu (Covid-19?) study - introductions

Many thanks for the introduction, Scott.

Greg, it's terrific to hear those sentiments from the CDC, and we look forward to working with you to find an effective path forward.

It would be great to connect by phone as soon as you have a bit of time. My cell phone is 617-921-7248. Please feel free to just give me a ring or let me know if there would be a best time for you. I can make myself available whenever suits you best.

Jay

On Fri, Feb 28, 2020 at 4:18 PM Scott Dowell <Scott.Dowell@gatesfoundation.org> wrote:

Greg Armstrong let me introduce you to Jay Shendure, co-pi of the Seattle Flu Study. Greg is deputy incident manager for CDC's Covid-19 response. Hoping you two can talk, bringing in relevant colleagues from the UW clinical lab (CLIA-approved for high complexity testing) as needed.

Dan Jernigan and I spoke earlier to touch bases on the new case here and the potentially valuable role of the SFS in future Covid-19 surveillance. He said Greg would be the ideal person to follow up.

I also spoke with SFS colleagues copied, and reassured them that CDC is actually thrilled to have the additional resources of SFS to detect and track Covid-19, and with all of us wants to figure out how to do it with full ethical and regulatory transparency.

I'm sure you can figure out a range of workable solutions. Some relevant points I noted from our discussions so far:

- SFS patients consent to viral testing beyond flu, and the IRB is comfortable that covers Covid-19
- The website is explicit that SFS is working with public health authorities on Covid-19
- Current pace is about 400 patients tested per day
- There is no current expectation that subjects would receive notice of a negative Covid-19 result
- Positives can be referred to the UW clinical lab for approved Covid-19 confirmation

As you follow up feel free to keep me and those copied in the loop.

Thanks all for some quick and productive discussions!
Scott

From: Duchin, Jeff
Sent: Saturday, February 22, 2020 8:35 AM PST
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD); Balter, Sharon (CDC health.nyc.gov); Bresee, Joseph (CDC/DDID/NCIRD/ID); Christine Mahle; Conover, Craig (CDC illinois.gov); Ghinai, Isaac; Green, Nicole (CDC ph.lacounty.gov); Hector Rivas; Jain, Seema (CDC cdph.ca.gov); Jessica Sell; Justin DeWitt; Kauerauf, Judy (CDC illinois.gov); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Layden, Jennifer (CDC illinois.gov); Layton, Marci (CDC health.nyc.gov); Lindquist, Scott SL (CDC doh.wa.gov); Meredith Haddix; Molly Lamb; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov); Rose, Laura E. (CDC/DDPHSS/OLSS/OLS); Sarah Park; Thomas-Smith, Evonda; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Weiss, Don (CDC health.nyc.gov); Zahn, Matthew
CC: Balter, Sharon (CDC ph.lacounty.gov)
Subject: Re: sentinel surveillance updates

Jeffrey S. Duchin, MD

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>

Sent: Thursday, February 20, 2020 1:58:17 PM

To: Balter, Sharon (CDC health.nyc.gov) <sbalter@health.nyc.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <mlayton@health.nyc.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb <Molly.Lamb@Illinois.gov>; PGounder@ph.lacounty.gov <PGounder@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Sarah Park <sarah.park@doh.hawaii.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>

Cc: Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>

Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello. I have enclosed an updated guidance document that includes information on shipping specimens and an example of an information sheet that you can provide to patients. The guidance document only lists the details of what is planned at 2 sites, but that does not preclude others from starting. They were just used as examples for the EUA submission. A shipping log is also attached. **We are ready to start**

receiving specimens whenever you are ready to send them. We cannot start testing the identified specimens until the EUA is amended, but we believe that will happen quickly. For those that want to send de-identified specimens, we can receive and test them now.

Our questions to you:

1. **Are you planning to send de-identified specimens and when?**
2. **Are you planning to send identifiable specimens and when?**

On the call tomorrow, we will talk about options for data transfer. There will also likely be time to talk about triggers for changing current containment strategies.

Talk to you tomorrow. --gayle

-----Original Appointment-----

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)

Sent: Wednesday, February 19, 2020 5:22 PM

To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD); Balter, Sharon (CDC health.nyc.gov); Bresee, Joseph (CDC/DDID/NCIRD/ID); Christine Mahle; Conover, Craig (CDC illinois.gov); Duchin, Jeff (CDC kingcounty.gov); Ghinai, Isaac; Green, Nicole (CDC ph.lacounty.gov); Hector Rivas; Jain, Seema (CDC cdph.ca.gov); Jessica Sell; Justin DeWitt; Kauerauf, Judy (CDC illinois.gov); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Layden, Jennifer (CDC illinois.gov); Layton, Marci (CDC health.nyc.gov); Lindquist, Scott SL (CDC doh.wa.gov); Meredith Haddix; Molly Lamb; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov); Rose, Laura E. (CDC/DDPHSS/OLSS/OLS); Sarah Park; Thomas-Smith, Evonda; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Weiss, Don (CDC health.nyc.gov); Zahn, Matthew

Cc: Balter, Sharon (CDC ph.lacounty.gov)

Subject: sentinel surveillance updates

When: Friday, February 21, 2020 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: Skype Meeting

[Join Skype Meeting](#)

Trouble Joining? [Try Skype Web App](#)

Join by phone

(404) 553-8912,,37963494# (Atlanta Dial-in Conference Region)

English (United States)

(855) 348-8390,,37963494# (Atlanta Dial-in Conference Region)

English (United States)

[Find a local number](#)

Conference ID: 37963494

[Forgot your dial-in PIN?](#) | [Help](#)

From: Marielle Fricchione
Sent: Tuesday, February 25, 2020 7:16 AM PST
To: Duchin, Jeff; Park, Sarah Y., MD; Bresee, Joseph (CDC/DDID/NCIRD/ID); Langley, Gayle E. (CDC/DDID/NCIRD/DVD); Allison Arwady; Balter, Sharon (CDC ph.lacounty.gov); Brian Hiatt; Christine Mahle; Christopher Shields; Conover, Craig (CDC illinois.gov); Debra Wadford; Desmond, Edward; Gail Cooksey; Ghinai, Isaac; Godfred Masinde; Green, Nicole (CDC ph.lacounty.gov); Hector Rivas; Jain, Seema (CDC cdph.ca.gov); Jessica Sell; Justin DeWitt; Kauerauf, Judy (CDC illinois.gov); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Layden, Jennifer (CDC illinois.gov); Layton, Marci (CDC health.nyc.gov); Leslie Chapman; Lindquist, Scott SL (CDC doh.wa.gov); Meredith Haddix; Molly Lamb; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov); Rose, Laura E. (CDC/DDPHSS/OLSS/OLS); Stephanie Black; Thomas-Smith, Evonda; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Weiss, Don (CDC health.nyc.gov); Zahn, Matthew
CC: Armstrong, Gregory (CDC/DDID/NCEZID/OD); Langley, Gayle E. (CDC/DDID/NCIRD/DVD); Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM)
Subject: RE: updates on sentinel surveillance activities

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi all,

I may have missed it in the draft but I would like to make a request that the community mitigation plans are linked temporally to vaccine forecasting and availability. While I know we cannot predict when vaccine is available – the transition to that phase as the end goal needs to be apparent. Without an exit strategy – it is very difficult to convince a population to engage in community mitigation. This relates to someone’s previous comment of “how long do we close schools?”. From our work in Chicago on pan-flu preparedness, our experiences during H1N1, and our role in Crimson contagion as the epicenter – it was clear that community mitigation works best as a bridge to vaccine or a stand-in for vaccine delay.

Thanks,
Marielle

Marielle Fricchione, MD

Medical Director, Immunization Program
Chicago Department of Public Health
2160 W. Ogden Ave | Chicago, IL 60612
Office: 312.746.5382 | Fax: 312.746.6388
marielle.fricchione@cityofchicago.org

From: [Duchin, Jeff](#)
Sent: Tuesday, February 25, 2020 7:21 AM
To: [Park, Sarah Y., MD](#); [Bresee, Joseph \(CDC/DDID/NCIRD/ID\)](#); [Langley, Gayle E. \(CDC/DDID/NCIRD/DVD\)](#); [Allison Arwady](#); [Balter, Sharon \(CDC ph.lacounty.gov\)](#); [Brian Hiatt](#); [Christine Mahle](#); [Christopher Shields](#); [Conover, Craig \(CDC illinois.gov\)](#); [Debra Wadford](#); [Desmond, Edward](#); [Gail Cooksey](#); [Ghinai, Isaac](#); [Godfred Masinde](#); [Green, Nicole \(CDC ph.lacounty.gov\)](#); [Hector Rivas](#); [Jain, Seema \(CDC cdph.ca.gov\)](#); [Jessica Sell](#); [Justin DeWitt](#); [Kauerauf, Judy \(CDC illinois.gov\)](#); [Kuhnert-Tallman, Wendi \(CDC/DDID/OD\)](#); [Layden, Jennifer \(CDC illinois.gov\)](#); [Layton, Marci \(CDC health.nyc.gov\)](#); [Leslie Chapman](#); [Lindquist, Scott](#)

[SL \(CDC doh.wa.gov\)](#); [Marielle Fricchione](#); [Meredith Haddix](#); [Molly Lamb](#); [PGounder@ph.lacounty.gov](#); [Rakeman, Jennifer JR \(CDC health.nyc.gov\)](#); [Rose, Laura E. \(CDC/DDPHSS/OLSS/OLS\)](#); [Stephanie Black](#); [Thomas-Smith, Evonda](#); [Vagi, Sara J. \(CDC/DDPHSIS/CPR/DEO\)](#); [Weiss, Don \(CDC health.nyc.gov\)](#); [Zahn, Matthew](#)

Cc: [Armstrong, Gregory \(CDC/DDID/NCEZID/OD\)](#); [Langley, Gayle E. \(CDC/DDID/NCIRD/DVD\)](#); [Bialek, Stephanie R. \(CDC/DDPHSIS/CGH/DPDM\)](#)

Subject: Re: updates on sentinel surveillance activities

Thanks, Sarah. I assume our actions will follow from the revised community mitigation guidance and associated triggers CDC is working on for COVID-19. A main challenge is for us doing enhanced surveillance if we get a positive. We don't currently have a network of flu surveillance sites we can tap into and would need to create de novo while addressing other response activities with too few staff/resources.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>

Sent: Tuesday, February 25, 2020 1:25:26 AM

To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Arwady, Allison AA (CDC cityofchicago.org) <allison.arwady@cityofchicago.org>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; Brian Hiatt <brian.hiatt@doh.wa.gov>; Christine Mahle <cmahle@health.nyc.gov>; Christopher Shields <christopher.shields@cityofchicago.org>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Debra Wadford <debra.wadford@cdph.ca.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Desmond, Edward <edward.desmond@doh.hawaii.gov>; Gail Cooksey <Gail.Cooksey@cdph.ca.gov>; Ghinaï, Isaac <Isaac.Ghinaï@Illinois.gov>; Godfred Masinde <godfred.masinde@sfdph.org>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <mLAYTON@health.nyc.gov>; Leslie Chapman <Leslie.Chapman@Illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Marelle Fricchione <Marielle.Fricchione@cityofchicago.org>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb <Molly.Lamb@Illinois.gov>; PGounder@ph.lacounty.gov <PGounder@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Black, Stephanie SB (CDC cityofchicago.org) <stephanie.black@cityofchicago.org>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hqg2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>

Cc: Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>
Subject: RE: updates on sentinel surveillance activities

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Added just a couple comments to distinguish from my previous comments you kept in the document.

Regarding social distancing measures, the challenge may be getting people to adhere to them if they're difficult to maintain. Distance learning sounds ideal, but unless work places can all accommodate a parent working at home to watch their child, that may not work. Then, there's the question of what exactly is the role of children in transmission. If they're tending to be asymptomatic/mild and have little or no role, then great. If they're asymptomatic/mild but have even some role in transmission, then that's going to be a huge challenge.

Sarah Y. Park, MD, FAAP
State Epidemiologist
Chief, Disease Outbreak Control Division
Hawaii Department of Health

An ounce of prevention is worth a pound of cure. - Benjamin Franklin

"Like" us on the [Disease Outbreak Control Division's Facebook Page](http://health.hawaii.gov/docd/)
<http://health.hawaii.gov/docd/>



Please consider the environment before printing this e-mail or attachments.

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>

Sent: Monday, February 24, 2020 3:42 PM

To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Arwady, Allison AA (CDC cityofchicago.org) <allison.arwady@cityofchicago.org>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; Brian Hiatt <brian.hiatt@doh.wa.gov>; Christine Mahle <cmahle@health.nyc.gov>; Christopher Shields <christopher.shields@cityofchicago.org>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Debra Wadford <debra.wadford@cdph.ca.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Desmond, Edward <edward.desmond@doh.hawaii.gov>; Gail Cooksey <Gail.Cooksey@cdph.ca.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Godfred Masinde <godfred.masinde@sfdph.org>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <mLAYTON@health.nyc.gov>; Leslie Chapman <Leslie.Chapman@Illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Marelle Fricchione <Marielle.Fricchione@cityofchicago.org>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb <Molly.Lamb@Illinois.gov>; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>; Black, Stephanie SB (CDC cityofchicago.org) <stephanie.black@cityofchicago.org>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>;

Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>
Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>
Subject: [EXTERNAL] RE: updates on sentinel surveillance activities

All,

Here is the revised version of the document re actions to take now and when a first case is identified in the community for your review. Has more info that represents upcoming CDC thoughts on Comm Mitigation and Health care mitigation. Can make into a table or figure to make more approachable but wanted to get agreeable content first. See what you think and if this is useful for your own planning

Re comms – have submitted edits on all comms materials tonight back to CDC Comms folks. Will let them incorporate that will share with you all tomorrow AM

I think that we have all agreed on a few principals –

- we all have a joint Comms plan, with local jurisdictions being in the lead and CDC supporting you all (that you would announce anything first)
- we have a shared understanding of what actions would be taken if positives are found – the attached doc is for that purpose – but we acknowledge that we will convene when positives occur and think through together as things will change
- CDC will support investigation of early cases as requested by you all.

Finally, I would ask that you all think through funding required for surveillance and response for this project to be ready if and when asked for a proposal by CDC

Finally (really) – Greg Armstrong will be joining the response in my place starting tomorrow. I will linger a bit to support this project but Gayle will continue as CDC POC, and Greg and Stephanie Bialek (EPI-Task Force Lead) will be more present in the discussions going forward. I will fade out for a while but back soon. If you all can include Greg on emails to me, that would be great

Thanks again
Joe

Joseph Bresee, MD
Deputy Incident Manager
CDC 2020 nCoV response

From: Helen Y Chu
Sent: Thursday, February 27, 2020 10:49 PM PST
To: Kuhnert-Tallman, Wendi (CDC/DDID/OD); Duchin, Jeff; Robin A Prentice
CC: Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen; Mark Rieder; Jay A. Shendure; Trevor Bedford; Istarita
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Let's all plan to be on a 9:00 am call tomorrow to discuss this. Robin, can you set up a zoom call and include whoever else should join from the SFS team.

Thank you.

Get [Outlook for iOS](#)

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Sent: Thursday, February 27, 2020 8:19 PM

To: Duchin, Jeff (CDC kingcounty.gov)

Cc: Helen Y Chu; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen

Subject: Re: SEATTLE Flu Study Lab Result

Thanks much Jeff for connecting us. Happy to make the time any time - 7:30 your time is fine but I will wait to see the calendar invite to confirm.

Thanks!

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Thursday, February 27, 2020 11:17:20 PM

To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Cc: Helen Y Chu <helenchu@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org)

<janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov)

<scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>

Subject: SEATTLE Flu Study Lab Result

Wendy,

Thanks for helping us navigate with FDA colleagues what we can say/do in response to a potential positive test result from the SFS research assay. Helen Chu and Jan Englund are the SFS researchers that can provide the details of the test method and other relevant information.

I'm also copying Scott Lindquist, the WA State DOH communicable disease epidemiologist and Karen Cowgill who works on surveillance with us. It probably would be good to have a call early tomorrow Pacific time (7:30) but Helen and Jan should schedule the time with you.

Very much appreciate your help.

Jeff

Jeffrey S. Duchin, MD

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County

Professor in Medicine, Division of Infectious Diseases, University of Washington

Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Mark J Rieder
Sent: Thursday, February 27, 2020 10:56 PM PST
To: Helen Y Chu
CC: Kuhnert-Tallman, Wendi (CDC/DDID/OD); Duchin, Jeff; Robin A Prentice;
Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen;
Jay A. Shendure; Trevor Bedford; Istarita
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Here is the Zoom link for the call in tomorrow (Friday, 2/28 @ 9 am PT)

Mark Rieder is inviting you to a scheduled Zoom meeting.

Topic: CDC Call

Time: Feb 28, 2020 09:00 AM Pacific Time (US and Canada)

Join Zoom Meeting

<https://washington.zoom.us/j/265821853>

Meeting ID: 265 821 853

One tap mobile

+16699006833,,265821853# US (San Jose)

+16468769923,,265821853# US (New York)

Dial by your location

+1 669 900 6833 US (San Jose)

+1 646 876 9923 US (New York)

Meeting ID: 265 821 853

On Thu, Feb 27, 2020 at 10:50 PM Helen Y Chu <helenchu@uw.edu> wrote:

Let's all plan to be on a 9:00 am call tomorrow to discuss this. Robin, can you set up a zoom call and include whoever else should join from the SFS team.

Thank you.

Get [Outlook for iOS](#)

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Sent: Thursday, February 27, 2020 8:19 PM

To: Duchin, Jeff (CDC kingcounty.gov)

Cc: Helen Y Chu; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen

Subject: Re: SEATTLE Flu Study Lab Result

Thanks much Jeff for connecting us. Happy to make the time any time - 7:30 your time is fine but I will wait to see the calendar invite to confirm.

Thanks!

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Thursday, February 27, 2020 11:17:20 PM

To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Cc: Helen Y Chu <helenchu@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org)

<janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov)
<scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>
Subject: SEATTLE Flu Study Lab Result

Wendy,

Thanks for helping us navigate with FDA colleagues what we can say/do in response to a potential positive test result from the SFS research assay. Helen Chu and Jan Englund are the SFS researchers that can provide the details of the test method and other relevant information. I'm also copying Scott Lindquist, the WA State DOH communicable disease epidemiologist and Karen Cowgill who works on surveillance with us. It probably would be good to have a call early tomorrow Pacific time (7:30) but Helen and Jan should schedule the time with you. Very much appreciate your help.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Baliga, Christopher
Sent: Wednesday, March 4, 2020 10:20 PM PST
To: Duchin, Jeff; Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
Subject: RE: NP and OP tests and level of exposure

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

At one point I thought that, but most people say it is. In the new exposure guidance you sent out, they do NOT mention NP or OP swabbing. If I can confirm that, I would dance around the hospital.

The new guidance is awesome, by the way! But if the NP swab is aerosol generating, then even if the staff wore everything but a respiratory, they are now medium risk and would be excluded from work from 14 days (although I think John would say ok to work if asymptomatic?).

What are you advising about nebs? I know John had said he thought those were high risk. Are not doing nebs in the clinic anymore? We can't let the rooms lie fallow for two hours easily.

From: Duchin, Jeff [mailto:Jeff.Duchin@kingcounty.gov]
Sent: Wednesday, March 04, 2020 10:10 PM
To: Baliga, Christopher <Christopher.Baliga@virginiamason.org>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Subject: Re: NP and OP tests and level of exposure

**** STOP. THINK. External Email ****

Chris, John should correct me but I understood that swabbing was not considered aerosol generating and see new guidance I just sent around allowing working quarantine of exposed HCW.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Baliga, Christopher <Christopher.Baliga@virginiamason.org>
Sent: Wednesday, March 4, 2020 10:07:52 PM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP)

<jqj9@cdc.gov>

Subject: NP and OP tests and level of exposure

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi you two,

So as we now look to roll out testing to a larger group of people, I wanted to ask what the guidance is on performing NP and OP swabs. I would never have thought of an OP swab as aerosol generating, but I notice Children's has described it as such. CDC guidance just says respiratory diagnostic specimens.

Anyway, couple questions. Recommendations on healthcare workers exposed by doing a NP swab w/o wearing a PAPR. Per my read of the latest and greatest CDC guidance, they are medium risk and furloughed? Would you advise us to not furlough unless symptomatic?

Are these aerosol generating in the sense they stay in the air for 2 hours? Or are they local events that may infect someone during the procedure, but not stay in the air for 2 hours. I am trying to ask how would we do any flu testing when COVID-19 is going around if we need to be doing them in a negative pressure room under airborne precautions?

I have 1 negative pressure room in a clinic in my entire health system (the ID clinic). Otherwise, would send to the two rooms in our ED?

Thanks for your guidance!

Chris

Chris Baliga, MD

Infectious Diseases

Medical Director of Infection Prevention and Employee Health



Virginia Mason Hospital & Seattle Medical Center

1100 9th Ave | H7-ID | Seattle, WA 98101

(206) 341-1617 office | (206) 341-0846 clinic | (206) 223-6814 fax

[VirginiaMason.org](https://www.virginiamason.org)

Confidentiality Disclaimer:

The information contained in this e-mail may be confidential. If you received this in error, please call the Virginia Mason Privacy Officer at (206) 223-7505.

Patients: E-mail is not considered secure. By choosing to communicate with Virginia Mason

by e-mail, you will assume the risk of a confidentiality breach. Please do not rely on e-mail communication if you or a family member is injured or is experiencing a sudden change in health status.

If you need emergency attention, call 911.

From: Sharon Balter
Sent: Monday, February 24, 2020 10:49 AM PST
To: Duchin, Jeff; Dan Jernigan (dbj0@cdc.gov); Bresee Joseph; Pillai, Satish K. (CDC/DDID/NCEZID/DPEI)
Subject: Re: New CDC Guidance -Clarification needed

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Yes we raised this with a number of people at CDC this weekend who told us there was no change in PUI guidance and this is problematic for us.

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 10:43:58 AM
To: Dan Jernigan (dbj0@cdc.gov) <dbj0@cdc.gov>; Bresee Joseph <jsb6@cdc.gov>; Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Subject: New CDC Guidance -Clarification needed

CAUTION: External Email. Proceed Responsibly.

We need some help ASAP re: new CDC travel guidance that advises returning travelers from expanded list of countries with any level of travel alert to seek health care eval if they develop fever or URI symptoms and mention that they have traveled to an area with community transmission of COVID-19.

Clinicians are calling asking us what they are expected to do with these patients re: movement/monitoring/management/ IC precautions and testing.

I don't see any guidance for public health agencies or clinicians on this.

Thanks very much for your help.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Kay, Meagan
Sent: Friday, February 28, 2020 4:31 PM PST
To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP)
CC: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI); Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD); Chisty, Zeshan (CDC/DDID/NCEZID/DHQP); CDC IMS 2019 NCOV Healthcare Infection Control; Duchin, Jeff
Subject: RE: Assessing risk

Alice,

We have a skilled nursing facility that has a severe respiratory disease outbreak. We have collected specimens on two of them and have a few questions should they turn up positive. Here's a brief summary:

Skilled nursing facility with over 40 ill patients out of 108 patients. 18 ill staff of 179 staff. 6 hospitalized patients and 1 hospitalized staff member. Seven of the patients have had a full workup. So far all testing has been negative on those with a full workup: flu negative, respiratory viral panel negative, bacterial cultures neg, legionella neg. 5 additional with pneumonia and 15 additional patients with SOB and lower respiratory symptoms. Another 15 with milder symptoms. So far no explanation for this outbreak despite substantial testing. We plan to do COVID-19 test on all the hospitalized patients.

- If all negative, do you recommend further testing of the other ill patients in the SNF?
- If any positive, should we test all ill patients and staff there?
- The SNF can't do AIIR so that would mean hospitalizing all ill patients?
- SNF is circular in design –open concept, one floor, single patient rooms. They are implementing flu outbreak control measures currently. Other recommendations?
- If positive, would someone have a chance to talk with us tomorrow? We will have results in the AM.

Thanks
Meagan

From: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>
Sent: Friday, February 28, 2020 12:56 PM
To: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD) <xdc4@cdc.gov>; Chisty, Zeshan (CDC/DDID/NCEZID/DHQP) <pio5@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>
Subject: RE: Assessing risk

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Meagan,

It's unclear whether obtaining an NP/OP (particularly OP) swab would be a procedure likely to generate higher concentrations of respiratory secretions. I guess if it causes the patient to cough, then presumably that would. So the scenario you described (HCP wearing facemask and eye glasses but not goggles, and patient not wearing a facemask) could put this patient in either medium or high risk. Regardless, it would not change management for the HCP since the same action would be taken for medium and high risk exposures:

HCP in any of the risk exposure categories who develop signs or symptoms compatible with COVID-19 must contact their established point of contact (public health authorities or their facility's occupational health program) for medical evaluation prior to returning to work

1. **High- and Medium-risk Exposure Category**

HCP in the **high- or medium-risk category** should undergo active monitoring, including restriction from work in any healthcare setting until 14 days after their last exposure. If they develop any fever (measured temperature $\geq 100.0^{\circ}\text{F}$ or subjective fever) OR respiratory symptoms consistent with COVID-19 (e.g., cough, shortness of breath, sore throat)* they should immediately self-isolate (separate themselves from others) and notify their local or state public health authority and healthcare facility promptly so that they can coordinate consultation and referral to a healthcare provider for further evaluation.

Thanks,

COVID-19 Healthcare Infection Control Team

eocevent220@cdc.gov

From: Kay, Meagan

Sent: Friday, February 28, 2020 3:39:19 PM (UTC-05:00) Eastern Time (US & Canada)

To: Chisty, Zeshan (CDC/DDID/NCEZID/DHQP)

Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI); Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD); CDC IMS 2019 NCOV Healthcare Infection Control

Subject: RE: Assessing risk

Thanks so much. We are still assessing each of the exposure types but we wanted guidance for people with eye glasses not goggles so we could assign risk. If they did NP/OP then that would mean high risk, right?

From: Chisty, Zeshan (CDC/DDID/NCEZID/DHQP) <pio5@cdc.gov>

Sent: Friday, February 28, 2020 12:36 PM

To: Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD) <xdc4@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>

Subject: RE: Assessing risk

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Meagan,

Eye glasses would not count as full eye protection.

Therefore, this would fall under C in our [risk assessment guide](#) (see below) and be medium risk. And I forgot to mention earlier this would include a low threshold for evaluating any symptoms in the provider. Did the provider conduct a NP or OP swab?

C. HCP (with unprotected eyes, nose, <u>or</u> mouth)² who have prolonged close contact with a patient <i>who was not wearing a facemask</i>. Note: A respirator confers a higher level of protection than a facemask. However, they are group together in this scenario because (even if a respirator or facemask was worn) the eyes remain uncovered while having prolonged close contact with a patient <i>who was not wearing a facemask</i>.	Medium	Active	Exclude from work for 14 days after last exposure
--	--------	--------	---

Thanks,

--

COVID-19 Healthcare Infection Control Team
eocevent220@cdc.gov

From: Kay, Meagan
Sent: Friday, February 28, 2020 2:48:18 PM (UTC-05:00) Eastern Time (US & Canada)
To: Chisty, Zeshan (CDC/DDID/NCEZID/DHQP)
Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI); Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD); CDC IMS 2019 NCOV Healthcare Infection Control
Subject: RE: Assessing risk

Thank you! If glasses but not goggles is that still considered wearing eye protection?

From: Chisty, Zeshan (CDC/DDID/NCEZID/DHQP) <pio5@cdc.gov>
Sent: Friday, February 28, 2020 11:41 AM
To: Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD) <xdc4@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>
Subject: Assessing risk

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello Meagan,

I spoke to a few of my colleagues regarding the healthcare provider you were speaking to Satish about, and we believe that this healthcare provider would be considered low risk.

Please let me know if you have any other questions.

Thanks,

--

COVID-19 Healthcare Infection Control Team

eocevent220@cdc.gov

From: Holshue, Michelle L (DOH Fellow)
Sent: Wednesday, February 26, 2020 4:29 PM PST
To: Hollianne, Bruce (DOHi); Duchin, Jeff; Spitters, Christopher (DOHi); Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP)
CC: Lindquist, Scott W (DOH)
Subject: Re: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Great question. Jonathan - correct me if I'm wrong - but we won't be releasing results of the serum testing, correct? This won't be a diagnostic blood draw (we're checking for SARS-CoV-2 antibodies, not viral RNA this time).

When we re-consent people for the blood draw we will make it clear that people will not receive any results. The presence of antibodies won't require any public health action - no quarantine, etc.

From: Hollianne Bruce <hbruce@snohd.org>

Sent: Wednesday, February 26, 2020 3:26:51 PM

To: Holshue, Michelle L (DOH Fellow); Duchin, Jeffery, MD (DOHi); Spitters, Christopher (DOHi); Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP)

Cc: Lindquist, Scott W (DOH)

Subject: RE: Follow up serum from enhanced contact investigation

Hi Michelle,

One question that came to my mind, is who will be giving the contacts their results? Will that fall to us again?

Thanks, Holli

Hollianne Bruce, MPH | Communicable Disease Epidemiologist II | Assessment and Epidemiology
3020 Rucker Avenue, Ste 206 | Everett, WA 98201 | **tel: 425-339-5213** | Fax:425-339-8706



IMPORTANT NOTICE: This email, including any attachment, contains information that may be confidential or privileged, and is intended solely for the entity or individual to whom it is addressed. If you are not the intended recipient, you should delete this message and are hereby notified that any disclosure, copying, or distribution of this message is strictly prohibited. Nothing in this email, including any attachment, is intended to be a legally binding signature.

From: Holshue, Michelle L (DOH Fellow) [mailto:michelle.holshue@doh.wa.gov]
Sent: Wednesday, February 26, 2020 3:01 PM
To: Duchin, Jeffery, MD (DOHi) <jeff.duchin@kingcounty.gov>; Christopher Spitters [External] <christopher.spitters@comcast.net>; Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP) <pgz7@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>
Cc: Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>
Subject: FW: Follow up serum from enhanced contact investigation

Hi Dr. Duchin and Dr. Spitters,

I wanted to update you about the follow-up for the enhanced contact investigation. CDC is planning to send a team back out to our area next week to collect and ship serum specimens. This team will be led by Dr. Dyal (copied here); I'm helping to coordinate this time around.

If it is alright with you, we will start to reach out to the participants from your jurisdictions tomorrow afternoon in order to schedule follow-up blood draws for next week. These will likely take place at people's homes (although if we have the option to set up blood draws at people's work sites that would maintain privacy and facilitate participation, we would love to explore that!)

I'm attaching an information sheet, but please let me know if you have any questions.

Thanks for your help,
Michelle

Michelle L. Holshue, MPH, BSN, RN

LCDR, U.S. Public Health Service
Epidemic Intelligence Service Officer
Office of the State Health Officer
Washington State Department of Health
michelle.holshue@doh.wa.gov
206-418-5418 (ph) | 206-364-1060 (fax)
www.doh.wa.gov

From: Biggs, Holly (CDC/DDID/NCIRD/DVD)
Sent: Sunday, February 23, 2020 10:08 AM
To: 'Duchin, Jeff' <Jeff.Duchin@kingcounty.gov>; Christopher Spitters <christopher.spitters@comcast.net>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: RE: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,
Thank you. We will update when we start in case any questions come in. Nothing else needed from your end – wanted to make sure you were aware and had the opportunity to provide any input/concerns.

Chris, in answer to your question about confirmed cases. There are other protocols under development for case follow up, but these will be raised separately. Right now, we don't have plans to reach out to these folks when we are in WA. For the enhanced contact investigation follow up, we will only reach out to the contacts who we previously interviewed.

Thanks,

Holly

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 3:03 PM
To: Christopher Spitters <christopher.spitters@comcast.net>; Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: Re: Follow up serum from enhanced contact investigation

Holly, sorry I missed your message in my inbox. I don't have concerns about you contact these people. The protocol seems to indicate the contacts have already consented to this - what am I missing?
Please let us know when you start so we can share with our team just in case they get questions.

Thanks much

Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Christopher Spitters <christopher.spitters@comcast.net>
Sent: Saturday, February 22, 2020 11:46 AM
To: Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: Re: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi, Holly.

OK with me...what (if anything) do you need from us beyond being aware of your plans?

Are you already following up with our case(s) or will you be planning to do as set forth in the draft protocol? Would you like me to give him a heads up? Note: one of the Travis AFB→Spokane transfers from the Diamond Princess is also a Snohomish County resident. We do not have a relationship with her and likely will not until she returns home.

Thanks,
Chris

From: "Biggs, Holly (CDC/DDID/NCIRD/DVD)" <xdc6@cdc.gov>
Date: Friday, February 21, 2020 at 9:56 AM
To: "Duchin, Jeff" <jeff.duchin@kingcounty.gov>, Christopher Spitters <christopher.spitters@comcast.net>
Cc: Scott Lindquist <scott.lindquist@doh.wa.gov>, "Chu, Victoria (CDC/DDID/NCIRD/DVD)" <pgz4@cdc.gov>
Subject: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,
I hope you are doing well. I wanted to follow up about the possibility of collecting serum from our group of close case contacts at ~4-6 week timepoint (which is coming up quickly!). The aim of this is to assess a possible immune response to SARS-CoV-2 exposure. We have ~38 people on the list that we would reach out to. This follow up was part of the initial protocol, but of course participation would be voluntary.

If ok with you, we are prepared to coordinate this from Atlanta, including reaching out to those who participated in the initial part of the enhanced contact tracing protocol to ask about participation/consent, and making arrangements for blood collection. We can arrange to send a couple EISOs from Atlanta who were involved in the initial phase to do this follow up blood collection and shipment. We can also share a brief consent form and description of the follow up process that we are currently drafting. Also attached the initial broad protocol.

Thank you for your consideration.

Holly

Holly Biggs, MD, MPH
Medical Epidemiologist
Respiratory Viruses Branch
Division of Viral Diseases
National Center for Immunization and Respiratory Diseases
U.S. Centers for Disease Control and Prevention
Office: 404-639-3989
Email: hbiggs@cdc.gov

From: Kay, Meagan
Sent: Friday, February 28, 2020 6:48 PM PST
To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP); Pillai, Satish K. (CDC/DDID/NCEZID/DPEI); Duchin, Jeff
CC: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Patel, Anita (CDC/DDID/NCIRD/OD); Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP); Perz, Joseph (CDC/DDID/NCEZID/DHQP); Magill, Shelley (CDC/DDID/NCEZID/DHQP); Kabbani, Sarah (CDC/DDID/NCEZID/DHQP); CDC IMS 2019 NCOV Healthcare Infection Control
Subject: Re: Seattle - unexplained severe respiratory illness skilled nursing facility

Alice, Satish, and CDC team. Thank you! I will send an invite for a call tomorrow if any positive results for sure, but even possibly if the first ones come back negative. Is there a good time for a call?

I will pass along the eye protection recommendation. We were told the other recommendations were in place but will confirm again.

Thanks

From: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>
Sent: Friday, February 28, 2020 6:31:12 PM
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP) <vey2@cdc.gov>; Perz, Joseph (CDC/DDID/NCEZID/DHQP) <bzp4@cdc.gov>; Magill, Shelley (CDC/DDID/NCEZID/DHQP) <fxe9@cdc.gov>; Kabbani, Sarah (CDC/DDID/NCEZID/DHQP) <nfq8@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>
Subject: Re: Seattle - unexplained severe respiratory illness skilled nursing facility

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Meagan - I would also recommend to go ahead and use eye protection too in addition to droplet and contact precautions.

Alice

Get [Outlook for iOS](#)

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Friday, February 28, 2020 9:12 PM
To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP); Kay, Meagan K. (CDC kingcounty.gov); Duchin, Jeff (CDC kingcounty.gov)
Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Patel, Anita (CDC/DDID/NCIRD/OD); Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM); Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP); Perz, Joseph (CDC/DDID/NCEZID/DHQP); Magill, Shelley (CDC/DDID/NCEZID/DHQP); Kabbani, Sarah (CDC/DDID/NCEZID/DHQP); CDC IMS 2019 NCOV Healthcare Infection Control
Subject: RE: Seattle - unexplained severe respiratory illness skilled nursing facility

And one more update – just got off phone w/ Stephanie. We all concur with the need for testing for the first two bullets.

Best,
satish

From: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>
Sent: Friday, February 28, 2020 9:02 PM
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPHP/DHDSP) <vey2@cdc.gov>; Perz, Joseph (CDC/DDID/NCEZID/DHQP) <bzp4@cdc.gov>; Magill, Shelley (CDC/DDID/NCEZID/DHQP) <fxe9@cdc.gov>; Kabbani, Sarah (CDC/DDID/NCEZID/DHQP) <nfq8@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>
Subject: RE: Seattle - unexplained severe respiratory illness skilled nursing facility

Hi Meagan,

Yes, we'd be available to talk in the morning. I've copied a few others from the IPC team. I agree with proceeding with testing for SARS-CoV2 given a negative work up thus far (defer to Epi/PUI teams to weigh in). All patients should remain in single patient rooms. I wouldn't necessarily transfer to the hospital for AIIR unless tests are positive and/or patient worsens over night and needs higher level of care. Until we know more, I'd recommend a minimum of droplet and contact precautions, along with standard precautions (eye protection if anticipating splashes, etc.). I'd also ask the facility to not have any ill/symptomatic staff working at this point and to keep the ill residents away from other patients and common areas (stay in their room if possible).

Even if tests are not positive, given the extent of the outbreak, we can still be available to discuss and can pull in our DHQP LTCF colleagues.

Alice

Alice Y. Guh, MD, MPH
CDR, US Public Health Service
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
1600 Clifton Rd NE, MS H16-3, Atlanta, GA 30329-4027
Tel. 404-639-5077, Fax. 404-471-8033
Email. aguh@cdc.gov

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Friday, February 28, 2020 8:08 PM
To: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>; Patel, Anita (CDC/DDID/NCIRD/OD) <bop1@cdc.gov>;

Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zgg7@cdc.gov>; Jones, Christopher D. (CDC/DDNID/NCCDPPH/DHDSP) <vey2@cdc.gov>

Subject: Seattle - unexplained severe respiratory illness skilled nursing facility

Meagan –

I'm including a few others from response, for SA – as questions go beyond IPC, and dovetail into PUI/epi and other component of response. While this is still not a confirmed situation want them to know.

I have thoughts on some of the items below, but they do verge out of MCCM TF so would defer to my epi TF colleagues. We can also be available to talk in am for sure.

Fyi all – preliminary flu, other routine pathogen testing NTD/negative, they are proceeding with SARS-CoV2 testing on at least two individuals. We got outreach re: IPC questions, but wanted you all to know.

From: Kay, Meagan <Meagan.Kay@kingcounty.gov>

Sent: Friday, February 28, 2020 7:32 PM

To: Guh, Alice Y. (CDC/DDID/NCEZID/DHQP) <ggt4@cdc.gov>

Cc: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>; Chatham-Stephens, Kevin (CDC/DDNID/NCBDDD/DHDD) <xdc4@cdc.gov>; Chisty, Zeshan (CDC/DDID/NCEZID/DHQP) <pio5@cdc.gov>; CDC IMS 2019 NCOV Healthcare Infection Control <eocevent220@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>

Subject: RE: Assessing risk

Alice,

We have a skilled nursing facility that has a severe respiratory disease outbreak. We have collected specimens on two of them and have a few questions should they turn up positive. Here's a brief summary:

Skilled nursing facility with over 40 ill patients out of 108 patients. 18 ill staff of 179 staff. 6 hospitalized patients and 1 hospitalized staff member. Seven of the patients have had a full workup. So far all testing has been negative on those with a full workup: flu negative, respiratory viral panel negative, bacterial cultures neg, legionella neg. 5 additional with pneumonia and 15 additional patients with SOB and lower respiratory symptoms. Another 15 with milder symptoms. So far no explanation for this outbreak despite substantial testing. We plan to do COVID-19 test on all the hospitalized patients.

- If all negative, do you recommend further testing of the other ill patients in the SNF? Given evolving epi, I would suggest yes but would defer to my PUI/epi colleagues
- If any positive, should we test all ill patients and staff there? If positive, again would think yes – but again, this should be through epi/PUI discussion
- The SNF can't do AIIR so that would mean hospitalizing all ill patients? This seems contingent on test positive status, right? Alice may have more thoughts on this
- SNF is circular in design –open concept, one floor, single patient rooms. They are implementing flu outbreak control measures currently. Other recommendations? Alice may have thoughts on this;

single room, closed door, masking source patients, appropriate precautions for personnel entering facility seem key.

- If positive, would someone have a chance to talk with us tomorrow? We will have results in the AM.

Yes

Thanks

Meagan

From: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Sent: Monday, February 24, 2020 5:02 PM PST
To: Balter, Sharon (CDC ph.lacounty.gov); Duchin, Jeff; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID); Pillai, Satish K. (CDC/DDID/NCEZID/DPEI)
Subject: RE: New CDC Guidance -Clarification needed

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

All,
Working on an updated PUI defn that will be shared and discussed tomorrow. Hope to have an updated version out tomorrow afternoon or early Wed. Can share a draft for comment with you all. Cc'ing Greg Armstrong, who will be taking over for me for his awareness
Joe

From: Sharon Balter <SBalter@ph.lacounty.gov>
Sent: Monday, February 24, 2020 1:49 PM
To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Subject: Re: New CDC Guidance -Clarification needed

Yes we raised this with a number of people at CDC this weekend who told us there was no change in PUI guidance and this is problematic for us.

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 10:43:58 AM
To: Dan Jernigan (dbj0@cdc.gov) <dbj0@cdc.gov>; Bresee Joseph <jsb6@cdc.gov>; Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Subject: New CDC Guidance -Clarification needed

CAUTION: External Email. Proceed Responsibly.

We need some help ASAP re: new CDC travel guidance that advises returning travelers from expanded list of countries with any level of travel alert to seek health care eval if they develop fever or URI symptoms and mention that they have traveled to an area with community transmission of COVID-19.

Clinicians are calling asking us what they are expected to do with these patients re: movement/monitoring/management/ IC precautions and testing.

I don't see any guidance for public health agencies or clinicians on this.

Thanks very much for your help.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Hollianne Bruce
Sent: Thursday, February 27, 2020 7:42 AM PST
To: Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP); Christopher Spitters [External]; michelle.holshue@doh.wa.gov; Duchin, Jeff
CC: Lindquist, Scott SL (CDC doh.wa.gov)
Subject: RE: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thank you.

Hollianne Bruce, MPH | Communicable Disease Epidemiologist II | Assessment and Epidemiology
3020 Rucker Avenue, Ste 206 | Everett, WA 98201 | **tel: 425-339-5213** | Fax: 425-339-8706



IMPORTANT NOTICE: This email, including any attachment, contains information that may be confidential or privileged, and is intended solely for the entity or individual to whom it is addressed. If you are not the intended recipient, you should delete this message and are hereby notified that any disclosure, copying, or distribution of this message is strictly prohibited. Nothing in this email, including any attachment, is intended to be a legally binding signature.

From: Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP) [mailto:pgz7@cdc.gov]
Sent: Wednesday, February 26, 2020 5:57 PM
To: Christopher Spitters [External] <christopher.spitters@comcast.net>; Holshue, Michelle (CDC doh.wa.gov) <michelle.holshue@doh.wa.gov>; Hollianne Bruce <hbruce@snohd.org>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>
Subject: RE: Follow up serum from enhanced contact investigation

Hi Everyone,

Yes, Michelle is exactly right. We would be testing for antibodies, and would not be releasing results of the testing. There will be no public health actions taken as a result of the testing. We will make sure this is covered both in the initial phone call and during the follow up visit if they consent.

Jon

Jonathan Dyal, MD, MPH
CDC Epidemic Intelligence Service
Viral Special Pathogens Branch
O: +1 (404) 718-3697
F: +1 (404) 471-2575

From: CHRISTOPHER SPITTERS <christopher.spitters@comcast.net>
Sent: Wednesday, February 26, 2020 8:18 PM
To: Holshue, Michelle (CDC doh.wa.gov) <michelle.holshue@doh.wa.gov>; Hollianne, Bruce (DOHi) <hbruce@snohd.org>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP) <pgz7@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>
Subject: Re: Follow up serum from enhanced contact investigation

Thanks, Holli and Michelle. No concerns from my perspective. Forge ahead...
Chris

On February 26, 2020 at 4:29 PM "Holshue, Michelle L (DOH Fellow)" <michelle.holshue@doh.wa.gov> wrote:

Great question. Jonathan - correct me if I'm wrong - but we won't be releasing results of the serum testing, correct? This won't be a diagnostic blood draw (we're checking for SARS-CoV-2 antibodies, not viral RNA this time).

When we re-consent people for the blood draw we will make it clear that people will not receive any results. The presence of antibodies won't require any public health action - no quarantine, etc.

From: Hollianne Bruce <hbruce@snohd.org>
Sent: Wednesday, February 26, 2020 3:26:51 PM
To: Holshue, Michelle L (DOH Fellow); Duchin, Jeffery, MD (DOHi); Spitters, Christopher (DOHi); Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP)
Cc: Lindquist, Scott W (DOH)
Subject: RE: Follow up serum from enhanced contact investigation

Hi Michelle,

One question that came to my mind, is who will be giving the contacts their results? Will that fall to us again?

Thanks, Holli

Hollianne Bruce, MPH | Communicable Disease Epidemiologist II | Assessment and Epidemiology

3020 Rucker Avenue, Ste 206 | Everett, WA 98201 | **tel: 425-339-5213** | Fax: 425-339-8706



IMPORTANT NOTICE: This email, including any attachment, contains information that may be confidential or privileged, and is intended solely for the entity or individual to whom it is addressed. If you are not the intended recipient, you should delete this message and are hereby notified that any disclosure, copying, or distribution of this message is strictly prohibited. Nothing in this email, including any attachment, is intended to be a legally binding signature.

From: Holshue, Michelle L (DOH Fellow) [<mailto:michelle.holshue@doh.wa.gov>]
Sent: Wednesday, February 26, 2020 3:01 PM
To: Duchin, Jeffery, MD (DOHi) <jeff.duchin@kingcounty.gov>; Christopher Spitters [External] <christopher.spitters@comcast.net>; Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP) <pgz7@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>
Cc: Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>
Subject: FW: Follow up serum from enhanced contact investigation

Hi Dr. Duchin and Dr. Spitters,

I wanted to update you about the follow-up for the enhanced contact investigation. CDC is planning to send a team back out to our area next week to collect and ship serum specimens. This team will be led by Dr. Dyal (copied here); I'm helping to coordinate this time around.

If it is alright with you, we will start to reach out to the participants from your jurisdictions tomorrow afternoon in order to schedule follow-up blood draws for next week. These will likely take place at people's homes (although if we have the option to set up blood draws at people's work sites that would maintain privacy and facilitate participation, we would love to explore that!)

I'm attaching an information sheet, but please let me know if you have any questions.

Thanks for your help,

Michelle

Michelle L. Holshue, MPH, BSN, RN

LCDR, U.S. Public Health Service

Epidemic Intelligence Service Officer

Office of the State Health Officer

Washington State Department of Health

michelle.holshue@doh.wa.gov

206-418-5418 (ph) | 206-364-1060 (fax)

www.doh.wa.gov

From: Biggs, Holly (CDC/DDID/NCIRD/DVD)

Sent: Sunday, February 23, 2020 10:08 AM

To: 'Duchin, Jeff' <Jeff.Duchin@kingcounty.gov>; Christopher Spitters
<christopher.spitters@comcast.net>

Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria
(CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker
<cparker@snohd.org>

Subject: RE: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,

Thank you. We will update when we start in case any questions come in. Nothing else needed from your end – wanted to make sure you were aware and had the opportunity to provide any input/concerns.

Chris, in answer to your question about confirmed cases. There are other protocols under development for case follow up, but these will be raised separately. Right now, we don't have plans to reach out to these folks when we are in WA. For the enhanced contact investigation follow up, we will only reach out to the contacts who we previously interviewed.

Thanks,

Holly

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 3:03 PM
To: Christopher Spitters <christopher.spitters@comcast.net>; Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: Re: Follow up serum from enhanced contact investigation

Holly, sorry I missed your message in my inbox. I don't have concerns about you contact these people. The protocol seems to indicate the contacts have already consented to this - what am I missing?

Please let us know when you start so we can share with our team just in case they get questions.

Thanks much

Jeff

Jeffrey S. Duchin, MD (he/him)

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Christopher Spitters <christopher.spitters@comcast.net>
Sent: Saturday, February 22, 2020 11:46 AM
To: Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: Re: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi, Holly.

OK with me...what (if anything) do you need from us beyond being aware of your plans?

Are you already following up with our case(s) or will you be planning to do as set forth in the draft protocol? Would you like me to give him a heads up? Note: one of the Travis AFB→Spokane transfers from the Diamond Princess is also a Snohomish County resident. We do not have a relationship with her and likely will not until she returns home.

Thanks,

Chris

From: "Biggs, Holly (CDC/DDID/NCIRD/DVD)" <xdc6@cdc.gov>
Date: Friday, February 21, 2020 at 9:56 AM
To: "Duchin, Jeff" <jeff.duchin@kingcounty.gov>, Christopher Spitters <christopher.spitters@comcast.net>
Cc: Scott Lindquist <scott.lindquist@doh.wa.gov>, "Chu, Victoria (CDC/DDID/NCIRD/DVD)" <pgz4@cdc.gov>
Subject: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,

I hope you are doing well. I wanted to follow up about the possibility of collecting serum from our group of close case contacts at ~4-6 week timepoint (which is coming up quickly!). The aim of this is to assess a possible immune response to SARS-CoV-2 exposure. We have ~38 people on the list that we would reach out to. This follow up was part of the initial protocol, but of course participation would be voluntary.

If ok with you, we are prepared to coordinate this from Atlanta, including reaching out to those who participated in the initial part of the enhanced contact tracing protocol to ask about participation/consent, and making arrangements for blood collection. We can arrange to send a couple EISOs from Atlanta who were involved in the initial phase to do this follow up blood collection and shipment. We can also share a brief consent form and description of the follow up process that we are currently drafting. Also attached the initial broad protocol.

Thank you for your consideration.

Holly

Holly Biggs, MD, MPH

Medical Epidemiologist

Respiratory Viruses Branch

Division of Viral Diseases

National Center for Immunization and Respiratory Diseases

U.S. Centers for Disease Control and Prevention

Office: 404-639-3989

Email: hbiggs@cdc.gov

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD)
Sent: Thursday, February 27, 2020 8:19 PM PST
To: Duchin, Jeff
CC: Helen Y Chu; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks much Jeff for connecting us. Happy to make the time any time - 7:30 your time is fine but I will wait to see the calendar invite to confirm.

Thanks!

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Thursday, February 27, 2020 11:17:20 PM
To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Cc: Helen Y Chu <helenchu@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>
Subject: SEATTLE Flu Study Lab Result

Wendy,

Thanks for helping us navigate with FDA colleagues what we can say/do in response to a potential positive test result from the SFS research assay. Helen Chu and Jan Englund are the SFS researchers that can provide the details of the test method and other relevant information.

I'm also copying Scott Lindquist, the WA State DOH communicable disease epidemiologist and Karen Cowgill who works on surveillance with us. It probably would be good to have a call early tomorrow Pacific time (7:30) but Helen and Jan should schedule the time with you.

Very much appreciate your help.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Jay Shendure
Sent: Friday, February 28, 2020 4:28 PM PST
To: Scott Dowell
CC: Greg Armstrong (gca3@cdc.gov); Daniel B. Jernigan - CDC (dbj0@cdc.gov); bose@bgc3.com; Sharon Bergquist (Gates Ventures); Dan Wattendorf; Duchin, Jeff
Subject: Re: Seattle flu (Covid-19?) study - introductions

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Many thanks for the introduction, Scott.

Greg, it's terrific to hear those sentiments from the CDC, and we look forward to working with you to find an effective path forward.

It would be great to connect by phone as soon as you have a bit of time. My cell phone is 617-921-7248. Please feel free to just give me a ring or let me know if there would be a best time for you. I can make myself available whenever suits you best.

Jay

On Fri, Feb 28, 2020 at 4:18 PM Scott Dowell <Scott.Dowell@gatesfoundation.org> wrote:

Greg Armstrong let me introduce you to Jay Shendure, co-pi of the Seattle Flu Study. Greg is deputy incident manager for CDC's Covid-19 response. Hoping you two can talk, bringing in relevant colleagues from the UW clinical lab (CLIA-approved for high complexity testing) as needed.

Dan Jernigan and I spoke earlier to touch bases on the new case here and the potentially valuable role of the SFS in future Covid-19 surveillance. He said Greg would be the ideal person to follow up.

I also spoke with SFS colleagues copied, and reassured them that CDC is actually thrilled to have the additional resources of SFS to detect and track Covid-19, and with all of us wants to figure out how to do it with full ethical and regulatory transparency.

I'm sure you can figure out a range of workable solutions. Some relevant points I noted from our discussions so far:

- SFS patients consent to viral testing beyond flu, and the IRB is comfortable that covers Covid-19
- The website is explicit that SFS is working with public health authorities on Covid-19
- Current pace is about 400 patients tested per day

- There is no current expectation that subjects would receive notice of a negative Covid-19 result
- Positives can be referred to the UW clinical lab for approved Covid-19 confirmation

As you follow up feel free to keep me and those copied in the loop.

Thanks all for some quick and productive discussions!

Scott

From: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Sent: Saturday, February 22, 2020 10:56 AM PST
To: Duchin, Jeff; Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Gayle,

Can we add a section in the concept note for de'id'ed sample collection and testing. Not for the note going to FDA, but for the group? Beyond allowing Jeff cover to stand this up, will be good to document the plans in general. I suspect that this document will be added to over time – to include comms plans, for instance. So can treat the document that went to FDA as a static product at this point, but acknowledge that the concept document/protocol may change over time.

Joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 1:26 PM
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Subject: Re: sentinel surveillance updates

OK, is that possible? Not sure we can go forward if this is not consistent with guidance.

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Sent: Saturday, February 22, 2020 10:24 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello Jeff. The guidance was written collecting identified specimens. We did not create guidance for de-identified specimens. --gayle

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 12:56 PM
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Subject: Re: sentinel surveillance updates

I just noticed that the protocol does not have an option for deidentified testing...is that intentional or an omission? I can't move this forward here without the CDC protocol...

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Sent: Thursday, February 20, 2020 1:58 PM
To: Balter, Sharon (CDC health.nyc.gov) <sbalter@health.nyc.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <mlayton@health.nyc.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb <Molly.Lamb@Illinois.gov>; PGounder@ph.lacounty.gov <PGounder@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Sarah Park <sarah.park@doh.hawaii.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgg2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>
Cc: Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello. I have enclosed an updated guidance document that includes information on shipping specimens and an example of an information sheet that you can provide to patients. The guidance document only lists the details of what is planned at 2 sites, but that does not preclude others from starting. They were just used as examples for the EUA submission. A shipping log is also attached. **We are ready to start**

receiving specimens whenever you are ready to send them. We cannot start testing the identified specimens until the EUA is amended, but we believe that will happen quickly. For those that want to send de-identified specimens, we can receive and test them now.

Our questions to you:

1. **Are you planning to send de-identified specimens and when?**
2. **Are you planning to send identifiable specimens and when?**

On the call tomorrow, we will talk about options for data transfer. There will also likely be time to talk about triggers for changing current containment strategies.

Talk to you tomorrow. --gayle

-----Original Appointment-----

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)

Sent: Wednesday, February 19, 2020 5:22 PM

To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD); Balter, Sharon (CDC health.nyc.gov); Bresee, Joseph (CDC/DDID/NCIRD/ID); Christine Mahle; Conover, Craig (CDC illinois.gov); Duchin, Jeff (CDC kingcounty.gov); Ghinai, Isaac; Green, Nicole (CDC ph.lacounty.gov); Hector Rivas; Jain, Seema (CDC cdph.ca.gov); Jessica Sell; Justin DeWitt; Kauerauf, Judy (CDC illinois.gov); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Layden, Jennifer (CDC illinois.gov); Layton, Marci (CDC health.nyc.gov); Lindquist, Scott SL (CDC doh.wa.gov); Meredith Haddix; Molly Lamb; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov); Rose, Laura E. (CDC/DDPHSS/OLSS/OLS); Sarah Park; Thomas-Smith, Evonda; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Weiss, Don (CDC health.nyc.gov); Zahn, Matthew

Cc: Balter, Sharon (CDC ph.lacounty.gov)

Subject: sentinel surveillance updates

When: Friday, February 21, 2020 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: Skype Meeting

[Join Skype Meeting](#)

Trouble Joining? [Try Skype Web App](#)

Join by phone

(404) 553-8912,,37963494# (Atlanta Dial-in Conference Region)

English (United States)

(855) 348-8390,,37963494# (Atlanta Dial-in Conference Region)

English (United States)

[Find a local number](#)

Conference ID: 37963494

[Forgot your dial-in PIN?](#) | [Help](#)

From: Helen Y Chu
Sent: Saturday, February 29, 2020 12:09 PM PST
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD); Cowgill, Karen
CC: Kuhnert-Tallman, Wendi (CDC/DDID/OD); Englund, Janet; Duchin, Jeff
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thank you Gayle. We will work with this.

Helen Y Chu, MD MPH

Division of Allergy & Infectious Diseases

chulab.org

Our new lab location is UW South Lake Union

From: "Langley, Gayle E. (CDC/DDID/NCIRD/DVD)" <fez7@cdc.gov>

Date: Saturday, February 29, 2020 at 12:07 PM

To: Helen Y Chu <helenchu@uw.edu>, "Cowgill, Karen" <n-kcowgill@kingcounty.gov>

Cc: "Kuhnert-Tallman, Wendi (CDC/DDID/OD)" <wdk1@cdc.gov>, "Englund, Janet" <janet.englund@seattlechildrens.org>, Jeff Duchin <jeff.duchin@kingcounty.gov>

Subject: RE: SEATTLE Flu Study Lab Result

Hello Helen. Enclosed is the notification letter that was approved to be used under the CDC's EUA. – Gayle

From: Helen Y Chu <helenchu@uw.edu>

Sent: Saturday, February 29, 2020 2:40 PM

To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>

Cc: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Englund, Janet <janet.englund@seattlechildrens.org>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>

Subject: Re: SEATTLE Flu Study Lab Result

Thanks for the call today. As a quick follow up, could you please send me a **version of the consent form that you would like to use for these studies going forward**? I'm going to try to get this through immediately.

My cell phone number is 617 935 9509.

Helen

Helen Y Chu, MD MPH

Division of Allergy & Infectious Diseases

chulab.org

Our new lab location is UW South Lake Union

From: "Cowgill, Karen" <n-kcowgill@kingcounty.gov>

Date: Saturday, February 29, 2020 at 10:31 AM

To: Jeff Duchin <Jeff.Duchin@kingcounty.gov>, "Stenzel, Timothy" <Timothy.Stenzel@fda.hhs.gov>, Robin A Prentice <robins4@uw.edu>, Mark Rieder <mrieder@uw.edu>, Helen Y Chu <helenchu@uw.edu>, "Langley, Gayle E (CDC)"

<fez7@cdc.gov>, "Kuhnert-Tallman, Wendi L (CDC)" <wdk1@cdc.gov>, "Kay, Meagan" <Meagan.Kay@kingcounty.gov>
Cc: "Janet Englund (janet.englund@seattlechildrens.org)" <janet.englund@seattlechildrens.org>, "scott.lindquist@doh.wa.gov" <scott.lindquist@doh.wa.gov>, "Jay A. Shendure" <shendure@uw.edu>, Trevor Bedford <trevor@bedford.io>, Istarita <Istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

Yes I can join this call on behalf of PHSKC.
Karen

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 29, 2020 10:08:36 AM
To: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>; Robin A Prentice <robins4@uw.edu>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

Hello folks we are overwhelmed here in the public health department and not able to join this call. I'm hoping Karen can join for us. It would be really fantastic if FDA can find a way to allow the SFS study to continue to test a large number of samples to help us understand about community-based transmission especially in light of our current outbreak and other case with no travel history.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>
Sent: Saturday, February 29, 2020 10:01:01 AM
To: Robin A Prentice <robins4@uw.edu>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Sounds good.

From: Robin A Prentice <robins4@uw.edu>
Date: February 29, 2020 at 12:44:15 PM EST
To: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>, Cowgill, Karen <n-kcowgill@kingcounty.gov>, Mark Rieder <mrieder@uw.edu>, Helen Y Chu <helenchu@uw.edu>, Langley, Gayle E (CDC) <fez7@cdc.gov>, Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>, Duchin, Jeff <Jeff.Duchin@kingcounty.gov>, Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>, Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>, Jay A. Shendure <shendure@uw.edu>, Trevor Bedford <trevor@bedford.io>, Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

Hello Tim,

Would it work for us to talk at 11am Pacific time, 2pm Eastern? I will send a zoom invite in a moment.

Robin

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>
Sent: Saturday, February 29, 2020 9:11 AM
To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

Hi,

Can one or more folks from the Seattle Flu Study lab give me a call on my cell 202-308-9464? Leave a VM with number to get back to you right away if it goes to VM.

Thanks!

Best,
Tim

Timothy T. Stenzel, MD, PhD

Director, OHT7: Office of In Vitro Diagnostics and Radiological Health

Office of Product Evaluation and Quality

Center for Devices and Radiological Health
U.S. Food and Drug Administration

Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell

Administrative Assistant

OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality

CDRH | Food and Drug Administration
White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993
Ph: 301-796-7692

jennifer.campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>

Sent: Saturday, February 29, 2020 10:53 AM

To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Hi Karen,

I did connect with Mark a little after an hour yesterday by phone.

Wanted to let you know of this PR and linked new guidance that just was released.

We are still working on your particular situation.

<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-issues-new-policy-help-expedite-availability-diagnostics>

Best,

Tim

Timothy T. Stenzel, MD, PhD

Director, OHT7: Office of In Vitro Diagnostics and Radiological Health

Office of Product Evaluation and Quality

Center for Devices and Radiological Health
U.S. Food and Drug Administration

Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell

Administrative Assistant

OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality

CDRH | Food and Drug Administration
White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993
Ph: 301-796-7692

Jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Cowgill, Karen <n-kcowgill@kingcounty.gov>

Sent: Friday, February 28, 2020 4:46 PM

To: Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Importance: High

Hi Tim, et al. at CDC and Mark, et al. at SFS – Jeff Duchin (Chief Health Officer at Public Health Seattle-King County) asked me to follow up with you about the outcome of our discussion earlier today (9 PT/12 ET) about Seattle Flu Study testing for SARS-CoV-2.

At the end of the call, Tim said he would get back to Mark within the hour, but we haven't heard anything on our end.

Could someone please send a summary of where things stand and specifically

- what the current guidance is about SFS continued testing of samples for nCoV (retrospective and prospective)
- if testing continues, what is the flow of information to public health / re-contacting patients with results
- any other relevant info (e.g., was the lot of the kit SFS used to confirm their initial positive the same lot that CDC had QC'd?)

Thank you,

Karen Cowgill, PhD, MSc *(she/her)*
COVID-19 Response Epidemiologist
Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Affiliate Assistant Professor in Global Health, University of Washington
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-3087; Fax: (206) 296-4803
E-mail: n-kcowgill@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>
Sent: Thursday, February 27, 2020 10:57 PM
To: Helen Y Chu <helenchu@uw.edu>
Cc: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Robin A Prentice <robins4@uw.edu>; Janet Englund <janet.englund@seattlechildrens.org> <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Here is the Zoom link for the call in tomorrow (Friday, 2/28 @ 9 am PT)
Mark Rieder is inviting you to a scheduled Zoom meeting.

Topic: CDC Call
Time: Feb 28, 2020 09:00 AM Pacific Time (US and Canada)

Join Zoom Meeting
<https://washington.zoom.us/j/265821853>

Meeting ID: 265 821 853

One tap mobile
+16699006833,,265821853# US (San Jose)
+16468769923,,265821853# US (New York)

Dial by your location
+1 669 900 6833 US (San Jose)
+1 646 876 9923 US (New York)
Meeting ID: 265 821 853

On Thu, Feb 27, 2020 at 10:50 PM Helen Y Chu <helenchu@uw.edu> wrote:

Let's all plan to be on a 9:00 am call tomorrow to discuss this. Robin, can you set up a zoom call and include whoever else should join from the SFS team.

Thank you.

Get [Outlook for iOS](#)

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Sent: Thursday, February 27, 2020 8:19 PM

To: Duchin, Jeff (CDC kingcounty.gov)

Cc: Helen Y Chu; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen

Subject: Re: SEATTLE Flu Study Lab Result

Thanks much Jeff for connecting us. Happy to make the time any time - 7:30 your time is fine but I will wait to see the calendar invite to confirm.

Thanks!

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Thursday, February 27, 2020 11:17:20 PM

To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Cc: Helen Y Chu <helenchu@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org)
<janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov)

<scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>

Subject: SEATTLE Flu Study Lab Result

Wendy,

Thanks for helping us navigate with FDA colleagues what we can say/do in response to a potential positive test result from the SFS research assay. Helen Chu and Jan Englund are the SFS researchers that can provide the details of the test method and other relevant information. I'm also copying Scott Lindquist, the WA State DOH communicable disease epidemiologist and Karen Cowgill who works on surveillance with us. It probably would be good to have a call early tomorrow Pacific time (7:30) but Helen and Jan should schedule the time with you.

Very much appreciate your help.

Jeff

Jeffrey S. Duchin, MD

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County

Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health

401 5th Ave, Suite 1250, Seattle, WA 98104

Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803

E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Sent: Monday, February 24, 2020 7:04 PM PST
To: Duchin, Jeff
Subject: RE: Research Testing

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Will get an org chart to you. I should know how to find these things, but...

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 8:35 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Subject: Re: Research Testing

Thanks for this and all the other very much appreciated help you've provided to us on this response. Are you rotating off CoV completely? Is there an ORG Chart of CDC response so I don't send every query to the same (wrong) person? Greg will be doing...?

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Monday, February 24, 2020 5:22 PM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Karen Cowgill <kdc8@uw.edu>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Subject: RE: Research Testing

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks. Checking with folks here who know these things better. Will get back with you qwuickly

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, February 24, 2020 7:37 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Karen Cowgill <kdc8@uw.edu>;

Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>

Subject: Fw: Research Testing

Joe - please see below. Confirming CDC OK with research testing by UW/SFS and seeking guidance on if/how results can be communicated.

Thanks - Jeff

Jeffrey S. Duchin, MD (he/him)

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County

Professor in Medicine, Division of Infectious Diseases, University of Washington

Adjunct Professor, School of Public Health

401 5th Ave, Suite 1250, Seattle, WA 98104

Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803

E-mail: jeff.duchin@kingcounty.gov

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Monday, February 24, 2020 4:35 PM

To: Mark J Rieder <mrieder@uw.edu>; Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>

Cc: Robin Prentice <robins4@uw.edu>; Jay Shendure <shendure@gmail.com>; Helen Y Chu <helenchu@uw.edu>; Lea Starita <lstarita@uw.edu>; Paul Nevin <paul.nevin@gatesventures.com>

Subject: Re: Research Testing

Thanks, Mark. As for cleared by CDC, Joe Bresee said he had no objections - I'm not sure if anything more formal is needed. We did not get confirmation from CDC/FDA yet as to whether SFS can report results to any agency or public - will resend that question. Scott - anything to add?

Jeffrey S. Duchin, MD (he/him)

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County

Professor in Medicine, Division of Infectious Diseases, University of Washington

Adjunct Professor, School of Public Health

401 5th Ave, Suite 1250, Seattle, WA 98104

Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803

E-mail: jeff.duchin@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>

Sent: Monday, February 24, 2020 4:25 PM

To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>

Cc: Robin Prentice <robins4@uw.edu>; Jay Shendure <shendure@gmail.com>; Helen Y Chu <helenchu@uw.edu>; Lea Starita <lstarita@uw.edu>; Paul Nevin <paul.nevin@gatesventures.com>

Subject: Research Testing

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Jeff and Scott -

We have had some fragmented email threads, so I want to be clear that we are planning on starting research testing of our SFS samples this week. I am confirming that Jeff has heard from CDC and we are clear to do our SARS-CoV2 testing and that Scott is also aligned.

As I mentioned, any research result will be confirmed with sequencing which would take up to 7 days. Communication of any aggregate research results more broadly would be in partnership with PHSKC, CDC, and WA DOH.

We are setting up a meeting to further discuss results communication this but I want to get your explicit confirmation in advance on testing.

Thanks

Mark

From: Helen Y Chu
Sent: Saturday, February 29, 2020 11:40 AM PST
To: Cowgill, Karen; fez7@cdc.gov
CC: wdk1@cdc.gov; Englund, Janet; Duchin, Jeff
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks for the call today. As a quick follow up, could you please send me a **version of the consent form that you would like to use for these studies going forward?** I'm going to try to get this through immediately.

My cell phone number is 617 935 9509.

Helen

Helen Y Chu, MD MPH

Division of Allergy & Infectious Diseases

chulab.org

Our new lab location is UW South Lake Union

From: "Cowgill, Karen" <n-kcowgill@kingcounty.gov>

Date: Saturday, February 29, 2020 at 10:31 AM

To: Jeff Duchin <Jeff.Duchin@kingcounty.gov>, "Stenzel, Timothy"

<Timothy.Stenzel@fda.hhs.gov>, Robin A Prentice <robins4@uw.edu>, Mark Rieder

<mrieder@uw.edu>, Helen Y Chu <helenchu@uw.edu>, "Langley, Gayle E (CDC)"

<fez7@cdc.gov>, "Kuhnert-Tallman, Wendi L (CDC)" <wdk1@cdc.gov>, "Kay, Meagan"

<Meagan.Kay@kingcounty.gov>

Cc: "Janet Englund" (janet.englund@seattlechildrens.org)"

<janet.englund@seattlechildrens.org>, "scott.lindquist@doh.wa.gov"

<scott.lindquist@doh.wa.gov>, "Jay A. Shendure" <shendure@uw.edu>, Trevor Bedford

<trevor@bedford.io>, Istarita <Istarita@uw.edu>

Subject: Re: SEATTLE Flu Study Lab Result

Yes I can join this call on behalf of PHSKC.

Karen

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Saturday, February 29, 2020 10:08:36 AM

To: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>; Robin A Prentice <robins4@uw.edu>; Cowgill,

Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu

<helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC)

<wdk1@cdc.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>;

Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure

<shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>

Subject: Re: SEATTLE Flu Study Lab Result

Hello folks we are overwhelmed here in the public health department and not able to join this call. I'm hoping Karen can join for us. It would be really fantastic if FDA can find a way to allow the SFS study to continue to test a large number of samples to help us understand about community-based transmission especially in light of our current outbreak and other case with no travel history.

Jeffrey S. Duchin, MD

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>

Sent: Saturday, February 29, 2020 10:01:01 AM

To: Robin A Prentice <robins4@uw.edu>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Janet Englund (<janet.englund@seattlechildrens.org> <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Sounds good.

From: Robin A Prentice <robins4@uw.edu>

Date: February 29, 2020 at 12:44:15 PM EST

To: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>, Cowgill, Karen <n-kcowgill@kingcounty.gov>, Mark Rieder <mrieder@uw.edu>, Helen Y Chu <helenchu@uw.edu>, Langley, Gayle E (CDC) <fez7@cdc.gov>, Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>, Duchin, Jeff <Jeff.Duchin@kingcounty.gov>, Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Janet Englund (<janet.englund@seattlechildrens.org> <janet.englund@seattlechildrens.org>, Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>, Jay A. Shendure <shendure@uw.edu>, Trevor Bedford <trevor@bedford.io>, Istarita <Istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Hello Tim,

Would it work for us to talk at 11am Pacific time, 2pm Eastern? I will send a zoom invite in a moment.

Robin

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>

Sent: Saturday, February 29, 2020 9:11 AM

To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org)
<janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov)
<scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford
<trevor@bedford.io>; Istarita <istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

Hi,

Can one or more folks from the Seattle Flu Study lab give me a call on my cell 202-308-9464? Leave a VM with number to get back to you right away if it goes to VM.

Thanks!

Best,
Tim

Timothy T. Stenzel, MD, PhD

*Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality*

Center for Devices and Radiological Health
U.S. Food and Drug Administration
Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell
Administrative Assistant

**OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality**

CDRH | Food and Drug Administration
White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993
Ph: 301-796-7692
Jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>

Sent: Saturday, February 29, 2020 10:53 AM

To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark J Rieder <mrieder@uw.edu>; Helen Y Chu
<helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC)
<wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan
<Meagan.Kay@kingcounty.gov>

Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org)
<janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov)
<scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford
<trevor@bedford.io>; Istarita <istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Hi Karen,

I did connect with Mark a little after an hour yesterday by phone.

Wanted to let you know of this PR and linked new guidance that just was released.

We are still working on your particular situation.

<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-issues-new-policy-help-expedite-availability-diagnostics>

Best,
Tim

Timothy T. Stenzel, MD, PhD

Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality

Center for Devices and Radiological Health
U.S. Food and Drug Administration
Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell

Administrative Assistant

OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality

CDRH | Food and Drug Administration
White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993
Ph: 301-796-7692
jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Cowgill, Karen <n-kcowgill@kingcounty.gov>

Sent: Friday, February 28, 2020 4:46 PM

To: Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wkd1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Importance: High

Hi Tim, et al. at CDC and Mark, et al. at SFS – Jeff Duchin (Chief Health Officer at Public Health Seattle-King County) asked me to follow up with you about the outcome of our discussion earlier today (9 PT/12 ET) about Seattle Flu Study testing for SARS-CoV-2.

At the end of the call, Tim said he would get back to Mark within the hour, but we haven't heard anything on our end.

Could someone please send a summary of where things stand and specifically

- what the current guidance is about SFS continued testing of samples for nCoV (retrospective and prospective)
- if testing continues, what is the flow of information to public health / re-contacting patients with results
- any other relevant info (e.g., was the lot of the kit SFS used to confirm their initial positive the same lot that CDC had QC'd?)

Thank you,

Karen Cowgill, PhD, MSc *(she/her)*
COVID-19 Response Epidemiologist
Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Affiliate Assistant Professor in Global Health, University of Washington
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-3087; Fax: (206) 296-4803
E-mail: n-kcowgill@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>
Sent: Thursday, February 27, 2020 10:57 PM
To: Helen Y Chu <helenchu@uw.edu>
Cc: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Robin A Prentice <robins4@uw.edu>; Janet Englund <janet.englund@seattlechildrens.org> <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Here is the Zoom link for the call in tomorrow (Friday, 2/28 @ 9 am PT)
Mark Rieder is inviting you to a scheduled Zoom meeting.

Topic: CDC Call
Time: Feb 28, 2020 09:00 AM Pacific Time (US and Canada)

Join Zoom Meeting
<https://washington.zoom.us/j/265821853>

Meeting ID: 265 821 853

One tap mobile
+16699006833,,265821853# US (San Jose)

+16468769923,,265821853# US (New York)

Dial by your location

+1 669 900 6833 US (San Jose)

+1 646 876 9923 US (New York)

Meeting ID: 265 821 853

On Thu, Feb 27, 2020 at 10:50 PM Helen Y Chu <helenchu@uw.edu> wrote:

Let's all plan to be on a 9:00 am call tomorrow to discuss this. Robin, can you set up a zoom call and include whoever else should join from the SFS team.

Thank you.

Get [Outlook for iOS](#)

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Sent: Thursday, February 27, 2020 8:19 PM

To: Duchin, Jeff (CDC kingcounty.gov)

Cc: Helen Y Chu; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen

Subject: Re: SEATTLE Flu Study Lab Result

Thanks much Jeff for connecting us. Happy to make the time any time - 7:30 your time is fine but I will wait to see the calendar invite to confirm.

Thanks!

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Thursday, February 27, 2020 11:17:20 PM

To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>

Cc: Helen Y Chu <helenchu@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org)

<janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov)

<scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>

Subject: SEATTLE Flu Study Lab Result

Wendy,

Thanks for helping us navigate with FDA colleagues what we can say/do in response to a potential positive test result from the SFS research assay. Helen Chu and Jan Englund are the SFS researchers that can provide the details of the test method and other relevant information. I'm also copying Scott Lindquist, the WA State DOH communicable disease epidemiologist and Karen Cowgill who works on surveillance with us. It probably would be good to have a call early tomorrow Pacific time (7:30) but Helen and Jan should schedule the time with you.

Very much appreciate your help.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Sent: Saturday, February 22, 2020 6:03 AM PST
To: Bresee, Joseph (CDC/DDID/NCIRD/ID); Duchin, Jeff
Subject: RE: Sentinel Surveillance

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello. We can clarify what is meant by genetic tests. --gayle

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Saturday, February 22, 2020 9:02 AM
To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: RE: Sentinel Surveillance

Jeff, yes, we can accept nasal swabs for surveillance either from prospective or retrospective samples. See below for other thoughts –
joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Friday, February 21, 2020 11:28 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: Sentinel Surveillance

Joe, Gayle,

Had a discussion with Seattle Flu Study (SFS) team tonight. Because subjects were not consented for follow-up implications of COVID-19 infection they are only able to provide de-identified specimens at this time. We will draft a proposal for submission of de-identified specimens if we get the word that aliquots from nasal swabs are permissible. **Yes, this is acceptable** Will want to work with your communications team and the other jurisdictions doing de-identified testing to have a consistent message with CDC commenting in the event of a positive. **working on something this weekend. Will share with the group**

Also want to confirm with you that the UW researchers are free to test their study specimens using their own in-house assay as long as they do not report results to patient or clinician. **That is Ok with us.** Can they inform me and/or WA DOH of their results as long as we do not use them as the basis for any action? **My understanding (but will check again) is that you cant use for clinical decisions or actions for the person, but I think it is OK to inform public health actions for a population. Will ask around again this AM** We would need to be sure they are not able to link their result to the specimens submitted to CDC. I also serve as an advisor to SFS, that makes it a bit complicated (or maybe less complicated?).

And finally, the patient info form says no genetic testing will be done on the specimen, although that would preclude viral genetic analysis. I assume you meant no genetic testing on human DNA, not viral RNA - if so, perhaps that should be clarified?**let Gayle responsd**

I am also exploring prospective surveillance with other community clinics.**Thanks**

Thanks for your help.

Jeff

(PS - Gayle - I just figured out your name change because my auto-populate email system pulls up your prior surname when I enter fez7 - so, hello, nice to be working with you!

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Armstrong, Gregory (CDC/DDID/NCEZID/OD)
Sent: Saturday, February 29, 2020 9:02 AM PST
To: Jay Shendure; Scott Dowell
CC: bose@bgc3.com; Sharon Bergquist (Gates Ventures); Dan Wattendorf; Duchin, Jeff
Subject: RE: Seattle flu (Covid-19?) study - introductions

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Jay—I tried calling the number below but it appears to be out of service. If you have a minute, call me at 404-378-0742.

Greg

Gregory Armstrong, MD | currently assigned to CDC Coronavirus Response as Deputy Incident Manager | garmstrong@cdc.gov

From: Jay Shendure <shendure@gmail.com>
Sent: Friday, February 28, 2020 7:29 PM
To: Scott Dowell <Scott.Dowell@gatesfoundation.org>
Cc: Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; bose@bgc3.com; Sharon Bergquist (Gates Ventures) <Sharon.Bergquist@gatesventures.com>; Dan Wattendorf <Dan.Wattendorf@gatesfoundation.org>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: Re: Seattle flu (Covid-19?) study - introductions

Many thanks for the introduction, Scott.

Greg, it's terrific to hear those sentiments from the CDC, and we look forward to working with you to find an effective path forward.

It would be great to connect by phone as soon as you have a bit of time. My cell phone is 617-921-7248. Please feel free to just give me a ring or let me know if there would be a best time for you. I can make myself available whenever suits you best.

Jay

On Fri, Feb 28, 2020 at 4:18 PM Scott Dowell <Scott.Dowell@gatesfoundation.org> wrote:

Greg Armstrong let me introduce you to Jay Shendure, co-pi of the Seattle Flu Study. Greg is deputy incident manager for CDC's Covid-19 response. Hoping you two can talk, bringing in relevant colleagues from the UW clinical lab (CLIA-approved for high complexity testing) as needed.

Dan Jernigan and I spoke earlier to touch bases on the new case here and the potentially valuable role of the SFS in future Covid-19 surveillance. He said Greg would be the ideal person to follow up.

I also spoke with SFS colleagues copied, and reassured them that CDC is actually thrilled to have the additional resources of SFS to detect and track Covid-19, and with all of us wants to figure out how to do it with full ethical and regulatory transparency.

I'm sure you can figure out a range of workable solutions. Some relevant points I noted from our discussions so far:

- SFS patients consent to viral testing beyond flu, and the IRB is comfortable that covers Covid-19
- The website is explicit that SFS is working with public health authorities on Covid-19
- Current pace is about 400 patients tested per day
- There is no current expectation that subjects would receive notice of a negative Covid-19 result
- Positives can be referred to the UW clinical lab for approved Covid-19 confirmation

As you follow up feel free to keep me and those copied in the loop.

Thanks all for some quick and productive discussions!
Scott

From: Biggs, Holly (CDC/DDID/NCIRD/DVD)
Sent: Saturday, February 22, 2020 12:03 PM PST
To: Duchin, Jeff
Subject: Automatic reply: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

I am currently supporting the COVID-19 response. I may be delayed in getting back to you. For urgent matters, please call 404-354-9668. Thank you, Holly

From: Hollianne Bruce
Sent: Wednesday, February 26, 2020 3:26 PM PST
To: michelle.holshue@doh.wa.gov; Duchin, Jeff; Christopher Spitters [External]; Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP)
CC: Lindquist, Scott W (DOH)
Subject: RE: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Michelle,

One question that came to my mind, is who will be giving the contacts their results? Will that fall to us again?

Thanks, Holli

Hollianne Bruce, MPH | Communicable Disease Epidemiologist II | Assessment and Epidemiology
3020 Rucker Avenue, Ste 206 | Everett, WA 98201 | **tel: 425-339-5213** | Fax:425-339-8706



IMPORTANT NOTICE: This email, including any attachment, contains information that may be confidential or privileged, and is intended solely for the entity or individual to whom it is addressed. If you are not the intended recipient, you should delete this message and are hereby notified that any disclosure, copying, or distribution of this message is strictly prohibited. Nothing in this email, including any attachment, is intended to be a legally binding signature.

From: Holshue, Michelle L (DOH Fellow) [mailto:michelle.holshue@doh.wa.gov]
Sent: Wednesday, February 26, 2020 3:01 PM
To: Duchin, Jeffery, MD (DOH) <jeff.duchin@kingcounty.gov>; Christopher Spitters [External] <christopher.spitters@comcast.net>; Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP) <pgz7@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>
Cc: Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>
Subject: FW: Follow up serum from enhanced contact investigation

Hi Dr. Duchin and Dr. Spitters,

I wanted to update you about the follow-up for the enhanced contact investigation. CDC is planning to send a team back out to our area next week to collect and ship serum specimens. This team will be led by Dr. Dyal (copied here); I'm helping to coordinate this time around.

If it is alright with you, we will start to reach out to the participants from your jurisdictions tomorrow afternoon in order to schedule follow-up blood draws for next week. These will likely take place at people's homes (although if we have the option to set up blood draws at people's work sites that would maintain privacy and facilitate participation, we would love to explore that!)

I'm attaching an information sheet, but please let me know if you have any questions.

Thanks for your help,
Michelle

Michelle L. Holshue, MPH, BSN, RN
LCDR, U.S. Public Health Service
Epidemic Intelligence Service Officer
Office of the State Health Officer
Washington State Department of Health
michelle.holshue@doh.wa.gov
206-418-5418 (ph) | 206-364-1060 (fax)
www.doh.wa.gov

From: Biggs, Holly (CDC/DDID/NCIRD/DVD)
Sent: Sunday, February 23, 2020 10:08 AM
To: 'Duchin, Jeff' <Jeff.Duchin@kingcounty.gov>; Christopher Spitters <christopher.spitters@comcast.net>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: RE: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,
Thank you. We will update when we start in case any questions come in. Nothing else needed from your end – wanted to make sure you were aware and had the opportunity to provide any input/concerns.

Chris, in answer to your question about confirmed cases. There are other protocols under development for case follow up, but these will be raised separately. Right now, we don't have plans to reach out to these folks when we are in WA. For the enhanced contact investigation follow up, we will only reach out to the contacts who we previously interviewed.

Thanks,
Holly

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 3:03 PM
To: Christopher Spitters <christopher.spitters@comcast.net>; Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: Re: Follow up serum from enhanced contact investigation

Holly, sorry I missed your message in my inbox. I don't have concerns about you contact these people. The protocol seems to indicate the contacts have already consented to this - what am I missing?

Please let us know when you start so we can share with our team just in case they get questions.

Thanks much

Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Christopher Spitters <christopher.spitters@comcast.net>
Sent: Saturday, February 22, 2020 11:46 AM
To: Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: Re: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi, Holly.

OK with me...what (if anything) do you need from us beyond being aware of your plans?

Are you already following up with our case(s) or will you be planning to do as set forth in the draft protocol? Would you like me to give him a heads up? Note: one of the Travis AFB→Spokane transfers from the Diamond Princess is also a Snohomish County resident. We do not have a relationship with her and likely will not until she returns home.

Thanks,
Chris

From: "Biggs, Holly (CDC/DDID/NCIRD/DVD)" <xdc6@cdc.gov>
Date: Friday, February 21, 2020 at 9:56 AM

To: "Duchin, Jeff" <jeff.duchin@kingcounty.gov>, Christopher Spitters
<christopher.spitters@comcast.net>
Cc: Scott Lindquist <scott.lindquist@doh.wa.gov>, "Chu, Victoria (CDC/DDID/NCIRD/DVD)"
<pgz4@cdc.gov>
Subject: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,

I hope you are doing well. I wanted to follow up about the possibility of collecting serum from our group of close case contacts at ~4-6 week timepoint (which is coming up quickly!). The aim of this is to assess a possible immune response to SARS-CoV-2 exposure. We have ~38 people on the list that we would reach out to. This follow up was part of the initial protocol, but of course participation would be voluntary.

If ok with you, we are prepared to coordinate this from Atlanta, including reaching out to those who participated in the initial part of the enhanced contact tracing protocol to ask about participation/consent, and making arrangements for blood collection. We can arrange to send a couple EISOs from Atlanta who were involved in the initial phase to do this follow up blood collection and shipment. We can also share a brief consent form and description of the follow up process that we are currently drafting. Also attached the initial broad protocol.

Thank you for your consideration.

Holly

Holly Biggs, MD, MPH
Medical Epidemiologist
Respiratory Viruses Branch
Division of Viral Diseases
National Center for Immunization and Respiratory Diseases
U.S. Centers for Disease Control and Prevention
Office: 404-639-3989
Email: hbiggs@cdc.gov

From: Biggs, Holly (CDC/DDID/NCIRD/DVD)
Sent: Sunday, February 23, 2020 7:08 AM PST
To: Duchin, Jeff; Christopher Spitters
CC: Lindquist, Scott SL (CDC doh.wa.gov); Chu, Victoria (CDC/DDID/NCIRD/DVD); Hollianne Bruce; Carrie Parker
Subject: RE: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Jeff and Chris,

Thank you. We will update when we start in case any questions come in. Nothing else needed from your end – wanted to make sure you were aware and had the opportunity to provide any input/concerns.

Chris, in answer to your question about confirmed cases. There are other protocols under development for case follow up, but these will be raised separately. Right now, we don't have plans to reach out to these folks when we are in WA. For the enhanced contact investigation follow up, we will only reach out to the contacts who we previously interviewed.

Thanks,
Holly

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 3:03 PM
To: Christopher Spitters <christopher.spitters@comcast.net>; Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: Re: Follow up serum from enhanced contact investigation

Holly, sorry I missed your message in my inbox. I don't have concerns about you contact these people. The protocol seems to indicate the contacts have already consented to this - what am I missing?

Please let us know when you start so we can share with our team just in case they get questions.

Thanks much

Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104

Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Christopher Spitters <christopher.spitters@comcast.net>
Sent: Saturday, February 22, 2020 11:46 AM
To: Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: Re: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi, Holly.

OK with me...what (if anything) do you need from us beyond being aware of your plans?

Are you already following up with our case(s) or will you be planning to do as set forth in the draft protocol? Would you like me to give him a heads up? Note: one of the Travis AFB→Spokane transfers from the Diamond Princess is also a Snohomish County resident. We do not have a relationship with her and likely will not until she returns home.

Thanks,
Chris

From: "Biggs, Holly (CDC/DDID/NCIRD/DVD)" <xdc6@cdc.gov>
Date: Friday, February 21, 2020 at 9:56 AM
To: "Duchin, Jeff" <jeff.duchin@kingcounty.gov>, Christopher Spitters <christopher.spitters@comcast.net>
Cc: Scott Lindquist <scott.lindquist@doh.wa.gov>, "Chu, Victoria (CDC/DDID/NCIRD/DVD)" <pgz4@cdc.gov>
Subject: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,

I hope you are doing well. I wanted to follow up about the possibility of collecting serum from our group of close case contacts at ~4-6 week timepoint (which is coming up quickly!). The aim of this is to assess a possible immune response to SARS-CoV-2 exposure. We have ~38 people on the list that we would reach out to. This follow up was part of the initial protocol, but of course participation would be voluntary.

If ok with you, we are prepared to coordinate this from Atlanta, including reaching out to those who participated in the initial part of the enhanced contact tracing protocol to ask about

participation/consent, and making arrangements for blood collection. We can arrange to send a couple EISOs from Atlanta who were involved in the initial phase to do this follow up blood collection and shipment. We can also share a brief consent form and description of the follow up process that we are currently drafting. Also attached the initial broad protocol.

Thank you for your consideration.

Holly

Holly Biggs, MD, MPH
Medical Epidemiologist
Respiratory Viruses Branch
Division of Viral Diseases
National Center for Immunization and Respiratory Diseases
U.S. Centers for Disease Control and Prevention
Office: 404-639-3989
Email: hbiggs@cdc.gov

From: CHRISTOPHER SPITTERS
Sent: Wednesday, February 26, 2020 5:17 PM PST
To: michelle.holshue@doh.wa.gov; Hollianne, Bruce (DOHi); Duchin, Jeff; Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP)
CC: Lindquist, Scott W (DOH)
Subject: Re: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks, Holli and Michelle. No concerns from my perspective. Forge ahead...
Chris

On February 26, 2020 at 4:29 PM "Holshue, Michelle L (DOH Fellow)"
<michelle.holshue@doh.wa.gov> wrote:

Great question. Jonathan - correct me if I'm wrong - but we won't be releasing results of the serum testing, correct? This won't be a diagnostic blood draw (we're checking for SARS-CoV-2 antibodies, not viral RNA this time).

When we re-consent people for the blood draw we will make it clear that people will not receive any results. The presence of antibodies won't require any public health action - no quarantine, etc.

From: Hollianne Bruce <hbruce@snohd.org>
Sent: Wednesday, February 26, 2020 3:26:51 PM
To: Holshue, Michelle L (DOH Fellow); Duchin, Jeffery, MD (DOHi); Spitters, Christopher (DOHi); Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP)
Cc: Lindquist, Scott W (DOH)
Subject: RE: Follow up serum from enhanced contact investigation

Hi Michelle,

One question that came to my mind, is who will be giving the contacts their results? Will that fall to us again?

Thanks, Holli

Hollianne Bruce, MPH | Communicable Disease Epidemiologist II | Assessment and Epidemiology



IMPORTANT NOTICE: This email, including any attachment, contains information that may be confidential or privileged, and is intended solely for the entity or individual to whom it is addressed. If you are not the intended recipient, you should delete this message and are hereby notified that any disclosure, copying, or distribution of this message is strictly prohibited. Nothing in this email, including any attachment, is intended to be a legally binding signature.

From: Holshue, Michelle L (DOH Fellow) [mailto:michelle.holshue@doh.wa.gov]
Sent: Wednesday, February 26, 2020 3:01 PM
To: Duchin, Jeffery, MD (DOHi) <jeff.duchin@kingcounty.gov>; Christopher Spitters [External] <christopher.spitters@comcast.net>; Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP) <pgz7@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>
Cc: Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>
Subject: FW: Follow up serum from enhanced contact investigation

Hi Dr. Duchin and Dr. Spitters,

I wanted to update you about the follow-up for the enhanced contact investigation. CDC is planning to send a team back out to our area next week to collect and ship serum specimens. This team will be led by Dr. Dyal (copied here); I'm helping to coordinate this time around.

If it is alright with you, we will start to reach out to the participants from your jurisdictions tomorrow afternoon in order to schedule follow-up blood draws for next week. These will likely take place at people's homes (although if we have the option to set up blood draws at people's work sites that would maintain privacy and facilitate participation, we would love to explore that!)

I'm attaching an information sheet, but please let me know if you have any questions.

Thanks for your help,

Michelle

Michelle L. Holshue, MPH, BSN, RN

LCDR, U.S. Public Health Service

Epidemic Intelligence Service Officer

Office of the State Health Officer

Washington State Department of Health

michelle.holshue@doh.wa.gov

206-418-5418 (ph) | 206-364-1060 (fax)

www.doh.wa.gov

From: Biggs, Holly (CDC/DDID/NCIRD/DVD)

Sent: Sunday, February 23, 2020 10:08 AM

To: 'Duchin, Jeff' <Jeff.Duchin@kingcounty.gov>; Christopher Spitters
<christopher.spitters@comcast.net>

Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria
(CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>;
Carrie Parker <cparker@snohd.org>

Subject: RE: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,

Thank you. We will update when we start in case any questions come in. Nothing else needed from your end – wanted to make sure you were aware and had the opportunity to provide any input/concerns.

Chris, in answer to your question about confirmed cases. There are other protocols under development for case follow up, but these will be raised separately. Right now, we don't have plans to reach out to these folks when we are in WA. For the enhanced contact investigation follow up, we will only reach out to the contacts who we previously interviewed.

Thanks,

Holly

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Saturday, February 22, 2020 3:03 PM

To: Christopher Spitters <christopher.spitters@comcast.net>; Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>

Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>

Subject: Re: Follow up serum from enhanced contact investigation

Holly, sorry I missed your message in my inbox. I don't have concerns about you contact these people. The protocol seems to indicate the contacts have already consented to this - what am I missing?

Please let us know when you start so we can share with our team just in case they get questions.

Thanks much

Jeff

Jeffrey S. Duchin, MD (he/him)

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104

Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Christopher Spitters <christopher.spitters@comcast.net>
Sent: Saturday, February 22, 2020 11:46 AM
To: Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: Re: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi, Holly.

OK with me...what (if anything) do you need from us beyond being aware of your plans?

Are you already following up with our case(s) or will you be planning to do as set forth in the draft protocol? Would you like me to give him a heads up? Note: one of the Travis AFB→Spokane transfers from the Diamond Princess is also a Snohomish County resident. We do not have a relationship with her and likely will not until she returns home.

Thanks,

Chris

From: "Biggs, Holly (CDC/DDID/NCIRD/DVD)" <xdc6@cdc.gov>
Date: Friday, February 21, 2020 at 9:56 AM
To: "Duchin, Jeff" <jeff.duchin@kingcounty.gov>, Christopher Spitters

<christopher.spitters@comcast.net>

Cc: Scott Lindquist <scott.lindquist@doh.wa.gov>, "Chu, Victoria (CDC/DDID/NCIRD/DVD)" <pgz4@cdc.gov>

Subject: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,

I hope you are doing well. I wanted to follow up about the possibility of collecting serum from our group of close case contacts at ~4-6 week timepoint (which is coming up quickly!). The aim of this is to assess a possible immune response to SARS-CoV-2 exposure. We have ~38 people on the list that we would reach out to. This follow up was part of the initial protocol, but of course participation would be voluntary.

If ok with you, we are prepared to coordinate this from Atlanta, including reaching out to those who participated in the initial part of the enhanced contact tracing protocol to ask about participation/consent, and making arrangements for blood collection. We can arrange to send a couple EISOs from Atlanta who were involved in the initial phase to do this follow up blood collection and shipment. We can also share a brief consent form and description of the follow up process that we are currently drafting. Also attached the initial broad protocol.

Thank you for your consideration.

Holly

Holly Biggs, MD, MPH

Medical Epidemiologist

Respiratory Viruses Branch

Division of Viral Diseases

National Center for Immunization and Respiratory Diseases

U.S. Centers for Disease Control and Prevention

Office: 404-639-3989

Email: hbiggs@cdc.gov

From: Armstrong, Gregory (CDC/DDID/NCEZID/OD)
Sent: Saturday, February 29, 2020 9:03 AM PST
To: Duchin, Jeff
Subject: FW: Seattle flu (Covid-19?) study - introductions

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Jeff—Are you available to talk briefly about this this morning. This seems like an excellent opportunity to get A LOT of useful information.

Thanks,
Greg
404.378.0742

Gregory Armstrong, MD | currently assigned to CDC Coronavirus Response as Deputy Incident Manager | garmstrong@cdc.gov

From: Jay Shendure <shendure@gmail.com>
Sent: Friday, February 28, 2020 7:29 PM
To: Scott Dowell <Scott.Dowell@gatesfoundation.org>
Cc: Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; bose@bgc3.com; Sharon Bergquist (Gates Ventures) <Sharon.Bergquist@gatesventures.com>; Dan Wattendorf <Dan.Wattendorf@gatesfoundation.org>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: Re: Seattle flu (Covid-19?) study - introductions

Many you for the introduction, Scott.

Greg, it's terrific to hear those sentiments from the CDC, and we look forward to working with you to find an effective path forward.

It would be great to connect by phone as soon as you have a bit of time. My cell phone is 617-921-7248. Please feel free to just give me a ring or let me know if there would be a best time for you. I can make myself available whenever suits you best.

Jay

On Fri, Feb 28, 2020 at 4:18 PM Scott Dowell <Scott.Dowell@gatesfoundation.org> wrote:

Greg Armstrong let me introduce you to Jay Shendure, co-pi of the Seattle Flu Study. Greg is deputy incident manager for CDC's Covid-19 response. Hoping you two can talk, bringing in relevant colleagues from the UW clinical lab (CLIA-approved for high complexity testing) as needed.

Dan Jernigan and I spoke earlier to touch bases on the new case here and the potentially valuable role of the SFS in future Covid-19 surveillance. He said Greg would be the ideal person to follow up.

I also spoke with SFS colleagues copied, and reassured them that CDC is actually thrilled to have the additional resources of SFS to detect and track Covid-19, and with all of us wants to figure out how to do it with full ethical and regulatory transparency.

I'm sure you can figure out a range of workable solutions. Some relevant points I noted from our discussions so far:

- SFS patients consent to viral testing beyond flu, and the IRB is comfortable that covers Covid-19
- The website is explicit that SFS is working with public health authorities on Covid-19
- Current pace is about 400 patients tested per day
- There is no current expectation that subjects would receive notice of a negative Covid-19 result
- Positives can be referred to the UW clinical lab for approved Covid-19 confirmation

As you follow up feel free to keep me and those copied in the loop.

Thanks all for some quick and productive discussions!
Scott

From: Christopher Spitters
Sent: Saturday, February 22, 2020 11:46 AM PST
To: Biggs, Holly (CDC/DDID/NCIRD/DVD); Duchin, Jeff
CC: Lindquist, Scott SL (CDC doh.wa.gov); Chu, Victoria (CDC/DDID/NCIRD/DVD); Hollianne Bruce; Carrie Parker
Subject: Re: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi, Holly.

OK with me...what (if anything) do you need from us beyond being aware of your plans?

Are you already following up with our case(s) or will you be planning to do as set forth in the draft protocol? Would you like me to give him a heads up? Note: one of the Travis AFB→Spokane transfers from the Diamond Princess is also a Snohomish County resident. We do not have a relationship with her and likely will not until she returns home.

Thanks,
Chris

From: "Biggs, Holly (CDC/DDID/NCIRD/DVD)" <xdc6@cdc.gov>
Date: Friday, February 21, 2020 at 9:56 AM
To: "Duchin, Jeff" <jeff.duchin@kingcounty.gov>, Christopher Spitters <christopher.spitters@comcast.net>
Cc: Scott Lindquist <scott.lindquist@doh.wa.gov>, "Chu, Victoria (CDC/DDID/NCIRD/DVD)" <pgz4@cdc.gov>
Subject: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,

I hope you are doing well. I wanted to follow up about the possibility of collecting serum from our group of close case contacts at ~4-6 week timepoint (which is coming up quickly!). The aim of this is to assess a possible immune response to SARS-CoV-2 exposure. We have ~38 people on the list that we would reach out to. This follow up was part of the initial protocol, but of course participation would be voluntary.

If ok with you, we are prepared to coordinate this from Atlanta, including reaching out to those who participated in the initial part of the enhanced contact tracing protocol to ask about participation/consent, and making arrangements for blood collection. We can arrange to send a couple EISOs from Atlanta who were involved in the initial phase to do this follow up blood collection and shipment. We can also share a brief consent form and description of the follow up process that we are currently drafting. Also attached the initial broad protocol.

Thank you for your consideration.

Holly

Holly Biggs, MD, MPH
Medical Epidemiologist
Respiratory Viruses Branch
Division of Viral Diseases
National Center for Immunization and Respiratory Diseases
U.S. Centers for Disease Control and Prevention
Office: 404-639-3989
Email: hbiggs@cdc.gov

From: Scott Dowell
Sent: Friday, February 28, 2020 4:18 PM PST
To: Greg Armstrong (gca3@cdc.gov); shendure@gmail.com; shendure@uw.edu
CC: Daniel B. Jernigan - CDC (dbj0@cdc.gov); bose@bgc3.com; Sharon Bergquist (Gates Ventures); Dan Wattendorf; Duchin, Jeff
Subject: Seattle flu (Covid-19?) study - introductions

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Greg Armstrong let me introduce you to Jay Shendure, co-pi of the Seattle Flu Study. Greg is deputy incident manager for CDC's Covid-19 response. Hoping you two can talk, bringing in relevant colleagues from the UW clinical lab (CLIA-approved for high complexity testing) as needed.

Dan Jernigan and I spoke earlier to touch bases on the new case here and the potentially valuable role of the SFS in future Covid-19 surveillance. He said Greg would be the ideal person to follow up.

I also spoke with SFS colleagues copied, and reassured them that CDC is actually thrilled to have the additional resources of SFS to detect and track Covid-19, and with all of us wants to figure out how to do it with full ethical and regulatory transparency.

I'm sure you can figure out a range of workable solutions. Some relevant points I noted from our discussions so far:

- SFS patients consent to viral testing beyond flu, and the IRB is comfortable that covers Covid-19
- The website is explicit that SFS is working with public health authorities on Covid-19
- Current pace is about 400 patients tested per day
- There is no current expectation that subjects would receive notice of a negative Covid-19 result
- Positives can be referred to the UW clinical lab for approved Covid-19 confirmation

As you follow up feel free to keep me and those copied in the loop.

Thanks all for some quick and productive discussions!
Scott

From: Perz, Joseph (CDC/DDID/NCEZID/DHQP)
Sent: Friday, February 28, 2020 11:57 PM PST
To: Duchin, Jeff
Subject: Automatic reply: Epi-AID Request

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks for your message. I am working on COVID-19 response. Replies for other issues may be delayed. For questions regarding HAI/AR ELC activities, please contact HAJAR@cdc.gov. For questions regarding healthcare-associated outbreak issues, please contact the HAI outbreak duty officer on call at haioutbreak@cdc.gov.

From: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Sent: Saturday, February 22, 2020 11:02 AM PST
To: Duchin, Jeff; Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Yep, agree. Gayle – I think that we might remind all collaborators that if they can't stand up their prospective surveillance sites until late next week, they may send already collected deidentified samples sooner – as long as you all have worked through the labelling, shipping issues.

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 2:01 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: Re: sentinel surveillance updates

It would be very important that this be viewed as a legit and important alternative to identified

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Saturday, February 22, 2020 10:59 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

I heard yesterday that at least you, HI and NYC were going that way. Not sure about the others. Gayle?

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 1:58 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: Re: sentinel surveillance updates

Aren't other sites also doing deidentified? I thought NYC, CA and CHI?

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Saturday, February 22, 2020 10:56 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Gayle,
Can we add a section in the concept note for de'id'ed sample collection and testing. Not for the note going to FDA, but for the group? Beyond allowing Jeff cover to stand this up, will be good to document the plans in general. I suspect that this document will be added to over time – to include comms plans, for instance. So can treat the document that went to FDA as a static product at this point, but acknowledge that the concept document/protocol may change over time.
Joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 1:26 PM
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Subject: Re: sentinel surveillance updates

OK, is that possible? Not sure we can go forward if this is not consistent with guidance.

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>

Sent: Saturday, February 22, 2020 10:24 AM

To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>

Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello Jeff. The guidance was written collecting identified specimens. We did not create guidance for de-identified specimens. --gayle

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Sent: Saturday, February 22, 2020 12:56 PM

To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>

Subject: Re: sentinel surveillance updates

I just noticed that the protocol does not have an option for deidentified testing...is that intentional or an omission? I can't move this forward here without the CDC protocol...

Jeffrey S. Duchin, MD (he/him)

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County

Professor in Medicine, Division of Infectious Diseases, University of Washington

Adjunct Professor, School of Public Health

401 5th Ave, Suite 1250, Seattle, WA 98104

Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803

E-mail: jeff.duchin@kingcounty.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>

Sent: Thursday, February 20, 2020 1:58 PM

To: Balter, Sharon (CDC health.nyc.gov) <sbalter@health.nyc.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wkd1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <mLAYTON@health.nyc.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb <Molly.Lamb@Illinois.gov>; PGounder@ph.lacounty.gov <PGounder@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov)

<jrakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Sarah Park <sarah.park@doh.hawaii.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgg2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>
Cc: Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello. I have enclosed an updated guidance document that includes information on shipping specimens and an example of an information sheet that you can provide to patients. The guidance document only lists the details of what is planned at 2 sites, but that does not preclude others from starting. They were just used as examples for the EUA submission. A shipping log is also attached. **We are ready to start receiving specimens** whenever you are ready to send them. We cannot start testing the identified specimens until the EUA is amended, but we believe that will happen quickly. For those that want to send de-identified specimens, we can receive and test them now.

Our questions to you:

1. **Are you planning to send de-identified specimens and when?**
2. **Are you planning to send identifiable specimens and when?**

On the call tomorrow, we will talk about options for data transfer. There will also likely be time to talk about triggers for changing current containment strategies.

Talk to you tomorrow. --gayle

-----Original Appointment-----

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)

Sent: Wednesday, February 19, 2020 5:22 PM

To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD); Balter, Sharon (CDC health.nyc.gov); Bresee, Joseph (CDC/DDID/NCIRD/ID); Christine Mahle; Conover, Craig (CDC illinois.gov); Duchin, Jeff (CDC kingcounty.gov); Ghinai, Isaac; Green, Nicole (CDC ph.lacounty.gov); Hector Rivas; Jain, Seema (CDC cdph.ca.gov); Jessica Sell; Justin DeWitt; Kauerauf, Judy (CDC illinois.gov); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Layden, Jennifer (CDC illinois.gov); Layton, Marci (CDC health.nyc.gov); Lindquist, Scott SL (CDC doh.wa.gov); Meredith Haddix; Molly Lamb; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov); Rose, Laura E. (CDC/DDPHSS/OLSS/OLS); Sarah Park; Thomas-Smith, Evonda; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Weiss, Don (CDC health.nyc.gov); Zahn, Matthew

Cc: Balter, Sharon (CDC ph.lacounty.gov)

Subject: sentinel surveillance updates

When: Friday, February 21, 2020 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: Skype Meeting

[Join Skype Meeting](#)

Trouble Joining? [Try Skype Web App](#)

Join by phone

(404) 553-8912,,37963494# (Atlanta Dial-in Conference Region)

English (United States)

(855) 348-8390,,37963494# (Atlanta Dial-in Conference Region)

English (United States)

[Find a local number](#)

Conference ID: 37963494

[Forgot your dial-in PIN?](#) | [Help](#)

.....

From: Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP)
Sent: Wednesday, February 26, 2020 5:56 PM PST
To: CHRISTOPHER SPITTERS; michelle.holshue@doh.wa.gov; Hollianne, Bruce (DOHi); Duchin, Jeff
CC: Lindquist, Scott SL (CDC doh.wa.gov)
Subject: RE: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Everyone,

Yes, Michelle is exactly right. We would be testing for antibodies, and would not be releasing results of the testing. There will be no public health actions taken as a result of the testing. We will make sure this is covered both in the initial phone call and during the follow up visit if they consent.

Jon

Jonathan Dyal, MD, MPH
CDC Epidemic Intelligence Service
Viral Special Pathogens Branch
O: +1 (404) 718-3697
F: +1 (404) 471-2575

From: CHRISTOPHER SPITTERS <christopher.spitters@comcast.net>
Sent: Wednesday, February 26, 2020 8:18 PM
To: Holshue, Michelle (CDC doh.wa.gov) <michelle.holshue@doh.wa.gov>; Hollianne, Bruce (DOHi) <hbruce@snohd.org>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP) <pgz7@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>
Subject: Re: Follow up serum from enhanced contact investigation

Thanks, Holli and Michelle. No concerns from my perspective. Forge ahead...
Chris

On February 26, 2020 at 4:29 PM "Holshue, Michelle L (DOH Fellow)" <michelle.holshue@doh.wa.gov> wrote:

Great question. Jonathan - correct me if I'm wrong - but we won't be releasing results of the serum testing, correct? This won't be a diagnostic blood draw (we're checking for SARS-CoV-2 antibodies, not viral RNA this time).

When we re-consent people for the blood draw we will make it clear that people will not receive any results. The presence of antibodies won't require any public health action - no quarantine, etc.

From: Hollianne Bruce <hbruce@snohd.org>

Sent: Wednesday, February 26, 2020 3:26:51 PM

To: Holshue, Michelle L (DOH Fellow); Duchin, Jeffery, MD (DOHi); Spitters, Christopher (DOHi); Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP)

Cc: Lindquist, Scott W (DOH)

Subject: RE: Follow up serum from enhanced contact investigation

Hi Michelle,

One question that came to my mind, is who will be giving the contacts their results? Will that fall to us again?

Thanks, Holli

Hollianne Bruce, MPH | Communicable Disease Epidemiologist II | Assessment and Epidemiology

3020 Rucker Avenue, Ste 206 | Everett, WA 98201 | **tel: 425-339-5213** | Fax:425-339-8706



IMPORTANT NOTICE: This email, including any attachment, contains information that may be confidential or privileged,

and is intended solely for the entity or individual to whom it is addressed. If you are not the intended recipient, you should

delete this message and are hereby notified that any disclosure, copying, or distribution of this message is strictly

prohibited. Nothing in this email, including any attachment, is intended to be a legally binding signature.

From: Holshue, Michelle L (DOH Fellow) [<mailto:michelle.holshue@doh.wa.gov>]

Sent: Wednesday, February 26, 2020 3:01 PM

To: Duchin, Jeffery, MD (DOHi) <jeff.duchin@kingcounty.gov>; Christopher Spitters [External] <christopher.spitters@comcast.net>; Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP) <pgz7@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>

Cc: Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>

Subject: FW: Follow up serum from enhanced contact investigation

Hi Dr. Duchin and Dr. Spitters,

I wanted to update you about the follow-up for the enhanced contact investigation. CDC is planning to send a team back out to our area next week to collect and ship serum specimens. This team will be led by Dr. Dyal (copied here); I'm helping to coordinate this time around.

If it is alright with you, we will start to reach out to the participants from your jurisdictions tomorrow afternoon in order to schedule follow-up blood draws for next week. These will likely take place at people's homes (although if we have the option to set up blood draws at people's work sites that would maintain privacy and facilitate participation, we would love to explore that!)

I'm attaching an information sheet, but please let me know if you have any questions.

Thanks for your help,

Michelle

Michelle L. Holshue, MPH, BSN, RN

LCDR, U.S. Public Health Service

Epidemic Intelligence Service Officer

Office of the State Health Officer

Washington State Department of Health

michelle.holshue@doh.wa.gov

206-418-5418 (ph) | 206-364-1060 (fax)

www.doh.wa.gov

From: Biggs, Holly (CDC/DDID/NCIRD/DVD)
Sent: Sunday, February 23, 2020 10:08 AM
To: 'Duchin, Jeff' <Jeff.Duchin@kingcounty.gov>; Christopher Spitters <christopher.spitters@comcast.net>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: RE: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,

Thank you. We will update when we start in case any questions come in. Nothing else needed from your end – wanted to make sure you were aware and had the opportunity to provide any input/concerns.

Chris, in answer to your question about confirmed cases. There are other protocols under development for case follow up, but these will be raised separately. Right now, we don't have plans to reach out to these folks when we are in WA. For the enhanced contact investigation follow up, we will only reach out to the contacts who we previously interviewed.

Thanks,

Holly

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 3:03 PM
To: Christopher Spitters <christopher.spitters@comcast.net>; Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: Re: Follow up serum from enhanced contact investigation

Holly, sorry I missed your message in my inbox. I don't have concerns about you contact these people. The protocol seems to indicate the contacts have already consented to this - what am I missing?

Please let us know when you start do we can share with our team just in case they get questions.

Thanks much

Jeff

Jeffrey S. Duchin, MD (he/him)

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Christopher Spitters <christopher.spitters@comcast.net>
Sent: Saturday, February 22, 2020 11:46 AM
To: Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: Re: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi, Holly.

OK with me...what (if anything) do you need from us beyond being aware of your plans?

Are you already following up with our case(s) or will you be planning to do as set forth in the draft protocol? Would you like me to give him a heads up? Note: one of the Travis AFB→Spokane transfers from the Diamond Princess is also a Snohomish County resident. We do not have a relationship with her and likely will not until she returns home.

Thanks,

Chris

From: "Biggs, Holly (CDC/DDID/NCIRD/DVD)" <xdc6@cdc.gov>
Date: Friday, February 21, 2020 at 9:56 AM
To: "Duchin, Jeff" <jeff.duchin@kingcounty.gov>, Christopher Spitters <christopher.spitters@comcast.net>
Cc: Scott Lindquist <scott.lindquist@doh.wa.gov>, "Chu, Victoria (CDC/DDID/NCIRD/DVD)" <pgz4@cdc.gov>
Subject: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,

I hope you are doing well. I wanted to follow up about the possibility of collecting serum from our group of close case contacts at ~4-6 week timepoint (which is coming up quickly!). The aim of this is to assess a possible immune response to SARS-CoV-2 exposure. We have ~38 people on the list that we would reach out to. This follow up was part of the initial protocol, but of course participation would be voluntary.

If ok with you, we are prepared to coordinate this from Atlanta, including reaching out to those who participated in the initial part of the enhanced contact tracing protocol to ask about participation/consent, and making arrangements for blood collection. We can arrange to send a couple EISOs from Atlanta who were involved in the initial phase to do this follow up blood collection and shipment. We can also share a brief consent form and description of the follow up process that we are currently drafting. Also attached the initial broad protocol.

Thank you for your consideration.

Holly

Holly Biggs, MD, MPH

Medical Epidemiologist

Respiratory Viruses Branch

Division of Viral Diseases

National Center for Immunization and Respiratory Diseases

U.S. Centers for Disease Control and Prevention

Office: 404-639-3989

Email: hbiggs@cdc.gov

From: Armstrong, Gregory (CDC/DDID/NCEZID/OD)
Sent: Friday, February 28, 2020 5:41 PM PST
To: Scott Dowell; shendure@gmail.com; shendure@uw.edu
CC: Jernigan, Daniel B. (CDC/DDID/NCIRD/ID); bose@bgc3.com; Sharon Bergquist (Gates Ventures); Dan Wattendorf; Duchin, Jeff
Subject: RE: Seattle flu (Covid-19?) study - introductions

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Scott—Thanks for the introduction. As you might imagine, we’ve been quite busy the last few days, so I don’t have time to write a long email.

I Jeff Duchin is on the cc list, which is great—as you might imagine, my first question would be how this fits into the King County and Washington state surveillance plans.

I’ll be around all weekend: 404.378.0742.

Gregory Armstrong, MD | currently assigned to CDC Coronavirus Response as Deputy Incident Manager | garmstrong@cdc.gov

From: Scott Dowell <Scott.Dowell@gatesfoundation.org>
Sent: Friday, February 28, 2020 7:19 PM
To: Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; shendure@gmail.com; shendure@uw.edu
Cc: Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; bose@bgc3.com; Sharon Bergquist (Gates Ventures) <Sharon.Bergquist@gatesventures.com>; Dan Wattendorf <Dan.Wattendorf@gatesfoundation.org>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: Seattle flu (Covid-19?) study - introductions

Greg Armstrong let me introduce you to Jay Shendure, co-pi of the Seattle Flu Study. Greg is deputy incident manager for CDC’s Covid-19 response. Hoping you two can talk, bringing in relevant colleagues from the UW clinical lab (CLIA-approved for high complexity testing) as needed.

Dan Jernigan and I spoke earlier to touch bases on the new case here and the potentially valuable role of the SFS in future Covid-19 surveillance. He said Greg would be the ideal person to follow up.

I also spoke with SFS colleagues copied, and reassured them that CDC is actually thrilled to have the additional resources of SFS to detect and track Covid-19, and with all of us wants to figure out how to do it with full ethical and regulatory transparency.

I’m sure you can figure out a range of workable solutions. Some relevant points I noted from our discussions so far:

- SFS patients consent to viral testing beyond flu, and the IRB is comfortable that covers Covid-19
- The website is explicit that SFS is working with public health authorities on Covid-19
- Current pace is about 400 patients tested per day
- There is no current expectation that subjects would receive notice of a negative Covid-19 result

- Positives can be referred to the UW clinical lab for approved Covid-19 confirmation

As you follow up feel free to keep me and those copied in the loop.

Thanks all for some quick and productive discussions!

Scott

From: D'Angeli, Marisa (DOH)
Sent: Tuesday, March 3, 2020 7:25 AM PST
To: Baliga, Christopher; Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
CC: Duchin, Jeff
Subject: Re: Connecting you

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Chris,

Based on our limited data, it appears that NP is positive more often than OP, but it's not always the case, sometimes the OP is positive when NP negative, may depend on technique too. Reportedly sputum or other lower resp sample is best when people have LRI but we have tested very few sputums.

We are still testing until negative but we hope there will be guidance from CDC that allows ending isolation based on clinical findings. So far it appears that people remain positive for weeks.

I have not heard that there is a published sensitivity and specificity of the test.

It's frustrating not having answers, but there will be more to come.

M

From: Baliga, Christopher <Christopher.Baliga@virginiamason.org>
Sent: Monday, March 2, 2020 10:43:26 PM
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
Cc: D'Angeli, Marisa (DOH); Duchin, Jeffery, MD (DOHi)
Subject: Re: Connecting you

How often are we testing the positive patients? Are we testing till negative anymore?

Chris

On Mar 2, 2020, at 8:35 PM, Baliga, Christopher <Christopher.Baliga@virginiamason.org> wrote:

Fair enough. Marisa, balls in your court.

Thank you!

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) [mailto:jqj9@cdc.gov]
Sent: Monday, March 02, 2020 8:34 PM
To: Baliga, Christopher <Christopher.Baliga@virginiamason.org>
Cc: D'Angeli, Marisa (DOH) (Marisa.DAngeli@DOH.WA.GOV) <Marisa.DAngeli@DOH.WA.GOV>;

Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>

Subject: RE: Connecting you

**** STOP. THINK. External Email ****

Chris-

I might yield to my lab colleagues on this one

JJ

From: Baliga, Christopher <Christopher.Baliga@viriniamason.org>

Sent: Monday, March 2, 2020 11:21 PM

To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>

Cc: D'Angeli, Marisa (DOH) (Marisa.DAngeli@DOH.WA.GOV) <Marisa.DAngeli@DOH.WA.GOV>;

Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>

Subject: RE: Connecting you

Similar question, but the UW is only running NP swabs, not OP. I can't believe the two really make much difference, but do you know the discordance rate of the NP and OP swabs?

Looping in Marisa at the DoH lab. Any ideas Marisa?

Thanks!

From: Baliga, Christopher

Sent: Monday, March 02, 2020 7:08 PM

To: 'Jernigan, John A. (CDC/DDID/NCEZID/DHQP)' <jqj9@cdc.gov>

Subject: FW: Connecting you

Hi John,

I don't think there is an answer to this question, but

Pts with negative COVID-19 results, either through the CDC, WA DoH, or the University of Washington. How reliable is that? Do we know the false negative rate (or even the false positive?).

If you know great. If not that's ok too.

Thanks,
Chris

Chris Baliga, MD

Infectious Diseases

Medical Director of Infection Prevention and Employee Health

<image001.jpg>

Virginia Mason Hospital & Seattle Medical Center

1100 9th Ave | H7-ID | Seattle, WA 98101

(206) 341-1617 office | (206) 341-0846 clinic | (206) 223-6814 fax

VirginiaMason.org

From: Stone, Nimalie (CDC/DDID/NCEZID/DHQP) [<mailto:ey2@cdc.gov>]

Sent: Monday, March 02, 2020 12:48 PM

To: Baliga, Christopher <Christopher.Baliga@viriniamason.org>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Reddy, Sujana C. (CDC/DDID/NCEZID/DHQP) <kuj0@cdc.gov>

Subject: Connecting you

**** STOP. THINK. External Email ****

Chris,

Here are the email contacts for Sujana Reddy, John Jernigan, and myself.

Thanks,

Nimalie D. Stone, MD, MS

Team Lead, Long-term Care

Prevention and Response Branch

Division of Healthcare Quality Promotion

Centers for Disease Control and Prevention

Email: nstone@cdc.gov

Office: 404-639-4757

Confidentiality Disclaimer:

The information contained in this e-mail may be confidential. If you received this in error, please call the Virginia Mason Privacy Officer at (206) 223-7505.

Patients: E-mail is not considered secure. By choosing to communicate with Virginia Mason by e-mail, you will assume the risk of a confidentiality breach. Please do not rely on e-mail communication if you or a family member is injured or is experiencing a sudden change in health status.

If you need emergency attention, call 911.

From: Baliga, Christopher
Sent: Tuesday, March 3, 2020 8:42 AM PST
To: Duchin, Jeff
CC: D'Angeli, Marisa (DOH); Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
Subject: Re: Connecting you

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Ok, but UW only doing NP. Is a negative NP enough to remove someone from consideration from COVID?

How often should we retest? Follow WHO guidance?

Chris

On Mar 3, 2020, at 7:49 AM, Duchin, Jeff <Jeff.Duchin@kingcounty.gov> wrote:

**** STOP. THINK. External Email ****

That's why NO and OP are recommended. I would not be surprised to see criteria move to one neg but may be different for public (none/1) vs HCP

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: D'Angeli, Marisa (DOH) <Marisa.DAngeli@DOH.WA.GOV>
Sent: Tuesday, March 3, 2020 7:25 AM
To: Baliga, Christopher <Christopher.Baliga@viriniamason.org>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Cc: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Subject: Re: Connecting you

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Chris,

Based on our limited data, it appears that NP is positive more often than OP, but it's not always the case, sometimes the OP is positive when NP negative, may depend on technique too. Reportedly sputum or other lower resp sample is best when people have LRI but we have tested very few sputums.

We are still testing until negative but we hope there will be guidance from CDC that allows ending isolation based on clinical findings. So far it appears that people remain positive for weeks.

I have not heard that there is a published sensitivity and specificity of the test.

It's frustrating not having answers, but there will be more to come.

M

From: Baliga, Christopher <Christopher.Baliga@virginiamason.org>

Sent: Monday, March 2, 2020 10:43:26 PM

To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP)

Cc: D'Angeli, Marisa (DOH); Duchin, Jeffery, MD (DOHi)

Subject: Re: Connecting you

How often are we testing the positive patients? Are we testing till negative anymore?

Chris

On Mar 2, 2020, at 8:35 PM, Baliga, Christopher <Christopher.Baliga@virginiamason.org> wrote:

Fair enough. Marisa, balls in your court.

Thank you!

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) [<mailto:jqj9@cdc.gov>]

Sent: Monday, March 02, 2020 8:34 PM

To: Baliga, Christopher <Christopher.Baliga@virginiamason.org>

Cc: D'Angeli, Marisa (DOH) (Marisa.DAngeli@DOH.WA.GOV) <Marisa.DAngeli@DOH.WA.GOV>;
Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>

Subject: RE: Connecting you

**** STOP. THINK. External Email ****

Chris-

I might yield to my lab colleagues on this one
JJ

From: Baliga, Christopher <Christopher.Baliga@virginiamason.org>
Sent: Monday, March 2, 2020 11:21 PM
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Cc: D'Angeli, Marisa (DOH) (Marisa.DAngeli@DOH.WA.GOV) <Marisa.DAngeli@DOH.WA.GOV>;
Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: RE: Connecting you

Similar question, but the UW is only running NP swabs, not OP. I can't believe the two really make much difference, but do you know the discordance rate of the NP and OP swabs?

Looping in Marisa at the DoH lab. Any ideas Marisa?

Thanks!

From: Baliga, Christopher
Sent: Monday, March 02, 2020 7:08 PM
To: 'Jernigan, John A. (CDC/DDID/NCEZID/DHQP)' <jqj9@cdc.gov>
Subject: FW: Connecting you

Hi John,

I don't think there is an answer to this question, but

Pts with negative COVID-19 results, either through the CDC, WA DoH, or the University of Washington. How reliable is that? Do we know the false negative rate (or even the false positive?).

If you know great. If not that's ok too.

Thanks,
Chris

Chris Baliga, MD

Infectious Diseases

Medical Director of Infection Prevention and Employee Health

<image001.jpg>

Virginia Mason Hospital & Seattle Medical Center

1100 9th Ave | H7-ID | Seattle, WA 98101

(206) 341-1617 office | (206) 341-0846 clinic | (206) 223-6814 fax

VirginiaMason.org

From: Stone, Nimalie (CDC/DDID/NCEZID/DHQP) [<mailto:ei2@cdc.gov>]
Sent: Monday, March 02, 2020 12:48 PM
To: Baliga, Christopher <Christopher.Baliga@virginiamason.org>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Reddy, Sujana C. (CDC/DDID/NCEZID/DHQP) <kuj0@cdc.gov>
Subject: Connecting you

**** STOP. THINK. External Email ****

Chris,
Here are the email contacts for Sujana Reddy, John Jernigan, and myself.
Thanks,

Nimalie D. Stone, MD, MS
Team Lead, Long-term Care
Prevention and Response Branch
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
Email: nstone@cdc.gov
Office: 404-639-4757

Confidentiality Disclaimer:

The information contained in this e-mail may be confidential. If you received this in error, please call the Virginia Mason Privacy Officer at (206) 223-7505.

Patients: E-mail is not considered secure. By choosing to communicate with Virginia Mason by e-mail, you will assume the risk of a confidentiality breach. Please do not rely on e-mail communication if you or a family member is injured or is experiencing a sudden change in health status.

If you need emergency attention, call 911.

From: Pavan Bhatraju
Sent: Wednesday, March 4, 2020 1:28 PM PST
To: Suman Paranjape
CC: Jernigan, John A. (CDC/DDID/NCEZID/DHQP); Duchin, Jeff; Craig Smith; Liles, Conrad; Page, Libby Charhon; Stein, Kate; Craig Smith
Subject: Re: Resource for Community Prevalence Estimate of COVID-19

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

That works for me as well.

Pavan

Get [Outlook for iOS](#)

From: Suman Paranjape <sumip1@gmail.com>

Sent: Wednesday, March 4, 2020 1:18:17 PM

To: Pavan Bhatraju <bhatraju@uw.edu>

Cc: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Craig Smith <CSmith@bloodworksnw.org>; Liles, Conrad <WCLiles@medicine.washington.edu>; Page, Libby Charhon <Libby.Page@kingcounty.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>; Craig Smith <nwmsdoc@cs.com>

Subject: Re: Resource for Community Prevalence Estimate of COVID-19

Hi all,

I can make myself available anytime although 4:15-5:40 PM will be more difficult.

Best,

Sumi

On Wed, Mar 4, 2020 at 12:51 PM Pavan Bhatraju <bhatraju@uw.edu> wrote:

I'm looping in Craig Smith at Bloodworks.

Craig and Sumi please respond all a time that we all could talk.

Get [Outlook for iOS](#)

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>

Sent: Wednesday, March 4, 2020 12:15:00 PM

To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Pavan Bhatraju

<bhatraju@uw.edu>; Craig Smith <CSmith@Bloodworksnw.org>; 'Liles, Conrad'

<WCLiles@medicine.washington.edu>; sumip1@gmail.com <sumip1@gmail.com>

Cc: Page, Libby Charhon <Libby.Page@kingcounty.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>

Subject: RE: Resource for Community Prevalence Estimate of COVID-19

Pavan-

Thank you for reaching out! I am leading the infection prevention and control team from CDC here in Seattle. Can we touch base by phone? Cell 404-259-7280

John

John A. Jernigan, MD, MS
Director, Office of Prevention Research and Evaluation
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
1600 Clifton Road, Mailstop A-31
Atlanta, Georgia 30333
Phone 404-639-4245
Fax 404-639-4046

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Wednesday, March 4, 2020 3:03 PM
To: Pavan Bhatraju <bhatraju@uw.edu>; Craig Smith <CSmith@Bloodworksnc.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumip1@gmail.com
Cc: Page, Libby Charhon <Libby.Page@kingcounty.gov>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>
Subject: RE: Resource for Community Prevalence Estimate of COVID-19

Pavan,

This is very wonderful news. We desperately need field teams to do testing for people who need testing but not medical care. I'm connecting you with our staff working on developing mobile field strike teams. We have an acute need at LifeWorks and would like to test family members of patients ASAP.

Much obliged - Jeff

Jeffrey S. Duchin, MD

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County

Professor in Medicine, Division of Infectious Diseases, University of Washington

Adjunct Professor, School of Public Health

401 5th Ave, Suite 1250, Seattle, WA 98104

Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803

E-mail: jeff.duchin@kingcounty.gov

From: Pavan Bhatraju <bhatraju@uw.edu>

Sent: Wednesday, March 4, 2020 11:51 AM

To: Craig Smith <CSmith@Bloodworksnw.org>; 'Liles, Conrad'

<WCLiles@medicine.washington.edu>; sumip1@gmail.com; Duchin, Jeff

<Jeff.Duchin@kingcounty.gov>

Subject: Resource for Community Prevalence Estimate of COVID-19

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Dear All,

Bloodworks NW has reached out and wants to know how they can help. They have mobile bloodworks units, have the capability to swab and collect samples from many people and have the capacity to run COVID-19 assays at Bloodworks.

How can we utilize this resource to understand the prevalence of COVID-19 in the community?

Dr. Duchin, please tell us your thoughts and who we could work with.

Thanks,

Pavan

Pavan Bhatraju, MD MSc

Assistant Professor

Pulmonary, Critical Care and Sleep Medicine

From: Clark, Thomas A. (CDC/DDID/NCIRD/DVD)
Sent: Tuesday, March 3, 2020 6:57 AM PST
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
CC: Duchin, Jeff
Subject: PPE guidance

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

John, to whom do you want Jeff to direct the letter about PPE compliance?

Thanks,
tom

From: Duchin, Jeff
Sent: Saturday, February 29, 2020 10:08 AM PST
To: Stenzel, Timothy; Robin A Prentice; Cowgill, Karen; Mark Rieder; Helen Y Chu; Langley, Gayle E (CDC); Kuhnert-Tallman, Wendi L (CDC); Kay, Meagan
CC: Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Jay A. Shendure; Trevor Bedford; Istarita
Subject: Re: SEATTLE Flu Study Lab Result

Hello folks we are overwhelmed here in the public health department and not able to join this call. I'm hoping Karen can join for us. It would be really fantastic if FDA can find a way to allow the SFS study to continue to test a large number of samples to help us understand about community-based transmission especially in light of our current outbreak and other case with no travel history.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>
Sent: Saturday, February 29, 2020 10:01:01 AM
To: Robin A Prentice <robins4@uw.edu>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Sounds good.

From: Robin A Prentice <robins4@uw.edu>
Date: February 29, 2020 at 12:44:15 PM EST
To: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>, Cowgill, Karen <n-kcowgill@kingcounty.gov>, Mark Rieder <mrieder@uw.edu>, Helen Y Chu <helenchu@uw.edu>, Langley, Gayle E (CDC) <fez7@cdc.gov>, Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>, Duchin, Jeff <Jeff.Duchin@kingcounty.gov>, Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>, Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>, Jay A. Shendure <shendure@uw.edu>, Trevor Bedford <trevor@bedford.io>, Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

Hello Tim,

Would it work for us to talk at 11am Pacific time, 2pm Eastern? I will send a zoom invite in a moment.

Robin

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>
Sent: Saturday, February 29, 2020 9:11 AM
To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

Hi,

Can one or more folks from the Seattle Flu Study lab give me a call on my cell 202-308-9464? Leave a VM with number to get back to you right away if it goes to VM.

Thanks!

Best,

Tim

Timothy T. Stenzel, MD, PhD

*Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality*

Center for Devices and Radiological Health
U.S. Food and Drug Administration
Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell
Administrative Assistant

**OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality**

CDRH | Food and Drug Administration
White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993
Ph: 301-796-7692
jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>
Sent: Saturday, February 29, 2020 10:53 AM
To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wtk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

Hi Karen,

I did connect with Mark a little after an hour yesterday by phone.

Wanted to let you know of this PR and linked new guidance that just was released.

We are still working on your particular situation.

<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-issues-new-policy-help-expedite-availability-diagnostics>

Best,
Tim

Timothy T. Stenzel, MD, PhD

*Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality*

Center for Devices and Radiological Health
U.S. Food and Drug Administration
Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell

Administrative Assistant

**OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality**

**CDRH | Food and Drug Administration
White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993
Ph: 301-796-7692
jennifer.Campbell@fda.hhs.gov**

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Cowgill, Karen <n-kcowgill@kingcounty.gov>
Sent: Friday, February 28, 2020 4:46 PM
To: Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result
Importance: High

Hi Tim, et al. at CDC and Mark, et al. at SFS – Jeff Duchin (Chief Health Officer at Public Health Seattle-King County) asked me to follow up with you about the outcome of our discussion earlier today (9 PT/12 ET) about Seattle Flu Study testing for SARS-CoV-2.

At the end of the call, Tim said he would get back to Mark within the hour, but we haven't heard anything on our end.

Could someone please send a summary of where things stand and specifically

- what the current guidance is about SFS continued testing of samples for nCoV (retrospective and prospective)
- if testing continues, what is the flow of information to public health / re-contacting patients with results
- any other relevant info (e.g., was the lot of the kit SFS used to confirm their initial positive the same lot that CDC had QC'd?)

Thank you,

Karen Cowgill, PhD, MSc (*she/her*)
COVID-19 Response Epidemiologist
Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Affiliate Assistant Professor in Global Health, University of Washington
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-3087; Fax: (206) 296-4803
E-mail: n-kcowgill@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>
Sent: Thursday, February 27, 2020 10:57 PM
To: Helen Y Chu <helenchu@uw.edu>
Cc: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC

doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Here is the Zoom link for the call in tomorrow (Friday, 2/28 @ 9 am PT)
Mark Rieder is inviting you to a scheduled Zoom meeting.

Topic: CDC Call
Time: Feb 28, 2020 09:00 AM Pacific Time (US and Canada)

Join Zoom Meeting
<https://washington.zoom.us/j/265821853>

Meeting ID: 265 821 853

One tap mobile
+16699006833,,265821853# US (San Jose)
+16468769923,,265821853# US (New York)

Dial by your location
+1 669 900 6833 US (San Jose)
+1 646 876 9923 US (New York)
Meeting ID: 265 821 853

On Thu, Feb 27, 2020 at 10:50 PM Helen Y Chu <helenchu@uw.edu> wrote:

Let's all plan to be on a 9:00 am call tomorrow to discuss this. Robin, can you set up a zoom call and include whoever else should join from the SFS team.
Thank you.

Get [Outlook for iOS](#)

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Sent: Thursday, February 27, 2020 8:19 PM
To: Duchin, Jeff (CDC kingcounty.gov)
Cc: Helen Y Chu; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen
Subject: Re: SEATTLE Flu Study Lab Result

Thanks much Jeff for connecting us. Happy to make the time any time - 7:30 your time is fine but I will wait to see the calendar invite to confirm.

Thanks!

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Thursday, February 27, 2020 11:17:20 PM
To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Cc: Helen Y Chu <helenchu@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org)
<janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov)
<scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>
Subject: SEATTLE Flu Study Lab Result

Wendy,

Thanks for helping us navigate with FDA colleagues what we can say/do in response to a potential positive test result from the SFS research assay. Helen Chu and Jan Englund are the SFS researchers that can provide the details of the test method and other relevant information. I'm also copying Scott Lindquist, the WA State DOH communicable disease epidemiologist and Karen Cowgill who works on surveillance with us. It probably would be good to have a call early tomorrow Pacific time (7:30) but Helen and Jan should schedule the time with you.

Very much appreciate your help.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Sent: Saturday, February 29, 2020 10:08 AM PST
To: Duchin, Jeff
Subject: Automatic reply: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

I am working on the COVID-19 response. I may be delayed in getting back to you. For urgent matters, please contact 404-639-3594.

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Sent: Saturday, February 22, 2020 11:06 AM PST
To: Bresee, Joseph (CDC/DDID/NCIRD/ID); Duchin, Jeff
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Sure. I can put something together. --gayle

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Saturday, February 22, 2020 2:03 PM
To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: RE: sentinel surveillance updates

Yep, agree. Gayle – I think that we might remind all collaborators that if they cant stand up their prospective surveillance sites until late next week, they may send already collected deidentified samples sooner – as long as you all have worked through the labelling, shipping issues.

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 2:01 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: Re: sentinel surveillance updates

It would be very important that this be viewed as a legit and important alternative to identified

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Saturday, February 22, 2020 10:59 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

I heard yesterday that at least you, HI and NYC were going that way. Not sure about the others. Gayle?

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 1:58 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: Re: sentinel surveillance updates

Aren't other sites also doing deidentified? I thought NYC, CA and CHI?

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Saturday, February 22, 2020 10:56 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Gayle,
Can we add a section in the concept note for de'id'ed sample collection and testing. Not for the note going to FDA, but for the group? Beyond allowing Jeff cover to stand this up, will be good to document the plans in general. I suspect that this document will be added to over time – to include comms plans, for instance. So can treat the document that went to FDA as a static product at this point, but acknowledge that the concept document/protocol may change over time.
Joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 1:26 PM
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Subject: Re: sentinel surveillance updates

OK, is that possible? Not sure we can go forward if this is not consistent with guidance.

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Sent: Saturday, February 22, 2020 10:24 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello Jeff. The guidance was written collecting identified specimens. We did not create guidance for de-identified specimens. --gayle

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 12:56 PM
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Subject: Re: sentinel surveillance updates

I just noticed that the protocol does not have an option for deidentified testing...is that intentional or an omission? I can't move this forward here without the CDC protocol...

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Sent: Thursday, February 20, 2020 1:58 PM
To: Balter, Sharon (CDC health.nyc.gov) <sbalter@health.nyc.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Conover, Craig (CDC

illinois.gov) <Craig.Conover@Illinois.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <m Layton@health.nyc.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb <Molly.Lamb@Illinois.gov>; PGounder@ph.lacounty.gov <PGounder@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Sarah Park <sarah.park@doh.hawaii.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgg2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>
Cc: Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello. I have enclosed an updated guidance document that includes information on shipping specimens and an example of an information sheet that you can provide to patients. The guidance document only lists the details of what is planned at 2 sites, but that does not preclude others from starting. They were just used as examples for the EUA submission. A shipping log is also attached. **We are ready to start receiving specimens** whenever you are ready to send them. We cannot start testing the identified specimens until the EUA is amended, but we believe that will happen quickly. For those that want to send de-identified specimens, we can receive and test them now.

Our questions to you:

1. **Are you planning to send de-identified specimens and when?**
2. **Are you planning to send identifiable specimens and when?**

On the call tomorrow, we will talk about options for data transfer. There will also likely be time to talk about triggers for changing current containment strategies.

Talk to you tomorrow. --gayle

-----Original Appointment-----

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)

Sent: Wednesday, February 19, 2020 5:22 PM

To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD); Balter, Sharon (CDC health.nyc.gov); Bresee, Joseph (CDC/DDID/NCIRD/ID); Christine Mahle; Conover, Craig (CDC illinois.gov); Duchin, Jeff (CDC kingcounty.gov); Ghinai, Isaac; Green, Nicole (CDC ph.lacounty.gov); Hector Rivas; Jain, Seema (CDC cdph.ca.gov); Jessica Sell; Justin DeWitt; Kauerauf, Judy (CDC illinois.gov); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Layden, Jennifer (CDC illinois.gov); Layton, Marci (CDC health.nyc.gov); Lindquist, Scott SL (CDC doh.wa.gov); Meredith Haddix; Molly Lamb; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov); Rose, Laura E. (CDC/DDPHSS/OLSS/OLS); Sarah Park; Thomas-Smith, Evonda; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Weiss, Don (CDC health.nyc.gov); Zahn, Matthew

Cc: Balter, Sharon (CDC ph.lacounty.gov)

Subject: sentinel surveillance updates

When: Friday, February 21, 2020 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: Skype Meeting

[Join Skype Meeting](#)

Trouble Joining? [Try Skype Web App](#)

Join by phone

(404) 553-8912,,37963494# (Atlanta Dial-in Conference Region)

English (United States)

(855) 348-8390,,37963494# (Atlanta Dial-in Conference Region)

English (United States)

[Find a local number](#)

Conference ID: 37963494

[Forgot your dial-in PIN?](#) | [Help](#)

From: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Sent: Saturday, February 22, 2020 10:59 AM PST
To: Duchin, Jeff; Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

I heard yesterday that at least you, HI and NYC were going that way. Not sure about the others. Gayle?

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 1:58 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: Re: sentinel surveillance updates

Aren't other sites also doing deidentified? I thought NYC, CA and CHI?

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Sent: Saturday, February 22, 2020 10:56 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Gayle,

Can we add a section in the concept note for de'id'ed sample collection and testing. Not for the note going to FDA, but for the group? Beyond allowing Jeff cover to stand this up, will be good to document the plans in general. I suspect that this document will be added to over time – to include comms plans, for instance. So can treat the document that went to FDA as a static product at this point, but acknowledge that the concept document/protocol may change over time.

Joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 1:26 PM
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Subject: Re: sentinel surveillance updates

OK, is that possible? Not sure we can go forward if this is not consistent with guidance.

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Sent: Saturday, February 22, 2020 10:24 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello Jeff. The guidance was written collecting identified specimens. We did not create guidance for de-identified specimens. --gayle

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 12:56 PM
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Subject: Re: sentinel surveillance updates

I just noticed that the protocol does not have an option for deidentified testing...is that intentional or an omission? I can't move this forward here without the CDC protocol...

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Sent: Thursday, February 20, 2020 1:58 PM
To: Balter, Sharon (CDC health.nyc.gov) <sbalter@health.nyc.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <mlayton@health.nyc.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb <Molly.Lamb@Illinois.gov>; PGounder@ph.lacounty.gov <PGounder@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Sarah Park <sarah.park@doh.hawaii.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgg2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>
Cc: Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello. I have enclosed an updated guidance document that includes information on shipping specimens and an example of an information sheet that you can provide to patients. The guidance document only lists the details of what is planned at 2 sites, but that does not preclude others from starting. They were just used as examples for the EUA submission. A shipping log is also attached. **We are ready to start receiving specimens** whenever you are ready to send them. We cannot start testing the identified specimens until the EUA is amended, but we believe that will happen quickly. For those that want to send de-identified specimens, we can receive and test them now.

Our questions to you:

1. **Are you planning to send de-identified specimens and when?**
2. **Are you planning to send identifiable specimens and when?**

On the call tomorrow, we will talk about options for data transfer. There will also likely be time to talk about triggers for changing current containment strategies.

Talk to you tomorrow. --gayle

-----Original Appointment-----

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Sent: Wednesday, February 19, 2020 5:22 PM
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD); Balter, Sharon (CDC health.nyc.gov); Bresee, Joseph (CDC/DDID/NCIRD/ID); Christine Mahle; Conover, Craig (CDC illinois.gov); Duchin, Jeff (CDC

kingcounty.gov); Ghinai, Isaac; Green, Nicole (CDC ph.lacounty.gov); Hector Rivas; Jain, Seema (CDC cdph.ca.gov); Jessica Sell; Justin DeWitt; Kauerauf, Judy (CDC illinois.gov); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Layden, Jennifer (CDC illinois.gov); Layton, Marci (CDC health.nyc.gov); Lindquist, Scott SL (CDC doh.wa.gov); Meredith Haddix; Molly Lamb; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov); Rose, Laura E. (CDC/DDPHSS/OLSS/OLS); Sarah Park; Thomas-Smith, Evonda; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Weiss, Don (CDC health.nyc.gov); Zahn, Matthew

Cc: Balter, Sharon (CDC ph.lacounty.gov)

Subject: sentinel surveillance updates

When: Friday, February 21, 2020 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: Skype Meeting

[Join Skype Meeting](#)

Trouble Joining? [Try Skype Web App](#)

Join by phone

(404) 553-8912,,37963494# (Atlanta Dial-in Conference Region)

English (United States)

(855) 348-8390,,37963494# (Atlanta Dial-in Conference Region)

English (United States)

[Find a local number](#)

Conference ID: 37963494

[Forgot your dial-in PIN?](#) | [Help](#)

From: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Sent: Saturday, February 22, 2020 6:01 AM PST
To: Duchin, Jeff
CC: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Subject: RE: Sentinel Surveillance

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Jeff, yes, we can accept nasal swabs for surveillance either from prospective or retrospective samples. See below for other thoughts –
joe

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Friday, February 21, 2020 11:28 PM
To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Subject: Sentinel Surveillance

Joe, Gayle,

Had a discussion with Seattle Flu Study (SFS) team tonight. Because subjects were not consented for follow-up implications of COVID-19 infection they are only able to provide de-identified specimens at this time. We will draft a proposal for submission of de-identified specimens if we get the word that aliquots from nasal swabs are permissible. **Yes, this is acceptable** Will want to work with your communications team and the other jurisdictions doing de-identified testing to have a consistent message with CDC commenting in the event of a positive. **working on something this weekend. Will share with the group**

Also want to confirm with you that the UW researchers are free to test their study specimens using their own in-house assay as long as they do not report results to patient or clinician. **That is Ok with us.** Can they inform me and/or WA DOH of their results as long as we do not use them as the basis for any action? **My understanding (but will check again) is that you cant use for clinical decisions or actions for the person, but I think it is OK to inform public health actions for a population. Will ask around again this AM** We would need to be sure they are not able to link their result to the specimens submitted to CDC. I also serve as an advisor to SFS, that makes it a bit complicated (or maybe less complicated?).

And finally, the patient info form says no genetic testing will be done on the specimen, although that would preclude viral genetic analysis. I assume you meant no genetic testing on human DNA, not viral RNA - if so, perhaps that should be clarified?**let Gayle respond**

I am also exploring prospective surveillance with other community clinics.**Thanks**

Thanks for your help.

Jeff

(PS - Gayle - I just figured out your name change because my auto-populate email system pulls up your prior surname when I enter fez7 - so, hello, nice to be working with you!

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Park, Sarah Y., MD
Sent: Wednesday, February 26, 2020 12:30 AM PST
To: Marielle Fricchione; Duchin, Jeff; Bresee, Joseph (CDC/DDID/NCIRD/ID); Langley, Gayle E. (CDC/DDID/NCIRD/DVD); Allison Arwady; Balter, Sharon (CDC ph.lacounty.gov); Brian Hiatt; Christine Mahle; Christopher Shields; Conover, Craig (CDC illinois.gov); Debra Wadford; Desmond, Edward; Gail Cooksey; Ghinai, Isaac; Godfred Masinde; Green, Nicole (CDC ph.lacounty.gov); Hector Rivas; Jain, Seema (CDC cdph.ca.gov); Jessica Sell; Justin DeWitt; Kauerauf, Judy (CDC illinois.gov); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Layden, Jennifer (CDC illinois.gov); Layton, Marci (CDC health.nyc.gov); Leslie Chapman; Lindquist, Scott SL (CDC doh.wa.gov); Meredith Haddix; Molly Lamb; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov); Rose, Laura E. (CDC/DDPHSS/OLSS/OLS); Stephanie Black; Thomas-Smith, Evonda; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Weiss, Don (CDC health.nyc.gov); Zahn, Matthew
CC: Armstrong, Gregory (CDC/DDID/NCEZID/OD); Langley, Gayle E. (CDC/DDID/NCIRD/DVD); Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM)
Subject: RE: updates on sentinel surveillance activities

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

I agree. We need an endpoint, and vaccination may offer a very logical and accepted one, assuming it is a reality.

Sarah Y. Park, MD, FAAP
State Epidemiologist
Chief, Disease Outbreak Control Division
Hawaii Department of Health

An ounce of prevention is worth a pound of cure. - Benjamin Franklin

“Like” us on the [Disease Outbreak Control Division's Facebook Page](http://health.hawaii.gov/docd/)
<http://health.hawaii.gov/docd/>



Please consider the environment before printing this e-mail or attachments.

From: Marielle Fricchione <Marielle.Fricchione@cityofchicago.org>
Sent: Tuesday, February 25, 2020 5:16 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Allison Arwady <Allison.Arwady@cityofchicago.org>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; Brian Hiatt <brian.hiatt@doh.wa.gov>; Christine Mahle <cmahle@health.nyc.gov>; Christopher Shields <Christopher.Shields@cityofchicago.org>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Debra Wadford <debra.wadford@cdph.ca.gov>; Desmond, Edward <edward.desmond@doh.hawaii.gov>; Gail Cooksey <Gail.Cooksey@cdph.ca.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Godfred Masinde <godfred.masinde@sfdph.org>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <mlayton@health.nyc.gov>; Leslie Chapman <Leslie.Chapman@Illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb

<Molly.Lamb@Illinois.gov>; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Stephanie Black <Stephanie.Black@cityofchicago.org>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>
Cc: Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>
Subject: [EXTERNAL] RE: updates on sentinel surveillance activities

Hi all,

I may have missed it in the draft but I would like to make a request that the community mitigation plans are linked temporally to vaccine forecasting and availability. While I know we cannot predict when vaccine is available – the transition to that phase as the end goal needs to be apparent. Without an exit strategy – it is very difficult to convince a population to engage in community mitigation. This relates to someone’s previous comment of “how long do we close schools?”. From our work in Chicago on pan-flu preparedness, our experiences during H1N1, and our role in Crimson contagion as the epicenter – it was clear that community mitigation works best as a bridge to vaccine or a stand-in for vaccine delay.

Thanks,
Marielle

Marielle Fricchione, MD

Medical Director, Immunization Program
Chicago Department of Public Health
2160 W. Ogden Ave | Chicago, IL 60612
Office: 312.746.5382 | Fax: 312.746.6388
marielle.fricchione@cityofchicago.org

From: [Duchin, Jeff](#)

Sent: Tuesday, February 25, 2020 7:21 AM

To: [Park, Sarah Y., MD](#); [Bresee, Joseph \(CDC/DDID/NCIRD/ID\)](#); [Langley, Gayle E. \(CDC/DDID/NCIRD/DVD\)](#); [Allison Arwady](#); [Balter, Sharon \(CDC ph.lacounty.gov\)](#); [Brian Hiatt](#); [Christine Mahle](#); [Christopher Shields](#); [Conover, Craig \(CDC illinois.gov\)](#); [Debra Wadford](#); [Desmond, Edward](#); [Gail Cooksey](#); [Ghinai, Isaac](#); [Godfred Masinde](#); [Green, Nicole \(CDC ph.lacounty.gov\)](#); [Hector Rivas](#); [Jain, Seema \(CDC cdph.ca.gov\)](#); [Jessica Sell](#); [Justin DeWitt](#); [Kauerauf, Judy \(CDC illinois.gov\)](#); [Kuhnert-Tallman, Wendi \(CDC/DDID/OD\)](#); [Layden, Jennifer \(CDC illinois.gov\)](#); [Layton, Marci \(CDC health.nyc.gov\)](#); [Leslie Chapman](#); [Lindquist, Scott SL \(CDC doh.wa.gov\)](#); [Marielle Fricchione](#); [Meredith Haddix](#); [Molly Lamb](#); [PGounder@ph.lacounty.gov](#); [Rakeman, Jennifer JR \(CDC health.nyc.gov\)](#); [Rose, Laura E. \(CDC/DDPHSS/OLSS/OLS\)](#); [Stephanie Black](#); [Thomas-Smith, Evonda](#); [Vagi, Sara J. \(CDC/DDPHSIS/CPR/DEO\)](#); [Weiss, Don \(CDC health.nyc.gov\)](#); [Zahn, Matthew](#)

Cc: [Armstrong, Gregory \(CDC/DDID/NCEZID/OD\)](#); [Langley, Gayle E. \(CDC/DDID/NCIRD/DVD\)](#); [Bialek,](#)

[Stephanie R. \(CDC/DDPHSIS/CGH/DPDM\)](#)

Subject: Re: updates on sentinel surveillance activities

Thanks, Sarah. I assume our actions will follow from the revised community mitigation guidance and associated triggers CDC is working on for COVID-19. A main challenge is for us doing enhanced surveillance if we get a positive. We don't currently have a network of flu surveillance sites we can tap into and would need to create de novo while addressing other response activities with too few staff/resources.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>

Sent: Tuesday, February 25, 2020 1:25:26 AM

To: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Arwady, Allison AA (CDC cityofchicago.org) <allison.arwady@cityofchicago.org>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; Brian Hiatt <brian.hiatt@doh.wa.gov>; Christine Mahle <cmahle@health.nyc.gov>; Christopher Shields <christopher.shields@cityofchicago.org>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Debra Wadford <debra.wadford@cdph.ca.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Desmond, Edward <edward.desmond@doh.hawaii.gov>; Gail Cooksey <Gail.Cooksey@cdph.ca.gov>; Ghinaï, Isaac <Isaac.Ghinaï@Illinois.gov>; Godfred Masinde <godfred.masinde@sfdph.org>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <mlayton@health.nyc.gov>; Leslie Chapman <Leslie.Chapman@Illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Marelle Fricchione <Marielle.Fricchione@cityofchicago.org>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb <Molly.Lamb@Illinois.gov>; PGounder@ph.lacounty.gov <PGounder@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Black, Stephanie SB (CDC cityofchicago.org) <stephanie.black@cityofchicago.org>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgg2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>

Cc: Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Bialek, Stephanie R. (CDC/DDPHSIS/CGH/DPDM) <zqg7@cdc.gov>

Subject: RE: updates on sentinel surveillance activities

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Added just a couple comments to distinguish from my previous comments you kept in the document.

Regarding social distancing measures, the challenge may be getting people to adhere to them if they're difficult to maintain. Distance learning sounds ideal, but unless work places can all accommodate a parent working at home to watch their child, that may not work. Then, there's the question of what exactly is the role of children in transmission. If they're tending to be asymptomatic/mild and have little or no role, then great. If they're asymptomatic/mild but have even some role in transmission, then that's going to be a huge challenge.

Sarah Y. Park, MD, FAAP
State Epidemiologist
Chief, Disease Outbreak Control Division
Hawaii Department of Health

An ounce of prevention is worth a pound of cure. - Benjamin Franklin

"Like" us on the [Disease Outbreak Control Division's Facebook Page](http://health.hawaii.gov/docd/)
<http://health.hawaii.gov/docd/>



Please consider the environment before printing this e-mail or attachments.

From: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>

Sent: Monday, February 24, 2020 3:42 PM

To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Arwady, Allison AA (CDC cityofchicago.org) <allison.arwady@cityofchicago.org>; Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>; Brian Hiatt <brian.hiatt@doh.wa.gov>; Christine Mahle <cmahle@health.nyc.gov>; Christopher Shields <christopher.shields@cityofchicago.org>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Debra Wadford <debra.wadford@cdph.ca.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Desmond, Edward <edward.desmond@doh.hawaii.gov>; Gail Cooksey <Gail.Cooksey@cdph.ca.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Godfred Masinde <godfred.masinde@sfdph.org>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <mLAYTON@health.nyc.gov>; Leslie Chapman <Leslie.Chapman@Illinois.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Marelle Fricchione <Marielle.Fricchione@cityofchicago.org>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb <Molly.Lamb@Illinois.gov>; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov) <jrakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Park, Sarah Y., MD <sarah.park@doh.hawaii.gov>; Black, Stephanie SB (CDC cityofchicago.org) <stephanie.black@cityofchicago.org>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Vagi, Sara J. (CDC/DDPHSS/CPR/DEO) <hgg2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>

Cc: Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Bialek, Stephanie R.

(CDC/DDPHSIS/CGH/DPDM) <zgg7@cdc.gov>

Subject: [EXTERNAL] RE: updates on sentinel surveillance activities

All,

Here is the revised version of the document re actions to take now and when a first case is identified in the community for your review. Has more info that represents upcoming CDC thoughts on Comm Mitigation and Health care mitigation. Can make into a table or figure to make more approachable but wanted to get agreeable content first. See what you think and if this is useful for your own planning

Re comms – have submitted edits on all comms materials tonight back to CDC Comms folks. Will let them incorporate that will share with you all tomorrow AM

I think that we have all agreed on a few principals –

- we all have a joint Comms plan, with local jurisdictions being in the lead and CDC supporting you all (that you would announce anything first)
- we have a shared understanding of what actions would be taken if positives are found – the attached doc is for that purpose – but we acknowledge that we will convene when positives occur and think through together as things will change
- CDC will support investigation of early cases as requested by you all.

Finally, I would ask that you all think through funding required for surveillance and response for this project to be ready if and when asked for a proposal by CDC

Finally (really) – Greg Armstrong will be joining the response in my place starting tomorrow. I will linger a bit to support this project but Gayle will continue as CDC POC, and Greg and Stephanie Bialek (EPI-Task Force Lead) will be more present in the discussions going forward. I will fade out for a while but back soon. If you all can include Greg on emails to me, that would be great

Thanks again
Joe

Joseph Bresee, MD
Deputy Incident Manager
CDC 2020 nCoV response

From: State and Local Readiness (CDC)
Sent: Wednesday, February 26, 2020 10:12 AM PST
To: State and Local Readiness (CDC)
Subject: 2-25-2020 CDC COVID-19 Daily Key Points and STLT Westerdam Information
Attachments: CDC_COVID-19_Daily Key Points__2_25_2020_FINAL.pdf

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Dear Colleagues:

Attached please find the CDC COVID-19 [daily key points](#) for Tuesday, February 25, 2020.

Below you will find a CDC media statement regarding the Westerdam cruise ship.

Westerdam Media Statement:

No testing of passengers from the Westerdam Cruise Ship for SARS-CoV-2, the virus that causes COVID-19, has been done at CDC. CDC is aware that an American passenger on the Westerdam tested positive for infection with SARS-CoV-2 in Malaysia and that two sequential tests on samples from that same person were negative. CDC is aware that follow-up testing among more than 1,500 passengers from the Westerdam has all been negative.

At this time, CDC considers passengers from the Westerdam to be at “low risk” of SARS-CoV-2 infection during the 14 days after their last exposure per the agency’s Risk Assessment guidance at <https://www.cdc.gov/coronavirus/2019-ncov/php/risk-assessment.html>. Given this level of risk, testing of Westerdam passengers for SARS-CoV-2 is not recommended unless additional exposures are identified to warrant testing.

Thank you,
State Coordination Task Force

Sent by BCC to PHEP Directors, SHOS, State Epis, Non-governmental Partners, STLTs, and BCHC

CDC Daily Key Points

Coronavirus Disease 2019 (“COVID-19”) Outbreak

February 25, 2020

All content updated since February 24 is shown in colored text.

MAIN KEY POINTS

- There is an expanding global outbreak of respiratory illness caused by a novel (new) coronavirus.
- This virus has been named “SARS-CoV-2;” the disease it causes has been named COVID-19.
 - Due to potential for confusion with SARS-CoV, where possible, public communications will use “the virus that causes COVID-19.”
- While most COVID-19 cases outside of China have been associated with travel to or from China, community spread is being detected in a growing number of countries.
- Destinations with apparent community spread of COVID-19 include Hong Kong, Iran, Italy, Japan, Singapore, South Korea, Taiwan, and Thailand.
- The fact that COVID-19 has caused illness, including illness resulting in death, and sustained person-to-person spread is concerning. These factors meet two of the criteria of a pandemic.
- As community spread is detected in more and more countries, the world moves closer toward meeting the third criteria, worldwide spread of the new virus.
- The potential public health threat posed by COVID-19 is high, both globally and to the United States.
- But individual risk is dependent on exposure.
- For the general American public, who are unlikely to be exposed to this virus at this time, the immediate health risk from COVID-19 is low.
- Under current circumstances, certain people will have an increased risk of infection. For example, healthcare workers caring for patients with COVID-19 and other close contacts of persons with COVID-19. CDC has developed guidance to help in the risk assessment and management of people with potential exposures to COVID-19.
- However, it’s important to note that current global circumstances suggest it is likely that this virus will cause a pandemic. In that case, risk assessment would be different.
- Global efforts at this time are focused concurrently on containing spread of this virus and mitigating the impact of this virus.
- The federal government is working closely with state, local, tribal, and territorial partners, as well as public health partners, to respond to this public health threat.
- The public health response is multi-layered, with the goal of detecting and minimizing introductions of this virus in the United States so as to reduce the spread and the impact of this virus.
- CDC is operationalizing all of its pandemic preparedness and response plans, working on multiple fronts to meet these goals, including specific measures to [prepare communities](#) to respond local transmission of the virus that causes COVID-19.
- [Pandemic guidance](#) developed in anticipation of an influenza pandemic is being repurposed and adapted for a COVID-19 pandemic.
- Public health partners are encouraged to review their pandemic preparedness plans at this time.

- At this time, there is no vaccine to protect against COVID-19 and no medications approved to treat it.
- [Nonpharmaceutical interventions](#) would be the most important response strategy.

SITUATION UPDATE

- On February 25, a *Morbidity and Mortality Weekly Report (MMWR)* Update was published titled [“Public Health Response to the Coronavirus Disease 2019 Outbreak — United States, February 24, 2020.”](#) (See Section “MMWR Update.”)
- To date, 37 international locations (including the U.S.) have reported confirmed cases of COVID-19.
- On February 24, CDC issued a Level 2 Travel Notices (Practice Enhanced Precautions) for Iran and Italy.
- On February 24, CDC issued Level 3 Travel Alert Notices (Practice Usual Precautions) for South Korea.
- CDC also recommends that all travelers reconsider cruise ship voyages into or within Asia at this time.
- This is consistent with [guidance by the U.S. State Department](#).
- This is a rapidly evolving situation. CDC is constantly reviewing and updating its guidance as needed.
- CDC is reporting confirmed cases of COVID-19 in the United States in two categories:
 1. Cases detected through our domestic public health systems, and
 2. Cases among people who were repatriated via U.S. State Department flights from Wuhan, China and from the Diamond Princess cruise ship (Japan).
- Fourteen cases of COVID-19 have been detected in California, Illinois, Massachusetts, Washington, and Wisconsin through U.S. public health surveillance.
- Two of these cases occurred through person-to-person spread. The remaining cases all were in persons who had travel to China.
- [43 cases of COVID-19 have been detected among the 1,100+ people repatriated from Hubei Province, China and the Diamond Princess. \(That includes 3 people repatriated from Wuhan and 40 people who were repatriated from the Diamond Princess, an increase of 4 since yesterday.\)](#)
- Almost all of the people from the Wuhan flights who were quarantined have finished their 14-day quarantine period.
- Because the passengers on the Diamond Princess were in a close setting where there was significant spread of COVID-19, they are considered at high-risk for infection. CDC expects to see additional confirmed cases of among those passengers.

MMWR UPDATE:

- [As of February 23, 2020, there were 76,936 reported cases in mainland China and 1,875 cases in locations outside mainland China.](#)
- [Fourteen cases have been diagnosed in the United States, and an additional 39 cases have occurred among repatriated persons from high-risk settings, for a current total of 53 cases within the United States.](#)
 - [No deaths have been reported in the United States.](#)

- CDC and partners are implementing aggressive measures to slow and contain the spread of COVID-19 in the United States.
 - Although these measures might not prevent widespread transmission of the virus in the United States, they are being implemented to
 - 1) slow the spread of illness;
 - 2) provide time to better prepare state and local health departments, health care systems, businesses, educational organizations, and the general public in the event that widespread transmission occurs; and
 - 3) better characterize COVID-19 to guide public health recommendations and the development and deployment of medical countermeasures, including diagnostics, therapeutics, and vaccines.
 - CDC's COVID-19 Response by the numbers:
 - As of February 24, 2020, a total of 1,336 CDC staff members have been involved in the COVID-19 response, including clinicians (i.e., physicians, nurses, and pharmacists), epidemiologists, veterinarians, laboratorians, communicators, data scientists and modelers, and coordination staff members.
 - CDC teams work with the Department of Homeland Security at 11 airports to screen all travelers from China who are returning to the United States.
 - As of February 23, 2020
 - A total of 46,016 air travelers have been screened at these 11 U.S. airports.
 - Eleven travelers were referred to a hospital and tested for infection; one tested positive and was isolated and managed medically.
 - Seventeen travelers were quarantined for 14 days because of travel from Hubei Province, China.
 - 479 persons for 43 states and territories had been or are being tested for COVID-19; 14 (3%) had a positive test, 412 (86%) had a negative test, and 53 (11%) test results are pending.
 - During January 18-February 23, 2020, CDC laboratories used real-time reverse transcription–polymerase chain reaction (RT-PCR) to test 2,620 specimens from 1,007 persons for SARS-CoV-2.
 - During January 29-February 6, 2020, the U.S. government repatriated 808 U.S. citizens, residents, and their families from Hubei Province, China, on five chartered flights.
 - CDC posts travel notices to inform travelers and clinicians about current health issues that could affect travelers' health.
- CDC and partners are preparing for widespread transmission of COVID-19 in U.S. communities.
- [The report is available online.](#)

WHAT YOU CAN DO

- While the immediate risk of this new virus to the American public is believed to be low at this time, everyone can do their part to help us respond to this emerging public health threat:
 - It's currently flu and respiratory disease season and CDC recommends getting a flu vaccine, taking everyday preventive actions to help stop the spread of germs, and taking flu antivirals if prescribed.

- If you are a healthcare provider, be on the look-out for people with who recently traveled from China and fever and respiratory symptoms.
- If you are a healthcare provider caring for a COVID-19 patient or a public health responder, please take care of yourself and follow recommended infection control procedures.
- If you have been in China or have been exposed to someone sick with COVID-19 in the last 14 days, you will face some limitations on your movement and activity. Please follow instructions during this time. Your cooperation is integral to the ongoing public health response to try to slow spread of this virus. If you develop COVID-19 symptoms, contact your healthcare provider, and tell them about your symptoms and your travel or exposure to a COVID-19 patient.
- For people who have had close contact with someone with COVID-19 who develop symptoms, contact your healthcare provider, and tell them about your symptoms and your exposure to a COVID-19 patient.
- For people who are ill with COVID-19, please follow CDC guidance on how to reduce the risk of spreading your illness to others. This guidance is on the CDC website.

TESTING

- CDC has two laboratories conducting testing for the virus that causes COVID-19. CDC can test approximately 400 specimens per day.
- CDC's testing capacity is more than adequate to meet current testing demands. (There is no backlog of tests at CDC.)
- A number of laboratories are able to test for the virus that causes COVID-19 using CDC's test.
- All confirmatory testing for COVID-19 continues to be performed at CDC. (All positive results from testing conducted in non-CDC, U.S. laboratories must be confirmed at CDC.)
- CDC continues to work on remanufacturing test kits to detect the virus that causes COVID-19, which will be distributed following rigorous quality control processes.
- Commercial labs are working to develop their own tests and hopefully will be available soon. This will allow a greater number of tests to happen close to where potential cases are.

CDC ACTIONS

- CDC is aggressively responding to the global outbreak of COVID-19 and preparing for the potential of community spread in the United States.
- **Preparing first responders, healthcare providers, and health systems:**
 - Establishing **visibility across healthcare systems** to understand healthcare use, particularly surges in demand for medical care and associated resources.
 - Conducting **extensive outreach to clinical and hospital professional organizations** to ensure health system **preparedness**.
 - Producing more than **23 guidance documents** on infection control, hospital preparedness assessments, personal protective equipment (PPE) supply planning, and clinical evaluation and management (as of February 22, 2020).
 - Working closely with healthcare facilities and providers to **reinforce infection control principles** that recognize PPE is one component of a larger set of practices that help to limit the spread of disease.

- **Developing a range of respirator conservation strategies**, including strategies to make supplies last longer (such as using alternative products like reusable respirators) and extending the use of disposable respirators.
- Leveraging existing **telehealth tools** to direct people to the right level of healthcare for their medical needs.
- **Working with supply chain partners** to understand supply usage, what products are available, and when more aggressive measures may need to be taken to ensure that healthcare workers at highest risk have access to PPE.
- **Sharing information with stakeholders** to help them recognize when to shift the strategies they are using.
- **Reinforcing state, territorial, and local public health readiness:**
 - **Assessing state and local readiness** to implement community mitigation measures like home containment, including housing and transportation needs.
 - Coordinating with states to **identify and mitigate gaps in readiness** that will help reduce the spread of disease in the community while protecting workers, infrastructure, and institutions.
 - Linking public health agencies and healthcare systems to **identify and mitigate stressors to the health system**
 - **Tracking stockpiles of PPE** across jurisdictions.
 - Working with state and local public health to **use existing Public Health Emergency Preparedness (PHEP) funding** to support COVID-19 preparedness and response activities.
 - Leveraging funding mechanisms to help states **accelerate preparedness activities**.
 - Providing **technical assistance and guidance** to states to improve their ability to respond to the outbreak.
- **Supporting communities, businesses, and schools:**
 - **Creating business guidance** to help the public and private sectors ensure they are able to operate with adaptations like telework and flexible sick leave policies, as well as how to respond if an employee gets sick.
 - **Developing guidance for childcare programs, K-12 schools, and colleges/universities** to help them plan and prepare for COVID-19 and respond if there is a local outbreak in their community.
 - Providing **planning guides for COVID-19** that households, community- and faith-based organizations, event planners of mass gatherings, and public health communicators can use.
 - Educating communities about **nonpharmaceutical interventions (NPIs)** that help slow the spread of illness, like COVID-19.

NONPHARMACEUTICAL INTERVENTIONS

- Nonpharmaceutical Interventions (NPIs) are actions, apart from getting vaccinated and taking medicine, that people and communities can take to help slow the spread of illnesses like pandemic flu or COVID-19.
- NPIs are also known as community mitigation strategies.
- When a new virus spreads among people, causing illness worldwide, it is called a pandemic.

- Because the virus is new, the human population has little or no immunity against it. This allows the virus to spread quickly from person to person worldwide.
- NPIs are among the best ways of controlling a pandemic caused by a respiratory virus when vaccines are not yet available.
- NPIs are grouped in three categories:
 1. personal NPIs (personal protective measures for everyday use and personal protective measures reserved for influenza pandemics);
 2. community NPIs (social distancing measures and school closures and dismissals); and
 3. environmental NPIs (surface cleaning measures)
- View [information about NPIs](#) and [factors to consider before implementing nonpharmaceutical interventions](#).

For more information please visit the Coronavirus Disease 2019 Outbreak Page at:
www.cdc.gov/COVID19.

From: Holshue, Michelle L (DOH Fellow)
Sent: Wednesday, February 26, 2020 3:00 PM PST
To: Duchin, Jeff; Spitters, Christopher (DOHi); Dyal, Jonathan (CDC/DDID/NCEZID/DHCPP); Hollianne, Bruce (DOHi)
CC: Lindquist, Scott W (DOH)
Subject: FW: Follow up serum from enhanced contact investigation
Attachments: Follow-up Contact Investigation for HDs_24FEB2020_draft.docx

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Dr. Duchin and Dr. Spitters,

I wanted to update you about the follow-up for the enhanced contact investigation. CDC is planning to send a team back out to our area next week to collect and ship serum specimens. This team will be led by Dr. Dyal (copied here); I'm helping to coordinate this time around.

If it is alright with you, we will start to reach out to the participants from your jurisdictions tomorrow afternoon in order to schedule follow-up blood draws for next week. These will likely take place at people's homes (although if we have the option to set up blood draws at people's work sites that would maintain privacy and facilitate participation, we would love to explore that!)

I'm attaching an information sheet, but please let me know if you have any questions.

Thanks for your help,
Michelle

Michelle L. Holshue, MPH, BSN, RN
LCDR, U.S. Public Health Service
Epidemic Intelligence Service Officer
Office of the State Health Officer
Washington State Department of Health
michelle.holshue@doh.wa.gov
206-418-5418 (ph) | 206-364-1060 (fax)
www.doh.wa.gov

From: Biggs, Holly (CDC/DDID/NCIRD/DVD)
Sent: Sunday, February 23, 2020 10:08 AM
To: 'Duchin, Jeff' <Jeff.Duchin@kingcounty.gov>; Christopher Spitters <christopher.spitters@comcast.net>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: RE: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,

Thank you. We will update when we start in case any questions come in. Nothing else needed from your end – wanted to make sure you were aware and had the opportunity to provide any input/concerns.

Chris, in answer to your question about confirmed cases. There are other protocols under development for case follow up, but these will be raised separately. Right now, we don't have plans to reach out to these folks when we are in WA. For the enhanced contact investigation follow up, we will only reach out to the contacts who we previously interviewed.

Thanks,
Holly

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 3:03 PM
To: Christopher Spitters <christopher.spitters@comcast.net>; Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker <cparker@snohd.org>
Subject: Re: Follow up serum from enhanced contact investigation

Holly, sorry I missed your message in my inbox. I don't have concerns about you contact these people. The protocol seems to indicate the contacts have already consented to this - what am I missing?

Please let us know when you start so we can share with our team just in case they get questions.

Thanks much

Jeff

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Christopher Spitters <christopher.spitters@comcast.net>
Sent: Saturday, February 22, 2020 11:46 AM
To: Biggs, Holly (CDC/DDID/NCIRD/DVD) <xdc6@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Chu, Victoria (CDC/DDID/NCIRD/DVD) <pgz4@cdc.gov>; Hollianne Bruce <hbruce@snohd.org>; Carrie Parker

<cparker@snohd.org>

Subject: Re: Follow up serum from enhanced contact investigation

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi, Holly.

OK with me...what (if anything) do you need from us beyond being aware of your plans?

Are you already following up with our case(s) or will you be planning to do as set forth in the draft protocol? Would you like me to give him a heads up? Note: one of the Travis AFB→Spokane transfers from the Diamond Princess is also a Snohomish County resident. We do not have a relationship with her and likely will not until she returns home.

Thanks,
Chris

From: "Biggs, Holly (CDC/DDID/NCIRD/DVD)" <xdc6@cdc.gov>

Date: Friday, February 21, 2020 at 9:56 AM

To: "Duchin, Jeff" <jeff.duchin@kingcounty.gov>, Christopher Spitters <christopher.spitters@comcast.net>

Cc: Scott Lindquist <scott.lindquist@doh.wa.gov>, "Chu, Victoria (CDC/DDID/NCIRD/DVD)" <pgz4@cdc.gov>

Subject: Follow up serum from enhanced contact investigation

Hi Jeff and Chris,

I hope you are doing well. I wanted to follow up about the possibility of collecting serum from our group of close case contacts at ~4-6 week timepoint (which is coming up quickly!). The aim of this is to assess a possible immune response to SARS-CoV-2 exposure. We have ~38 people on the list that we would reach out to. This follow up was part of the initial protocol, but of course participation would be voluntary.

If ok with you, we are prepared to coordinate this from Atlanta, including reaching out to those who participated in the initial part of the enhanced contact tracing protocol to ask about participation/consent, and making arrangements for blood collection. We can arrange to send a couple EISOs from Atlanta who were involved in the initial phase to do this follow up blood collection and shipment. We can also share a brief consent form and description of the follow up process that we are currently drafting. Also attached the initial broad protocol.

Thank you for your consideration.

Holly

Holly Biggs, MD, MPH

Medical Epidemiologist
Respiratory Viruses Branch
Division of Viral Diseases
National Center for Immunization and Respiratory Diseases
U.S. Centers for Disease Control and Prevention
Office: 404-639-3989
Email: hbiggs@cdc.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Sent: Saturday, February 22, 2020 10:24 AM PST
To: Duchin, Jeff
CC: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello Jeff. The guidance was written collecting identified specimens. We did not create guidance for de-identified specimens. --gayle

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 22, 2020 12:56 PM
To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>
Subject: Re: sentinel surveillance updates

I just noticed that the protocol does not have an option for deidentified testing...is that intentional or an omission? I can't move this forward here without the CDC protocol...

Jeffrey S. Duchin, MD (he/him)
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Sent: Thursday, February 20, 2020 1:58 PM
To: Balter, Sharon (CDC health.nyc.gov) <sbalter@health.nyc.gov>; Bresee, Joseph (CDC/DDID/NCIRD/ID) <jsb6@cdc.gov>; Christine Mahle <cmahle@health.nyc.gov>; Conover, Craig (CDC illinois.gov) <Craig.Conover@Illinois.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Ghinai, Isaac <Isaac.Ghinai@Illinois.gov>; Green, Nicole (CDC ph.lacounty.gov) <nicgreen@ph.lacounty.gov>; Hector Rivas <hrivas@ph.lacounty.gov>; Jain, Seema (CDC cdph.ca.gov) <Seema.Jain@cdph.ca.gov>; Jessica Sell <jsell@health.nyc.gov>; Justin DeWitt <Justin.Dewitt@Illinois.gov>; Kauerauf, Judy (CDC illinois.gov) <judy.kauerauf@illinois.gov>; Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Layden, Jennifer (CDC illinois.gov) <jennifer.layden@illinois.gov>; Layton, Marci (CDC health.nyc.gov) <mLAYTON@health.nyc.gov>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Meredith Haddix <MHaddix@ph.lacounty.gov>; Molly Lamb <Molly.Lamb@Illinois.gov>; PGounder@ph.lacounty.gov <PGounder@ph.lacounty.gov>; Rakeman, Jennifer JR (CDC health.nyc.gov) <irakeman@health.nyc.gov>; Rose, Laura E. (CDC/DDPHSS/OLSS/OLS) <zey9@cdc.gov>; Sarah Park <sarah.park@doh.hawaii.gov>; Thomas-Smith, Evonda <Evonda.Thomas-Smith@Illinois.gov>; Vagi, Sara

J. (CDC/DDPHSIS/CPR/DEO) <hgg2@cdc.gov>; Weiss, Don (CDC health.nyc.gov) <dweiss@health.nyc.gov>; Zahn, Matthew <MZahn@ochca.com>
Cc: Balter, Sharon (CDC ph.lacounty.gov) <sbalter@ph.lacounty.gov>
Subject: RE: sentinel surveillance updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello. I have enclosed an updated guidance document that includes information on shipping specimens and an example of an information sheet that you can provide to patients. The guidance document only lists the details of what is planned at 2 sites, but that does not preclude others from starting. They were just used as examples for the EUA submission. A shipping log is also attached. **We are ready to start receiving specimens** whenever you are ready to send them. We cannot start testing the identified specimens until the EUA is amended, but we believe that will happen quickly. For those that want to send de-identified specimens, we can receive and test them now.

Our questions to you:

1. **Are you planning to send de-identified specimens and when?**
2. **Are you planning to send identifiable specimens and when?**

On the call tomorrow, we will talk about options for data transfer. There will also likely be time to talk about triggers for changing current containment strategies.

Talk to you tomorrow. --gayle

-----Original Appointment-----

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)

Sent: Wednesday, February 19, 2020 5:22 PM

To: Langley, Gayle E. (CDC/DDID/NCIRD/DVD); Balter, Sharon (CDC health.nyc.gov); Bresee, Joseph (CDC/DDID/NCIRD/ID); Christine Mahle; Conover, Craig (CDC illinois.gov); Duchin, Jeff (CDC kingcounty.gov); Ghinai, Isaac; Green, Nicole (CDC ph.lacounty.gov); Hector Rivas; Jain, Seema (CDC cdph.ca.gov); Jessica Sell; Justin DeWitt; Kauerauf, Judy (CDC illinois.gov); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Layden, Jennifer (CDC illinois.gov); Layton, Marci (CDC health.nyc.gov); Lindquist, Scott SL (CDC doh.wa.gov); Meredith Haddix; Molly Lamb; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov); Rose, Laura E. (CDC/DDPHSS/OLSS/OLS); Sarah Park; Thomas-Smith, Evonda; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Weiss, Don (CDC health.nyc.gov); Zahn, Matthew

Cc: Balter, Sharon (CDC ph.lacounty.gov)

Subject: sentinel surveillance updates

When: Friday, February 21, 2020 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: Skype Meeting

[Join Skype Meeting](#)

Trouble Joining? [Try Skype Web App](#)

Join by phone

(404) 553-8912,,37963494# (Atlanta Dial-in Conference Region)
(855) 348-8390,,37963494# (Atlanta Dial-in Conference Region)

English (United States)
English (United States)

[Find a local number](#)

Conference ID: 37963494

[Forgot your dial-in PIN?](#) | [Help](#)

.....

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Sent: Saturday, February 29, 2020 12:07 PM PST
To: Helen Y Chu; Cowgill, Karen
CC: Kuhnert-Tallman, Wendi (CDC/DDID/OD); Englund, Janet; Duchin, Jeff
Subject: RE: SEATTLE Flu Study Lab Result
Attachments: COVID_19 sentinel surveillance Patient notification Feb 29 2020.docx

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello Helen. Enclosed is the notification letter that was approved to be used under the CDC's EUA. – Gayle

From: Helen Y Chu <helenchu@uw.edu>
Sent: Saturday, February 29, 2020 2:40 PM
To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Langley, Gayle E. (CDC/DDID/NCIRD/DVD) <fez7@cdc.gov>
Cc: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Englund, Janet <janet.englund@seattlechildrens.org>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: Re: SEATTLE Flu Study Lab Result

Thanks for the call today. As a quick follow up, could you please send me a **version of the consent form that you would like to use for these studies going forward?** I'm going to try to get this through immediately. My cell phone number is 617 935 9509.
Helen

Helen Y Chu, MD MPH
Division of Allergy & Infectious Diseases
chulab.org

Our new lab location is UW South Lake Union

From: "Cowgill, Karen" <n-kcowgill@kingcounty.gov>
Date: Saturday, February 29, 2020 at 10:31 AM
To: Jeff Duchin <Jeff.Duchin@kingcounty.gov>, "Stenzel, Timothy" <Timothy.Stenzel@fda.hhs.gov>, Robin A Prentice <robins4@uw.edu>, Mark Rieder <mrieder@uw.edu>, Helen Y Chu <helenchu@uw.edu>, "Langley, Gayle E (CDC)" <fez7@cdc.gov>, "Kuhnert-Tallman, Wendi L (CDC)" <wdk1@cdc.gov>, "Kay, Meagan" <Meagan.Kay@kingcounty.gov>
Cc: "Janet Englund (janet.englund@seattlechildrens.org)" <janet.englund@seattlechildrens.org>, "scott.lindquist@doh.wa.gov" <scott.lindquist@doh.wa.gov>, "Jay A. Shendure" <shendure@uw.edu>, Trevor Bedford <trevor@bedford.io>, Istarita <Istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

Yes I can join this call on behalf of PHSKC.

Karen

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Saturday, February 29, 2020 10:08:36 AM
To: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>; Robin A Prentice <robins4@uw.edu>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Janet Englund (<janet.englund@seattlechildrens.org> <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

Hello folks we are overwhelmed here in the public health department and not able to join this call. I'm hoping Karen can join for us. It would be really fantastic if FDA can find a way to allow the SFS study to continue to test a large number of samples to help us understand about community-based transmission especially in light of our current outbreak and other case with no travel history.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>
Sent: Saturday, February 29, 2020 10:01:01 AM
To: Robin A Prentice <robins4@uw.edu>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Janet Englund (<janet.englund@seattlechildrens.org> <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Sounds good.

From: Robin A Prentice <robins4@uw.edu>
Date: February 29, 2020 at 12:44:15 PM EST
To: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>, Cowgill, Karen <n-kcowgill@kingcounty.gov>, Mark

Rieder <mrieder@uw.edu>, Helen Y Chu <helenchu@uw.edu>, Langley, Gayle E (CDC) <fez7@cdc.gov>, Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>, Duchin, Jeff <Jeff.Duchin@kingcounty.gov>, Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>, Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>, Jay A. Shendure <shendure@uw.edu>, Trevor Bedford <trevor@bedford.io>, Istarita <Istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Hello Tim,

Would it work for us to talk at 11am Pacific time, 2pm Eastern? I will send a zoom invite in a moment.

Robin

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>

Sent: Saturday, February 29, 2020 9:11 AM

To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>

Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>

Subject: RE: SEATTLE Flu Study Lab Result

Hi,

Can one or more folks from the Seattle Flu Study lab give me a call on my cell 202-308-9464? Leave a VM with number to get back to you right away if it goes to VM.

Thanks!

Best,

Tim

Timothy T. Stenzel, MD, PhD

*Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality*

**Center for Devices and Radiological Health
U.S. Food and Drug Administration**

Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell

Administrative Assistant

**OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality**

CDRH | Food and Drug Administration
White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993
Ph: 301-796-7692
Jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>
Sent: Saturday, February 29, 2020 10:53 AM
To: Cowgill, Karen <n-kcowgill@kingcounty.gov>; Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <Istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result

Hi Karen,

I did connect with Mark a little after an hour yesterday by phone.

Wanted to let you know of this PR and linked new guidance that just was released.

We are still working on your particular situation.

<https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-issues-new-policy-help-expedite-availability-diagnostics>

Best,
Tim

Timothy T. Stenzel, MD, PhD

*Director, OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality*

Center for Devices and Radiological Health

U.S. Food and Drug Administration

Timothy.Stenzel@fda.hhs.gov

Jennifer Campbell

Administrative Assistant

**OHT7: Office of In Vitro Diagnostics and Radiological Health
Office of Product Evaluation and Quality**

CDRH | Food and Drug Administration
White Oak, Bldg. 66 3403 | 10903 New Hampshire Avenue | Silver Spring, MD 20993
Ph: 301-796-7692
Jennifer.Campbell@fda.hhs.gov

Excellent customer service is important to us. Please take a moment to provide feedback regarding the customer service you have received: <https://www.research.net/s/cdrhcustomerservice?ID=1900&S=E>

From: Cowgill, Karen <n-kcowgill@kingcounty.gov>
Sent: Friday, February 28, 2020 4:46 PM
To: Mark J Rieder <mrieder@uw.edu>; Helen Y Chu <helenchu@uw.edu>; Stenzel, Timothy <Timothy.Stenzel@fda.hhs.gov>; Langley, Gayle E (CDC) <fez7@cdc.gov>; Kuhnert-Tallman, Wendi L (CDC) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Cc: Robin A Prentice <robins4@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <istarita@uw.edu>
Subject: RE: SEATTLE Flu Study Lab Result
Importance: High

Hi Tim, et al. at CDC and Mark, et al. at SFS – Jeff Duchin (Chief Health Officer at Public Health Seattle-King County) asked me to follow up with you about the outcome of our discussion earlier today (9 PT/12 ET) about Seattle Flu Study testing for SARS-CoV-2.

At the end of the call, Tim said he would get back to Mark within the hour, but we haven't heard anything on our end.

Could someone please send a summary of where things stand and specifically

- what the current guidance is about SFS continued testing of samples for nCoV (retrospective and prospective)
- if testing continues, what is the flow of information to public health / re-contacting patients with results
- any other relevant info (e.g., was the lot of the kit SFS used to confirm their initial positive the same lot that CDC had QC'd?)

Thank you,

Karen Cowgill, PhD, MSc (*she/her*)
COVID-19 Response Epidemiologist
Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Affiliate Assistant Professor in Global Health, University of Washington
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-3087; Fax: (206) 296-4803
E-mail: n-kcowgill@kingcounty.gov

From: Mark J Rieder <mrieder@uw.edu>
Sent: Thursday, February 27, 2020 10:57 PM
To: Helen Y Chu <helenchu@uw.edu>
Cc: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Robin A Prentice <robins4@uw.edu>; Janet Englund (<janet.englund@seattlechildrens.org> <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>; Jay A. Shendure <shendure@uw.edu>; Trevor Bedford <trevor@bedford.io>; Istarita <istarita@uw.edu>
Subject: Re: SEATTLE Flu Study Lab Result

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Here is the Zoom link for the call in tomorrow (Friday, 2/28 @ 9 am PT)
Mark Rieder is inviting you to a scheduled Zoom meeting.

Topic: CDC Call
Time: Feb 28, 2020 09:00 AM Pacific Time (US and Canada)

Join Zoom Meeting
<https://washington.zoom.us/j/265821853>

Meeting ID: 265 821 853

One tap mobile
+16699006833,,265821853# US (San Jose)
+16468769923,,265821853# US (New York)

Dial by your location
+1 669 900 6833 US (San Jose)
+1 646 876 9923 US (New York)
Meeting ID: 265 821 853

On Thu, Feb 27, 2020 at 10:50 PM Helen Y Chu <helenchu@uw.edu> wrote:

Let's all plan to be on a 9:00 am call tomorrow to discuss this. Robin, can you set up a zoom call and include whoever else should join from the SFS team.
Thank you.

Get [Outlook for iOS](#)

From: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Sent: Thursday, February 27, 2020 8:19 PM

To: Duchin, Jeff (CDC kingcounty.gov)
Cc: Helen Y Chu; Janet Englund (janet.englund@seattlechildrens.org); Lindquist, Scott SL (CDC doh.wa.gov); Cowgill, Karen
Subject: Re: SEATTLE Flu Study Lab Result

Thanks much Jeff for connecting us. Happy to make the time any time - 7:30 your time is fine but I will wait to see the calendar invite to confirm.

Thanks!

Get [Outlook for iOS](#)

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Thursday, February 27, 2020 11:17:20 PM
To: Kuhnert-Tallman, Wendi (CDC/DDID/OD) <wdk1@cdc.gov>
Cc: Helen Y Chu <helenchu@uw.edu>; Janet Englund (janet.englund@seattlechildrens.org) <janet.englund@seattlechildrens.org>; Lindquist, Scott SL (CDC doh.wa.gov) <scott.lindquist@doh.wa.gov>; Cowgill, Karen <n-kcowgill@kingcounty.gov>
Subject: SEATTLE Flu Study Lab Result

Wendy,

Thanks for helping us navigate with FDA colleagues what we can say/do in response to a potential positive test result from the SFS research assay. Helen Chu and Jan Englund are the SFS researchers that can provide the details of the test method and other relevant information. I'm also copying Scott Lindquist, the WA State DOH communicable disease epidemiologist and Karen Cowgill who works on surveillance with us. It probably would be good to have a call early tomorrow Pacific time (7:30) but Helen and Jan should schedule the time with you.

Very much appreciate your help.

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

SARS-CoV-2 Enhanced Contact Investigation – Follow-up

February 2020

DESCRIPTION:

As part of the public health response to the SARS-CoV-2 outbreak, we are conducting an enhanced contact investigation to better understand SARS-CoV-2 transmission and asymptomatic infection. This information will help inform risk assessment of close contacts and recommendations related to public health control measures such as isolation and quarantine. For the follow-up component of the enhanced contact investigation, we plan to obtain serum from close contacts ~4-6 weeks after the last exposure to the case to test for antibodies to SARS-CoV-2. The goal of serologic testing for SARS-CoV-2 is to identify prior SARS-CoV-2 infection that may not have been detected by the initial specimen collection and testing.

Serologic assays will likely include enzyme-linked immunosorbent assay (ELISA), and microneutralization testing (MNT). As these tests are refined, it is anticipated that additional serologic tests and quantitative testing for different classes of serum antibody might be performed. Currently, the available serologic assays have not been approved as diagnostic assays, and test results will not be shared with the participants.

OBJECTIVE: To assess the presence of SARS-CoV-2-specific antibody in close contacts of a person infected with SARS-CoV-2.

FOLLOW UP INVESTIGATION STEPS:

1. Identify close contacts that participated in the enhanced contact investigation.
2. Provide an explanation of the follow-up visit and blood collection, and obtain verbal assent for voluntary participation by phone.
3. Schedule a follow-up home visit.
4. Obtain written consent and provide a copy of a 1-page explanation of the follow-up enhanced contact investigation during the home visit.
5. Collect the serum specimen wearing standard personal protective equipment for phlebotomy (gloves only).
6. Process and ship the specimens to CDC for testing.

PATIENT CONFIDENTIALITY/ETHICAL ISSUES:

All data will be kept confidential to the extent allowed by law. CDC is collaborating with state and local health departments in the public health response to cases, suspect cases and contacts of cases with the 2019 novel coronavirus. This activity involves identification, control, or prevention of disease in response to an immediate public health threat; it is not public health research. Therefore, this activity does not require human subject/IRB review (01.25.20).

Procedures for Conducting Surveillance Activities that Include Testing to Detect Signals of Potential Community Transmission of SARS-CoV-2

February 23, 2020

The *[State Department of Health]* and the Centers for Disease Control and Prevention (CDC) are closely monitoring an outbreak of respiratory disease caused by a novel (new) coronavirus. Some person-to-person spread of this virus outside China has been detected. Because of your symptoms today, we would like to test to see if you (or your child) have an infection caused by this new coronavirus. Results from this test could help identify spread of the virus in the community.

A healthcare worker will use a sterile cotton-tipped swab to reach gently through your nostril (your child's nostril) to swab the inside of the back of your (your child's) nose. The swab will be sent to a public health laboratory for testing with a test that was authorized for emergency use. You (your child) may experience some temporary discomfort from the swab. If the test is positive, you will be contacted by your local health department and you might be asked to restrict your (your child's) movement. This may mean that you (your child) would need to stay away from other people until the infection has cleared. Also, you might be asked about who you (your child) has been in contact with since becoming ill. The people you (your child) has been in contact with might be contacted to see if they are ill too. You may also be asked to provide another swab for testing. You will not be contacted if the first test result is negative.

The persons involved in these testing activities and the state or local health department will know about your personal (your child's) information and the results of testing. Beyond this, your name (and your child's name) will be kept confidential and will not be shared.

There are currently no plans for future use of your laboratory specimens that can be linked back to you, but it is possible the information will be used in future public health investigations. However, these will NOT include human genetic analysis.

If you have any questions you can contact *[DPH contact info?]*

Please note you have the option to accept or refuse this testing.

Please sign here to indicate that you have read and understand this information:

Print Name

Signature/Parent's/guardian's signature

Date

From: Langley, Gayle E. (CDC/DDID/NCIRD/DVD)
Sent: Sunday, February 23, 2020 6:01 PM PST
To: Arwady, Allison AA (CDC cityofchicago.org); Balter, Sharon (CDC ph.lacounty.gov); Brian Hiatt; Christine Mahle; Christopher Shields; Conover, Craig (CDC illinois.gov); Debra Wadford; Duchin, Jeff; Edward Desmond; Gail Cooksey; Ghinai, Isaac; Godfred Masinde; Green, Nicole (CDC ph.lacounty.gov); Hector Rivas; Jain, Seema (CDC cdph.ca.gov); Jessica Sell; Justin DeWitt; Kauerauf, Judy (CDC illinois.gov); Kuhnert-Tallman, Wendi (CDC/DDID/OD); Layden, Jennifer (CDC illinois.gov); Layton, Marci (CDC health.nyc.gov); Leslie Chapman; Lindquist, Scott SL (CDC doh.wa.gov); Marelle Fricchione; Meredith Haddix; Molly Lamb; PGounder@ph.lacounty.gov; Rakeman, Jennifer JR (CDC health.nyc.gov); Rose, Laura E. (CDC/DDPHSS/OLSS/OLS); Sarah Park; Black, Stephanie SB (CDC cityofchicago.org); Thomas-Smith, Evonda; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Weiss, Don (CDC health.nyc.gov); Zahn, Matthew
CC: Bresee, Joseph (CDC/DDID/NCIRD/ID)
Subject: updates on sentinel surveillance activities
Attachments: COVID_19 sentinel surveillance deidentified Feb 23 2020.docx

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hello. Some sites requested a guidance document for conducting surveillance using de-identified specimens. A draft is enclosed. As a reminder, **we can start testing de-identified specimens immediately**. We received comments back from FDA on the guidance document for conducting surveillance using identifiable specimens. We are working with them to pursue that approach and **should have more information on the timing of when testing of identifiable specimens can get started tomorrow**.

In the meantime. Can you please provide **an update on when you plan to start shipping specimens** to CDC and **which approach** (using de-identified or identifiable specimens) you plan to use? I will schedule a follow-up call for Tuesday.

Thank you, Gayle

Gayle Langley, MD, MPH, FAAP
Centers for Disease Control and Prevention
Respiratory Viruses Branch
Lead, RSV Epi Team
1600 Clifton Road NE MS H24-5
Atlanta, GA 30333
Telephone: 404-639-8092
Email: fez7@cdc.gov

Guidance for Conducting Sentinel Surveillance Using De-identified Specimens to Detect Signals of Potential Community Transmission of SARS-CoV-2

February 23, 2020

Background

The Centers for Disease Control and Prevention (CDC) and state and local health departments are responding to an outbreak of respiratory disease termed coronavirus disease 2019 (COVID-19) that was first detected in Wuhan City, China in December of 2019. The virus, currently termed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has since spread to many other countries, including the United States. Current strategies for preventing the spread of infection include rapid detection and isolation of cases and tracing and monitoring their close contacts for signs of respiratory illness.

If community transmission of SARS-CoV-2 were occurring in the US, the way to detect it would be to test patients without a known exposure. Because mild disease appears to be common with COVID-19, initial cases reflecting local community transmission are likely to be mild. However, current CDC recommendations for who to test for SARS-CoV-2 in the US rely on a case definition that includes specific clinical (fever and/or signs of lower respiratory tract infection) and exposure criteria (recent travel to China or close contact with a known infected person). Adherence to this definition precludes identification of persons with mild illness who do not have a travel history or exposure to a known case. Detecting community transmission is critical for shaping future response activities including testing criteria, quarantine guidance, investigation protocols, and additional public health preparedness measures. Most critically, cases of COVID-19 identified as part of this surveillance will guide decisions on whether the national public health approach should shift from an aggressive containment strategy (e.g., use of quarantine for all contacts) to one focusing on pandemic preparation and mitigation (e.g., protecting health care workers by employing universal infection control precautions in health care facilities for all cases of fever and respiratory illness, recommending that mildly ill individuals stay home to prevent wider transmission, focusing on prioritizing healthcare resources on those most critically ill and consideration of community mitigation measures such as social distancing).

Objective

Conduct sentinel surveillance using de-identified specimens at select sites to determine if unrecognized community transmission of SARS-CoV-2 is occurring.

Methods

Surveillance populations

To identify evidence of community transmission, we propose setting up sentinel systems in some local United States jurisdictions with early COVID-19 cases or communities with large numbers of travelers from places where transmission is occurring to obtain respiratory specimens for SARS-CoV-2 testing.

Each jurisdiction will identify, deidentify and ship respiratory specimens that had been collected from participants with fever and/or upper or lower respiratory symptoms who presented for clinical care. Some jurisdictions may choose specimens collected from an existing surveillance system for influenza or other respiratory viral diseases, while others use specimens collected specifically for evaluating COVID-19 community transmission.

Each jurisdiction will determine the specimens to be tested using this approach based on the predicted likelihood of detecting SARS-CoV-2. Some considerations for selection include:

Guidance for Conducting Sentinel Surveillance Using De-identified Specimens to Detect Signals of Potential Community Transmission of SARS-CoV-2

February 23, 2020

1. Population served: To increase the likelihood of detecting SARS-CoV-2 if it is circulating in the US, facilities or laboratories serving populations with frequent travel from areas where transmission of SARS-CoV-2 is occurring should ideally be targeted.
2. Healthcare setting: Current clinical criteria for testing includes the presence of lower respiratory tract illness. Outpatient settings offer the opportunity to widen the scope of testing by including persons with milder respiratory infections. Other settings, including emergency department and hospital settings, are also acceptable alternatives since persons meeting the clinical criteria in those settings may not be tested because they do not meet exposure criteria (i.e. travel to China or close contact with a known case).
3. Specimens negative for other respiratory pathogens: Specimens with the highest yield may be those that are negative for influenza and other respiratory pathogens. Identification of an alternative (non-COVID-19) explanation for a person's respiratory illness may make COVID-19 detection in the specimen less likely, with the recognition that co-infections may occur.
4. Age group: While most reported COVID-19 cases have occurred in adults and there have been no cases detected in US children, it is possible that younger populations manifest more mild symptoms that would not be detected under current testing criteria. It is therefore recommended that testing include both children and adults.

Collection, shipping and testing of specimens

~~Acceptable. The most appropriate specimens would be those collected include those obtained from the upper and lower respiratory tract, such as nasal, nasopharyngeal (NP) or oropharyngeal (OP) that are collected using with synthetic fiber swabs with plastic shafts. To maximize the number of persons tested, only one specimen should be collected sent per patient. Specimens collected with cCalcium alginate swabs or swabs with wooden shafts would not be the best specimens should not be used since they contain substances that inactivate some viruses. Place Swabs should have been placed immediately into sterile tubes containing 2-3 ml of viral transport media (VTM). Swabs in their original VTM or aliquots of material from previous testing would be acceptable.~~ Respiratory specimens should be transported in accordance with CDC guidance: <https://www.cdc.gov/coronavirus/2019-nCoV/lab/guidelines-clinical-specimens.html>.

Specimens will need to be labelled so they are distinguished from specimens obtained from persons under investigations (PUIs). ~~The labeling should be such that it would be impossible for them to be linked to an individual person.~~ The labeling convention for this testing will be "SURV-state abbreviation—~~county abbreviation~~-unique number" (e.g. SURV-CA-LAWA-00001).

The respiratory specimens will be tested for SARS-CoV-2 using CDC's 2019-Novel Coronavirus Real-Time Reverse Transcriptase-PCR Diagnostic assay at CDC or at another designated laboratory. ~~Specimens tested at CDC will be batched and results will be sent in aggregate as the number of specimens tested and the number of tests with results that are positive, indeterminate or negative.~~

Specimens being tested at CDC should be shipped to:

Commented [BJ(1): This is written as if prospective. Might rephrase to talk about collection of existing stored specimens collected as part of existing surveillance.

Accept original swabs or aliquots of material from previous testing.

Will need some statement that the specimens should be labelled in a way that makes it impossible to link the result with a person...

Say something about how reports will be returned

**Guidance for Conducting Sentinel Surveillance Using De-identified Specimens to Detect
Signals of Potential Community Transmission of SARS-CoV-2**

February 23, 2020

ATTN: STAT LAB

c/o Steve Lindstrom, Shifaq Kamili (Unit 84)

Respiratory Viruses Diagnostic Laboratory / DVD

Centers for Disease Control and Prevention

1600 Clifton Road, NE

Atlanta, Georgia, 30333

Telephone: 404-639-1587

Please email completed shipping logs to dsrstat@cdc.gov when the shipment is in route.

The table below shows the number of specimens that would need to be tested in order to detect one SARS-CoV-2 infection given the specified community prevalence and level of confidence. The number of specimens tested will depend in part on the availability of test kits. While CDC is doing all testing, we anticipate testing ~50 specimens a week per location.

Prevalence of nCoV to detect	Confidence level	# of specimens needed to test to identify 1 nCoV positive	Approx. # of nCoV kits needed**
0.50%	95%	598	1 kit
1.00%	95%	299	0.5 kit

** Assumes each kit can test 700-800 specimens using a full plate.

Considerations for when current containment strategies may change based on results of sentinel surveillance

The purpose of this surveillance activity is to determine if SARS-CoV-2 virus is circulating in the community. If COVID-19 cases are detected, this information will help inform local and national decisions on measures to limit spread of the virus, including shifting the public health response focus to be more aligned with mitigation of a potential pandemic. A framework for this decision process is being developed by CDC in parallel with this surveillance system, and will be discussed with collaborators before the start of surveillance.

Data collection

Data collected will include county and state where testing occurred, setting where test was done (outpatient clinic, emergency department, hospital), date of specimen collection and result of SARS-CoV-2 testing. These data may be shared with CDC through a secured data transmission pathway.

Human subjects considerations

The activities under this guidance document were determined to be public health surveillance and not considered research by CDC. Individual sites may have different determinations. Persons who test positive will not be identifiable and consent will not be obtained. This approach to using de-identified specimens is being done so that results can be obtained in a timely manner, allowing for critical public health decisions to be made that would be beneficial to the public at large.

Communication plan

**Guidance for Conducting Sentinel Surveillance Using De-identified Specimens to Detect
Signals of Potential Community Transmission of SARS-CoV-2**

February 23, 2020

In preparation for the possibility that additional community cases will be identified through this surveillance activity, CDC and designated jurisdictions are developing a communication plan. It will outline for the public how testing is being conducted, how numbers of positives may translate into unrecognized cases in the communities where testing is being conducted and how containment or mitigation strategies may change as a result of the findings.

From: Stone, Nimalie (CDC/DDID/NCEZID/DHQP)
Sent: Tuesday, March 3, 2020 11:13 AM PST
To: Clark, Thomas A. (CDC/DDID/NCIRD/DVD); Duchin, Jeff
CC: Srinivasan, Arjun (CDC/DDID/NCEZID/DHQP); Jernigan, John A. (CDC/DDID/NCEZID/DHQP); Kallen, Alexander (CDC/DDID/NCEZID/DHQP)
Subject: Fwd: NH reimbursement issue

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Jeff,

I'm forwarding you the email explanation I sent to John that provides my limited understanding of the needs for clarification about what "unable to bill" if federal medical corp are deployed to support services to a nursing home.

Including Arjun Srinivasan who has been talking with CMS HQ leadership about these questions so he can provide additional information if available.

Thanks,

Nimalie

Get [Outlook for iOS](#)

From: Stone, Nimalie (CDC/DDID/NCEZID/DHQP)

Sent: Monday, March 2, 2020 12:33:15 PM

To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>

Subject: NH reimbursement issue

John, here are the questions/concerns with the NH request for federal clinical support staff:

1. The facility is being asked to acknowledge and agree that they will not be billing for "care provided" by the federal clinical staff
 - a. Does that only mean Medicare Part B billing?
 - b. What about Medicare Part A (bundle payment for short-stay residents/per diem), Part D (billing for long-stay resident medications), or Medicaid (long-stay room/board, etc)

If it's only billing for the clinical care provided by the federal providers, then they are fine with that. But if this extends to all the other care including room/board, medications, and the bundled payments for Medicare Part A, then that will create an untenable financial situation for this facility.

Thanks,

Nimalie D. Stone, MD, MS
Team Lead, Long-term Care
Prevention and Response Branch
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
Email: nstone@cdc.gov
Office: 404-639-4757

From: Clark, Thomas A. (CDC/DDID/NCIRD/DVD)
Sent: Monday, March 2, 2020 2:03 PM PST
To: Henry, Erika L (DOH); Onora Lien; Lofy, Kathy KL (CDC doh.wa.gov); Duchin, Jeff; Sakata, Vicki (DOHi); Travis Nichols
CC: Elsenboss, Carina
Subject: RE: Monitoring Impact on Healthcare System

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

I can do 4pm

From: Henry, Erika L (DOH) <erika.henry@doh.wa.gov>
Sent: Monday, March 2, 2020 1:59 PM
To: Lien, Onora (DOHi) <Onora.Lien@NWHRN.org>; Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>; Lofy, Kathy KL (CDC doh.wa.gov) <kathy.lofy@doh.wa.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Sakata, Vicki (DOHi) <Vicki.Sakata@NWHRN.org>; Travis Nichols <tnichols@srhd.org>
Cc: Elsenboss, Carina (DOHi) <Carina.elsenboss@kingcounty.gov>
Subject: RE: Monitoring Impact on Healthcare System

Hi, all –

Thanks for connecting the right people for this conversation.

DOH is hosting a very large call today with external partners that we will need to be on. We can meet 4pm or later. Sorry to throw a wrench in the plan.

We do have a large bank of questions and would want to focus the conversation around the specific data points we think could be most informative, look at where we might be able to source those without an additional info ask to providers, and then decide next steps (method, frequency of ask, etc). I'm sure we're all on the same page, just want to re-iterate the importance of being intentional around any asks.

Thanks for the great partnership! And again, I'm sorry about the 3:00 conflict. Looking forward to discussing more with all of you.

~erika

Erika Henry

Emergency Operations Supervisor
Division of Emergency Preparedness and Response
101 Israel Road SE
Tumwater, WA 98504
erika.henry@doh.wa.gov
360.701.7532 | www.doh.wa.gov



From: Onora Lien [<mailto:onora.lien@nwhrn.org>]
Sent: Monday, March 2, 2020 1:48 PM
To: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>; Lofy, Kathy H (DOH) <Kathy.Lofy@DOH.WA.GOV>; Duchin, Jeffery, MD (DOHi) <jeff.duchin@kingcounty.gov>; Sakata, Vicki (DOHi) <Vicki.Sakata@NWHRN.org>
Cc: Elsenboss, Carina (DOHi) <Carina.elsenboss@kingcounty.gov>; Henry, Erika L (DOH) <erika.henry@doh.wa.gov>
Subject: RE: Monitoring Impact on Healthcare System

Yes on behalf of Northwest Healthcare Response Network

From: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>
Sent: Monday, March 2, 2020 1:46 PM
To: Lofy, Kathy KL (CDC doh.wa.gov) <kathy.lofy@doh.wa.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Onora Lien <onora.lien@nwhrn.org>; Vicki Sakata <vicki.sakata@nwhrn.org>
Cc: Elsenboss, Carina (DOHi) <Carina.elsenboss@kingcounty.gov>; Henry, Erika L (DOH) <erika.henry@doh.wa.gov>
Subject: RE: Monitoring Impact on Healthcare System

Would enough interested parties be able to participate in a quick call today for situational awareness and brainstorming at 3pm? If so, I can send a number.

tom

From: Lofy, Kathy H (DOH) <Kathy.Lofy@DOH.WA.GOV>
Sent: Monday, March 2, 2020 1:43 PM
To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Lien, Onora (DOHi) <Onora.Lien@NWHRN.org>; Sakata, Vicki (DOHi) <Vicki.Sakata@NWHRN.org>
Cc: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>; Elsenboss, Carina (DOHi) <Carina.elsenboss@kingcounty.gov>; Henry, Erika L (DOH) <erika.henry@doh.wa.gov>
Subject: RE: Monitoring Impact on Healthcare System

We have a bank of questions ready to ask about space, staff and stuff.

From: Duchin, Jeff [<mailto:Jeff.Duchin@kingcounty.gov>]
Sent: Monday, March 2, 2020 9:59 AM
To: Lien, Onora (DOHi) <Onora.Lien@NWHRN.org>; Sakata, Vicki (DOHi) <Vicki.Sakata@NWHRN.org>
Cc: Clark, Thomas A. (CDC/CCID/NCIRD) <tnc4@CDC.GOV>; Lofy, Kathy H (DOH) <Kathy.Lofy@DOH.WA.GOV>; Elsenboss, Carina (DOHi) <Carina.elsenboss@kingcounty.gov>
Subject: Monitoring Impact on Healthcare System

Vicki, Onora,

Tom Clark is with CDC and helping us with a variety of COVID-19 response issues. I asked if he might help brainstorm how we can monitor impact on HC system, so I'm connecting him with you as I know this is work in progress.

Thanks much

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Baliga, Christopher
Sent: Monday, March 2, 2020 8:20 PM PST
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
CC: D'Angeli, Marisa (DOH) (Marisa.DAngeli@DOH.WA.GOV); Duchin, Jeff
Subject: RE: Connecting you

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Similar question, but the UW is only running NP swabs, not OP. I can't believe the two really make much difference, but do you know the discordance rate of the NP and OP swabs?

Looping in Marisa at the DoH lab. Any ideas Marisa?

Thanks!

From: Baliga, Christopher
Sent: Monday, March 02, 2020 7:08 PM
To: 'Jernigan, John A. (CDC/DDID/NCEZID/DHQP)' <jqj9@cdc.gov>
Subject: FW: Connecting you

Hi John,

I don't think there is an answer to this question, but

Pts with negative COVID-19 results, either through the CDC, WA DoH, or the University of Washington. How reliable is that? Do we know the false negative rate (or even the false positive?).

If you know great. If not that's ok too.

Thanks,
Chris

Chris Baliga, MD

Infectious Diseases

Medical Director of Infection Prevention and Employee Health



Virginia Mason Hospital & Seattle Medical Center

1100 9th Ave | H7-ID | Seattle, WA 98101

(206) 341-1617 office | (206) 341-0846 clinic | (206) 223-6814 fax

VirginiaMason.org

From: Stone, Nimalie (CDC/DDID/NCEZID/DHQP) [<mailto:ei2@cdc.gov>]
Sent: Monday, March 02, 2020 12:48 PM
To: Baliga, Christopher <Christopher.Baliga@virginiamason.org>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Reddy, Sujan C. (CDC/DDID/NCEZID/DHQP) <kuj0@cdc.gov>
Subject: Connecting you

**** STOP. THINK. External Email ****

Chris,
Here are the email contacts for Sujan Reddy, John Jernigan, and myself.
Thanks,

Nimalie D. Stone, MD, MS
Team Lead, Long-term Care
Prevention and Response Branch
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
Email: nstone@cdc.gov
Office: 404-639-4757

Confidentiality Disclaimer:

The information contained in this e-mail may be confidential. If you received this in error, please call the Virginia Mason Privacy Officer at (206) 223-7505.

Patients: E-mail is not considered secure. By choosing to communicate with Virginia Mason by e-mail, you will assume the risk of a confidentiality breach. Please do not rely on e-mail communication if you or a family member is injured or is experiencing a sudden change in health status.

If you need emergency attention, call 911.

From: Armstrong, Gregory (CDC/DDID/NCEZID/OD)
Sent: Sunday, March 1, 2020 7:45 AM PST
To: Duchin, Jeff
Subject: RE: exposures in hospitals

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Tom Clark is the lead.

John is lead of the Infection Control/Prevention team (which is definitely the biggest part so far).

Here in Atlanta, Ermias Belay I is the POC

Gregory Armstrong, MD | currently assigned to CDC Coronavirus Response as Deputy Incident Manager | garmstrong@cdc.gov

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Sunday, March 1, 2020 10:42 AM
To: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Cc: Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: RE: exposures in hospitals

Thanks. Is John leading the entire field team response.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Sent: Sunday, March 1, 2020 7:27 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>
Subject: RE: exposures in hospitals

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

We will be available when you want to talk – we're in meeting w/ dan and Nancy now, have a follow-up at 11 to 12 est, but can work around to find the support you need. Of course, John and team on ground are going to be best positioned. Best,

satish

*Satish K. Pillai, MD MPH
Deputy Director, Division of Preparedness and Emerging Infections
CDR, U.S. Public Health Service
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention*

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Sunday, March 1, 2020 10:16 AM
To: Bell, Michael MD (CDC/DDID/NCEZID/DHQP) <zzb8@cdc.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>; Armstrong, Gregory (CDC/DDID/NCEZID/OD) <gca3@cdc.gov>; Pillai, Satish K. (CDC/DDID/NCEZID/DPEI) <vig8@cdc.gov>
Cc: Kay, Meagan K. (CDC kingcounty.gov) <meagan.kay@kingcounty.gov>
Subject: Fwd: exposures in hospitals

We are having a very serious challenge related to hospital exposures and impact on the healthcare system. Would be great to have a call to discuss. Will be meeting with your team here this morning and then maybe we can chat after that.

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: John B. Lynch <jblynch@uw.edu>
Sent: Sunday, March 1, 2020 7:09:22 AM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Kay, Meagan <Meagan.Kay@kingcounty.gov>; Kawakami, Vance <Vance.Kawakami@kingcounty.gov>
Subject: exposures in hospitals

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Good morning my friends,

Quick update:

- Large Evergreen exposure (you are well aware)
- Large Valley exposure (pretty sure you are aware). We developed a plan last night, gong to isolate as many HCW as possible, but can't keep ICU open without that exposed pool. So, for the moment, these medium risk individuals are at work and will be conducting 2x daily health screening. More to come today.

- HMC: last night I learned about a death in a pt presenting with sepsis from Life Center Kirkland earlier this week. My assumption is that he had COVID-19. As of 5 minutes ago, I have a symptomatic ICU physician who took care of him. We are working on mitigation today. I suspect that we will not be able to follow current CDC recs for exposed HCWs either. We are going to try to get swabs on the doc now and path is trying to get tissue to test.

As you might imagine, I am very concerned about the hospitals at this point.

Available to discuss anytime if helpful. You have my number.

John

From: Page, Libby Charhon
Sent: Wednesday, March 4, 2020 1:29 PM PST
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP); Suman Paranjape; Pavan Bhatraju
CC: Duchin, Jeff; Craig Smith; Liles, Conrad; Stein, Kate; Craig Smith
Subject: RE: Resource for Community Prevalence Estimate of COVID-19

Please be on the lookout for a Skype meeting invitation from me momentarily.

With thanks,
Libby

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Sent: Wednesday, March 4, 2020 1:29 PM
To: Suman Paranjape <sumip1@gmail.com>; Pavan Bhatraju <bhatraju@uw.edu>
Cc: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>; Craig Smith <CSmith@bloodworksnw.org>; Liles, Conrad <WCLiles@medicine.washington.edu>; Page, Libby Charhon <Libby.Page@kingcounty.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>; Craig Smith <nwmsdoc@cs.com>
Subject: Re: Resource for Community Prevalence Estimate of COVID-19

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

How about 2:00? Could someone set up a conference line?

Get [Outlook for iOS](#)

From: Suman Paranjape <sumip1@gmail.com>
Sent: Wednesday, March 4, 2020 1:18:17 PM
To: Pavan Bhatraju <bhatraju@uw.edu>
Cc: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Craig Smith <CSmith@bloodworksnw.org>; Liles, Conrad <WCLiles@medicine.washington.edu>; Page, Libby Charhon <Libby.Page@kingcounty.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>; Craig Smith <nwmsdoc@cs.com>
Subject: Re: Resource for Community Prevalence Estimate of COVID-19

Hi all,

I can make myself available anytime although 4:15-5:40 PM will be more difficult.

Best,
Sumi

On Wed, Mar 4, 2020 at 12:51 PM Pavan Bhatraju <bhatraju@uw.edu> wrote:

I'm looping in Craig Smith at Bloodworks.

Craig and Sumi please respond all a time that we all could talk.

Get [Outlook for iOS](#)

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Sent: Wednesday, March 4, 2020 12:15:00 PM
To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Pavan Bhatraju <bhatraju@uw.edu>; Craig Smith <CSmith@BloodworksNW.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumip1@gmail.com <sumip1@gmail.com>
Cc: Page, Libby Charhon <Libby.Page@kingcounty.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>
Subject: RE: Resource for Community Prevalence Estimate of COVID-19

Pavan-

Thank you for reaching out! I am leading the infection prevention and control team from CDC here in Seattle. Can we touch base by phone? Cell 404-259-7280

John

John A. Jernigan, MD, MS
Director, Office of Prevention Research and Evaluation
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
1600 Clifton Road, Mailstop A-31
Atlanta, Georgia 30333
Phone 404-639-4245
Fax 404-639-4046

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Wednesday, March 4, 2020 3:03 PM
To: Pavan Bhatraju <bhatraju@uw.edu>; Craig Smith <CSmith@BloodworksNW.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumip1@gmail.com
Cc: Page, Libby Charhon <Libby.Page@kingcounty.gov>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Stein, Kate <Kate.Stein@kingcounty.gov>
Subject: RE: Resource for Community Prevalence Estimate of COVID-19

Pavan,

This is very wonderful news. We desperately need field teams to do testing for people who need testing but not medical care. I'm connecting you with our staff working on developing mobile field strike teams. We have an acute need at LifeWorks and would like to test family members of patients ASAP.

Much obliged - Jeff

Jeffrey S. Duchin, MD

Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section

Public Health - Seattle and King County

Professor in Medicine, Division of Infectious Diseases, University of Washington

Adjunct Professor, School of Public Health

401 5th Ave, Suite 1250, Seattle, WA 98104

Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803

E-mail: jeff.duchin@kingcounty.gov

From: Pavan Bhatraju <bhatraju@uw.edu>

Sent: Wednesday, March 4, 2020 11:51 AM

To: Craig Smith <CSmith@Bloodworksnc.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumip1@gmail.com; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>

Subject: Resource for Community Prevalence Estimate of COVID-19

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Dear All,

Bloodworks NW has reached out and wants to know how they can help. They have mobile bloodworks units, have the capability to swab and collect samples from many people and have the capacity to run COVID-19 assays at Bloodworks.

How can we utilize this resource to understand the prevalence of COVID-19 in the community?

Dr. Duchin, please tell us your thoughts and who we could work with.

Thanks,

Pavan

Pavan Bhatraju, MD MSc

Assistant Professor

Pulmonary, Critical Care and Sleep Medicine

From: Srinivasan, Arjun (CDC/DDID/NCEZID/DHQP)
Sent: Tuesday, March 3, 2020 5:49 PM PST
To: Stone, Nimalie (CDC/DDID/NCEZID/DHQP); Clark, Thomas A. (CDC/DDID/NCIRD/DVD); Duchin, Jeff
CC: Jernigan, John A. (CDC/DDID/NCEZID/DHQP); Kallen, Alexander (CDC/DDID/NCEZID/DHQP)
Subject: RE: NH reimbursement issue

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi-

We raised this with CMS leadership on a call this morning and they are exploring the issues.

Arjun Srinivasan, MD, FSHEA
Captain, USPHS
Associate Director for Healthcare Associated Infection Prevention Programs
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
1600 Clifton Rd, MS H16-3
Atlanta, GA 30333
Phone: 404-639-2303
beu8@cdc.gov

From: Stone, Nimalie (CDC/DDID/NCEZID/DHQP) <ei2@cdc.gov>
Sent: Tuesday, March 3, 2020 2:14 PM
To: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Cc: Srinivasan, Arjun (CDC/DDID/NCEZID/DHQP) <beu8@cdc.gov>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Kallen, Alexander (CDC/DDID/NCEZID/DHQP) <ffp0@cdc.gov>
Subject: Fwd: NH reimbursement issue

Hi Jeff,

I'm forwarding you the email explanation I sent to John that provides my limited understanding of the needs for clarification about what "unable to bill" if federal medical corp are deployed to support services to a nursing home.

Including Arjun Srinivasan who has been talking with CMS HQ leadership about these questions so he can provide additional information if available.

Thanks,
Nimalie

Get [Outlook for iOS](#)

From: Stone, Nimalie (CDC/DDID/NCEZID/DHQP)
Sent: Monday, March 2, 2020 12:33:15 PM

To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>

Subject: NH reimbursement issue

John, here are the questions/concerns with the NH request for federal clinical support staff:

1. The facility is being asked to acknowledge and agree that they will not be billing for “care provided” by the federal clinical staff
 - a. Does that only mean Medicare Part B billing?
 - b. What about Medicare Part A (bundle payment for short-stay residents/per diem), Part D (billing for long-stay resident medications), or Medicaid (long-stay room/board, etc)

If it's only billing for the clinical care provided by the federal providers, then they are fine with that. But if this extends to all the other care including room/board, medications, and the bundled payments for Medicare Part A, then that will create an untenable financial situation for this facility.

Thanks,

Nimalie D. Stone, MD, MS
Team Lead, Long-term Care
Prevention and Response Branch
Division of Healthcare Quality Promotion
Centers for Disease Control and Prevention
Email: nstone@cdc.gov
Office: 404-639-4757

From: Baliga, Christopher
Sent: Wednesday, March 4, 2020 10:07 PM PST
To: Duchin, Jeff; Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
Subject: NP and OP tests and level of exposure

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi you two,

So as we now look to roll out testing to a larger group of people, I wanted to ask what the guidance is on performing NP and OP swabs. I would never have thought of an OP swab as aerosol generating, but I notice Children's has described it as such. CDC guidance just says respiratory diagnostic specimens.

Anyway, couple questions. Recommendations on healthcare workers exposed by doing a NP swab w/o wearing a PAPR. Per my read of the latest and greatest CDC guidance, they are medium risk and furloughed? Would you advise us to not furlough unless symptomatic?

Are these aerosol generating in the sense they stay in the air for 2 hours? Or are they local events that may infect someone during the procedure, but not stay in the air for 2 hours. I am trying to ask how would we do any flu testing when COVID-19 is going around if we need to be doing them in a negative pressure room under airborne precautions?

I have 1 negative pressure room in a clinic in my entire health system (the ID clinic). Otherwise, would send to the two rooms in our ED?

Thanks for your guidance!

Chris

Chris Baliga, MD

Infectious Diseases

Medical Director of Infection Prevention and Employee Health



Virginia Mason Hospital & Seattle Medical Center

1100 9th Ave | H7-ID | Seattle, WA 98101

(206) 341-1617 office | (206) 341-0846 clinic | (206) 223-6814 fax

[VirginiaMason.org](https://www.VirginiaMason.org)

Confidentiality Disclaimer:

The information contained in this e-mail may be confidential. If you received this in error, please call the Virginia Mason Privacy Officer at (206) 223-7505.

Patients: E-mail is not considered secure. By choosing to communicate with Virginia Mason by e-mail, you will assume the risk of a confidentiality breach. Please do not rely on e-mail communication if you or a family member is injured or is experiencing a sudden change in health status.

If you need emergency attention, call 911.

From: Uyeki, Timothy M. (CDC/DDID/NCIRD/ID)
Sent: Tuesday, March 3, 2020 7:32 PM PST
To: Duchin, Jeff
CC: Jernigan, John A. (CDC/DDID/NCEZID/DHQP); Jernigan, Daniel B. (CDC/DDID/NCIRD/ID)
Subject: RE: Approved HIV protease inhibitor may be helpful as preventive and treatment (off label use) for CoVID-19

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks Jeff – very familiar with the clinical articles and lopinavir-ritonavir, waiting for the results of the Chinese trial.

Tim

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Tuesday, March 3, 2020 10:16 PM
To: Uyeki, Timothy M. (CDC/DDID/NCIRD/ID) <tmu0@cdc.gov>
Cc: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Jernigan, Daniel B. (CDC/DDID/NCIRD/ID) <dbj0@cdc.gov>
Subject: FW: Approved HIV protease inhibitor may be helpful as preventive and treatment (off label use) for CoVID-19

FYI

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Rodney J Ho <rodneyho@uw.edu>
Sent: Tuesday, March 3, 2020 5:10 PM
To: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Cc: Lily-Overlake Hwang-Ho <Lily.HwangHo@overlakehospital.org>
Subject: Approved HIV protease inhibitor may be helpful as preventive and treatment (off label use) for CoVID-19

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Dear Dr. Duchin

Thank you for leading the effort in messaging and addressing the CoVID-19 emergence in greater Seattle.

As you know this novel Corona virus is an RNA virus and based on MERS clinical study in 40+ patients, FDA approved HIV protease inhibitor Lopinavir boosted with ritonavir (Kaletra manufactured by Abbot) allowed recovery of patient with good clinical care. See attached Lancet paper. Kaletra is widely available in HIV clinics and could be ordered for wide distribution for healthcare worker as well.

Also, the yet to be approved experimental Remdesivir, which was manufactured and stock-piled by Gilead for Ebola is available to those who request as compassionate use for IV dosage form. This can be requested for access to FDA and shipped within 24 hr to local hospitals.

As a HIV/AIDS researcher leading a group of over 30 physicians and scientist working on developing long-acting injectable HIV drug combination (including lopinavir, ritonavir and tenofovir), I wonder it may be of interest to inform people about some of these experimental and evidence based treatment (Lopinavir/ritonavir or Kaletra) available to provide information for those who may fear the high death rate so-far reported in the news (in those cluster of elderly with underlying health conditions).

It is just my observation and suggestion for your consideration.

Again, appreciate your leadership in getting the words out into the community.

Best wishes

Rodney J. Y. Ho, Ph.D., FAAAS, FAAPS
Professor of Pharmaceutics (SOP) & Bioengineering (SOM)
Presidential Entrepreneurial Faculty Fellow
Executive Director, Center for WE-REACH (Washington Entrepreneurial Research Evaluation and Commercialization Hub)
Director, TLC-ART (Targeted Long-acting Combination Anti-Retroviral Treatment) program
Director of DNA Sequence & Gene analysis Center
Affiliate member of Fred Hutchinson Cancer Research Center
Member, Institute for Translational Health Sciences
Faculty member, Center for AIDS Research
University of Washington
Mailing Address: H272H-UW Health Sciences Complex,
Box 357610, 1959 NE Pacific Street,

Seattle, Washington 98195-7610

Phone: (206) 543-9434 * FAX: (206) 543-3204

Privilege information intended for recipient only.

Utube: <http://www.youtube.com/watch?v=8txO9ncU-Qc>

<http://www.youtube.com/watch?v=bnuB3l8Ajl&feature=relmfu>

Author of the "Biotechnology and Biopharmaceuticals

Transforming Proteins and Genes into Drugs" 2nd Ed

<http://onlinelibrary.wiley.com/book/10.1002/9781118660485>

More about Center for WE-REACH and TLC-ART program follow these links

<https://www.washington.edu/we-reach/>

<http://depts.washington.edu/tlcart/>

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html>

From CDC

"Investigational Therapeutics

There are currently no antiviral drugs licensed by the U.S. Food and Drug Administration (FDA) to treat patients with COVID-19. Some in-vitro or in-vivo studies suggest potential therapeutic activity of compounds against related coronaviruses, but there are no available data from observational studies or randomized controlled trials in humans to support recommending any investigational therapeutics for patients with confirmed or suspected COVID-19 at this time. Remdesivir, an investigational antiviral drug, was reported to have in-vitro activity against SARS-CoV-2. [24] A small number of patients with COVID-19 have received intravenous remdesivir for compassionate use outside of a clinical trial setting. A randomized placebo-controlled clinical trial of remdesivir for treatment of hospitalized patients with pneumonia and COVID-19 has been implemented in China. A randomized open label trial of combination lopinavir-ritonavir treatment has been also been conducted in hospitalized patients with pneumonia and COVID-19 in China, but no results are available to date. Clinical trials of other potential therapeutics for COVID-19 are being planned. For information on specific clinical trials underway for treatment of patients with COVID-19, see clinicaltrials.gov [external icon](#)."

From: Clark, Thomas A. (CDC/DDID/NCIRD/DVD)
Sent: Monday, March 2, 2020 10:09 AM PST
To: Duchin, Jeff; Onora Lien; Vicki Sakata; Chow, Eric (CDC/DDID/NCIRD/ID)
CC: Lofy, Kathy KL (CDC doh.wa.gov); Elsenboss, Carina; Rao, Agam K. (CDC/DDID/NCEZID/DHCPP)
Subject: RE: Monitoring Impact on Healthcare System

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thanks, Jeff. We have Eric Chow from the CDC team working on this. If we can set up a time to talk, that would be great. Maybe I can at least connect Eric with Vicki or Onora to understand your current capacity and thoughts

Tom

Thomas Clark, MD, MPH
Deputy Director
Division of Viral Diseases
National Center for Immunization and Respiratory Diseases
770.488.5229

From: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Sent: Monday, March 2, 2020 9:59 AM
To: Onora Lien <onora.lien@nwhrn.org>; Vicki Sakata <vicki.sakata@nwhrn.org>
Cc: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>; Lofy, Kathy KL (CDC doh.wa.gov) <kathy.lofy@doh.wa.gov>; Elsenboss, Carina <Carina.Elsenboss@kingcounty.gov>
Subject: Monitoring Impact on Healthcare System

Vicki, Onora,

Tom Clark is with CDC and helping us with a variety of COVID-19 response issues. I asked if he might help brainstorm how we can monitor impact on HC system, so I'm connecting him with you as I know this is work in progress.

Thanks much

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803

E-mail: jeff.duchin@kingcounty.gov

From: Belay, Ermias (CDC/DDID/NCEZID/DHCPP)
Sent: Tuesday, March 3, 2020 6:27 PM PST
To: Clark, Thomas A. (CDC/DDID/NCIRD/DVD)
CC: McQuiston, Jennifer H. (CDC/DDID/NCEZID/DHCPP); Duchin, Jeff
Subject: Re: updates

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Thank you

From: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>

Sent: Tuesday, March 3, 2020 9:25:03 PM

To: Belay, Ermias (CDC/DDID/NCEZID/DHCPP) <ebb8@cdc.gov>

Cc: McQuiston, Jennifer H. (CDC/DDID/NCEZID/DHCPP) <fzh7@cdc.gov>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>

Subject: updates

Didn't have time for a short update so folks wrote a long update.

From: Clark, Thomas A. (CDC/DDID/NCIRD/DVD)
Sent: Monday, March 2, 2020 1:46 PM PST
To: Lofy, Kathy KL (CDC doh.wa.gov); Duchin, Jeff; Onora Lien; Sakata, Vicki (DOHi)
CC: Elsenboss, Carina; Henry, Erika L (DOH)
Subject: RE: Monitoring Impact on Healthcare System

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Would enough interested parties be able to participate in a quick call today for situational awareness and brainstorming at 3pm? If so, I can send a number.

tom

From: Lofy, Kathy H (DOH) <Kathy.Lofy@DOH.WA.GOV>
Sent: Monday, March 2, 2020 1:43 PM
To: Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>; Lien, Onora (DOHi) <Onora.Lien@NWHRN.org>; Sakata, Vicki (DOHi) <Vicki.Sakata@NWHRN.org>
Cc: Clark, Thomas A. (CDC/DDID/NCIRD/DVD) <tnc4@cdc.gov>; Elsenboss, Carina (DOHi) <Carina.elsenboss@kingcounty.gov>; Henry, Erika L (DOH) <erika.henry@doh.wa.gov>
Subject: RE: Monitoring Impact on Healthcare System

We have a bank of questions ready to ask about space, staff and stuff.

From: Duchin, Jeff [<mailto:Jeff.Duchin@kingcounty.gov>]
Sent: Monday, March 2, 2020 9:59 AM
To: Lien, Onora (DOHi) <Onora.Lien@NWHRN.org>; Sakata, Vicki (DOHi) <Vicki.Sakata@NWHRN.org>
Cc: Clark, Thomas A. (CDC/CCID/NCIRD) <tnc4@CDC.GOV>; Lofy, Kathy H (DOH) <Kathy.Lofy@DOH.WA.GOV>; Elsenboss, Carina (DOHi) <Carina.elsenboss@kingcounty.gov>
Subject: Monitoring Impact on Healthcare System

Vicki, Onora,

Tom Clark is with CDC and helping us with a variety of COVID-19 response issues. I asked if he might help brainstorm how we can monitor impact on HC system, so I'm connecting him with you as I know this is work in progress.

Thanks much

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health

401 5th Ave, Suite 1250, Seattle, WA 98104

Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803

E-mail: jeff.duchin@kingcounty.gov

From: D'Angeli, Marisa (DOH)
Sent: Tuesday, March 3, 2020 9:11 AM PST
To: Baliga, Christopher; Duchin, Jeff
CC: Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
Subject: RE: Connecting you

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

I can't answer the first question.

I would recommend that if someone tests negative and is very ill and you have a high suspicion then you should retest.

When you ask about retesting, are you testing to get someone out of isolation? If yes, retest as frequently as every 24 hours. If to diagnose, I don't have an answer to that.

Sputum or other respiratory sample in someone with lower respiratory symptoms is the best sample, according to the CDC call we were on on Sunday.

M

From: Baliga, Christopher [mailto:Christopher.Baliga@virginiamason.org]
Sent: Tuesday, March 3, 2020 8:43 AM
To: Duchin, Jeffery, MD (DOH) <jeff.duchin@kingcounty.gov>
Cc: D'Angeli, Marisa (DOH) <Marisa.DAngeli@DOH.WA.GOV>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Subject: Re: Connecting you

Ok, but UW only doing NP. Is a negative NP enough to remove someone from consideration from COVID?

How often should we retest? Follow WHO guidance?

Chris

On Mar 3, 2020, at 7:49 AM, Duchin, Jeff <Jeff.Duchin@kingcounty.gov> wrote:

**** STOP. THINK. External Email ****

That's why NO and OP are recommended. I would not be surprised to see criteria move to one neg but may be different for public (none/1) vs HCP

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: D'Angeli, Marisa (DOH) <Marisa.DAngeli@DOH.WA.GOV>
Sent: Tuesday, March 3, 2020 7:25 AM
To: Baliga, Christopher <Christopher.Baliga@virginiamason.org>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Cc: Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Subject: Re: Connecting you

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hi Chris,

Based on our limited data, it appears that NP is positive more often than OP, but it's not always the case, sometimes the OP is positive when NP negative, may depend on technique too. Reportedly sputum or other lower resp sample is best when people have LRI but we have tested very few sputums.

We are still testing until negative but we hope there will be guidance from CDC that allows ending isolation based on clinical findings. So far it appears that people remain positive for weeks.

I have not heard that there is a published sensitivity and specificity of the test.

It's frustrating not having answers, but there will be more to come.

M

From: Baliga, Christopher <Christopher.Baliga@virginiamason.org>
Sent: Monday, March 2, 2020 10:43:26 PM
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
Cc: D'Angeli, Marisa (DOH); Duchin, Jeffery, MD (DOHi)
Subject: Re: Connecting you

How often are we testing the positive patients? Are we testing till negative anymore?

Chris

On Mar 2, 2020, at 8:35 PM, Baliga, Christopher <Christopher.Baliga@virginiamason.org> wrote:

Fair enough. Marisa, balls in your court.

Thank you!

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) [<mailto:jqj9@cdc.gov>]
Sent: Monday, March 02, 2020 8:34 PM
To: Baliga, Christopher <Christopher.Baliga@virginiamason.org>
Cc: D'Angeli, Marisa (DOH) (Marisa.DAngeli@DOH.WA.GOV) <Marisa.DAngeli@DOH.WA.GOV>;
Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: RE: Connecting you

**** STOP. THINK. External Email ****

Chris-
I might yield to my lab colleagues on this one
JJ

From: Baliga, Christopher <Christopher.Baliga@virginiamason.org>
Sent: Monday, March 2, 2020 11:21 PM
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Cc: D'Angeli, Marisa (DOH) (Marisa.DAngeli@DOH.WA.GOV) <Marisa.DAngeli@DOH.WA.GOV>;
Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: RE: Connecting you

Similar question, but the UW is only running NP swabs, not OP. I can't believe the two really make much difference, but do you know the discordance rate of the NP and OP swabs?

Looping in Marisa at the DoH lab. Any ideas Marisa?

Thanks!

From: Baliga, Christopher
Sent: Monday, March 02, 2020 7:08 PM
To: 'Jernigan, John A. (CDC/DDID/NCEZID/DHQP)' <jqj9@cdc.gov>
Subject: FW: Connecting you

Hi John,

I don't think there is an answer to this question, but

Pts with negative COVID-19 results, either through the CDC, WA DoH, or the University of Washington. How reliable is that? Do we know the false negative rate (or even the false positive?).

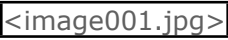
If you know great. If not that's ok too.

Thanks,
Chris

Chris Baliga, MD

Infectious Diseases

Medical Director of Infection Prevention and Employee Health



Virginia Mason Hospital & Seattle Medical Center

1100 9th Ave | H7-ID | Seattle, WA 98101

(206) 341-1617 office | (206) 341-0846 clinic | (206) 223-6814 fax

VirginiaMason.org

From: Stone, Nimalie (CDC/DDID/NCEZID/DHQP) [<mailto:ei2@cdc.gov>]

Sent: Monday, March 02, 2020 12:48 PM

To: Baliga, Christopher <Christopher.Baliga@virginiamason.org>; Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Reddy, Sujana C. (CDC/DDID/NCEZID/DHQP) <kuj0@cdc.gov>

Subject: Connecting you

**** STOP. THINK. External Email ****

Chris,

Here are the email contacts for Sujana Reddy, John Jernigan, and myself.

Thanks,

Nimalie D. Stone, MD, MS

Team Lead, Long-term Care

Prevention and Response Branch

Division of Healthcare Quality Promotion

Centers for Disease Control and Prevention

Email: nstone@cdc.gov

Office: 404-639-4757

Confidentiality Disclaimer:

The information contained in this e-mail may be confidential. If you received this in error, please call the Virginia Mason Privacy Officer at (206) 223-7505.

Patients: E-mail is not considered secure. By choosing to communicate with Virginia Mason by e-mail, you will assume the risk of a confidentiality breach. Please do not

rely on e-mail communication if you or a family member is injured or is experiencing a sudden change in health status.

If you need emergency attention, call 911.

From: Baliga, Christopher
Sent: Monday, March 2, 2020 8:35 PM PST
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP)
CC: D'Angeli, Marisa (DOH) (Marisa.DAngeli@DOH.WA.GOV); Duchin, Jeff
Subject: RE: Connecting you

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Fair enough. Marisa, balls in your court.

Thank you!

From: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) [mailto:jqj9@cdc.gov]
Sent: Monday, March 02, 2020 8:34 PM
To: Baliga, Christopher <Christopher.Baliga@virginiamason.org>
Cc: D'Angeli, Marisa (DOH) (Marisa.DAngeli@DOH.WA.GOV) <Marisa.DAngeli@DOH.WA.GOV>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: RE: Connecting you

**** STOP. THINK. External Email ****

Chris-
I might yield to my lab colleagues on this one
JJ

From: Baliga, Christopher <Christopher.Baliga@virginiamason.org>
Sent: Monday, March 2, 2020 11:21 PM
To: Jernigan, John A. (CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>
Cc: D'Angeli, Marisa (DOH) (Marisa.DAngeli@DOH.WA.GOV) <Marisa.DAngeli@DOH.WA.GOV>; Duchin, Jeff (CDC kingcounty.gov) <jeff.duchin@kingcounty.gov>
Subject: RE: Connecting you

Similar question, but the UW is only running NP swabs, not OP. I can't believe the two really make much difference, but do you know the discordance rate of the NP and OP swabs?

Looping in Marisa at the DoH lab. Any ideas Marisa?

Thanks!

From: Baliga, Christopher
Sent: Monday, March 02, 2020 7:08 PM
To: 'Jernigan, John A. (CDC/DDID/NCEZID/DHQP)' <jqj9@cdc.gov>
Subject: FW: Connecting you

Hi John,

I don't think there is an answer to this question, but

Pts with negative COVID-19 results, either through the CDC, WA DoH, or the University of Washington. How reliable is that? Do we know the false negative rate (or even the false positive?).

If you know great. If not that's ok too.

Thanks,
Chris

Chris Baliga, MD

Infectious Diseases

Medical Director of Infection Prevention and Employee Health



Virginia Mason Hospital & Seattle Medical Center

1100 9th Ave | H7-ID | Seattle, WA 98101

(206) 341-1617 office | (206) 341-0846 clinic | (206) 223-6814 fax

VirginiaMason.org

From: Stone, Nimalie (CDC/DDID/NCEZID/DHQP) [<mailto:ei2@cdc.gov>]

Sent: Monday, March 02, 2020 12:48 PM

To: Baliga, Christopher <Christopher.Baliga@virginiamason.org>; Jernigan, John A.

(CDC/DDID/NCEZID/DHQP) <jqj9@cdc.gov>; Reddy, Sujana C. (CDC/DDID/NCEZID/DHQP) <kuj0@cdc.gov>

Subject: Connecting you

**** STOP. THINK. External Email ****

Chris,

Here are the email contacts for Sujana Reddy, John Jernigan, and myself.

Thanks,

Nimalie D. Stone, MD, MS

Team Lead, Long-term Care

Prevention and Response Branch

Division of Healthcare Quality Promotion

Centers for Disease Control and Prevention

Email: nstone@cdc.gov

Office: 404-639-4757

Confidentiality Disclaimer:

The information contained in this e-mail may be confidential. If you received this in error, please call the Virginia Mason Privacy Officer at (206) 223-7505.

Patients: E-mail is not considered secure. By choosing to communicate with Virginia Mason by e-mail, you will assume the risk of a confidentiality breach. Please do not rely on e-mail communication if you or a family member is injured or is experiencing a sudden change in health status.

If you need emergency attention, call 911.

From: Lofy, Kathy H (DOH)
Sent: Wednesday, March 4, 2020 10:54 AM PST
To: Lindquist, Scott W (DOH); Clark, Thomas A. (CDC/DDID/NCIRD/DVD); Hensley, Joni L (DOH)
CC: Duchin, Jeff
Subject: Advice for people with sx c/w COVID but no known exposure
Attachments: What to do if you have F C and no exposure_needs formatting.docx

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Can you please review this document?

We now have three documents:

- Advice for confirmed and probable cases
- Advice for contacts of confirmed cases
- Advice for people with symptoms of COVID-19 but no known exposure (attached)

Kathy Lofy, MD

Gender Pronouns: she/her_

State Health Officer

Office of the Secretary

Washington State Department of Health

kathy.lofy@doh.wa.gov

360-236-4030 | www.doh.wa.gov



What to do if you have symptoms of coronavirus disease 2019 (COVID-19) and have not been around anyone who has been diagnosed with COVID-19

If you have a fever, cough or shortness of breath but have not been around anyone you know has COVID-19, follow the steps below to help prevent your infection from spreading to people in your home and community.

Could I have COVID-19?

The most common symptoms of COVID-19 are fever, cough and shortness of breath. If you have a fever, cough or shortness of breath but have not been around anyone who you know has COVID-19, the likelihood that you have COVID-19 is fairly low. COVID-19 is circulating in some communities in Washington but several other respiratory viruses are circulating in Washington as well.

Should I go to my doctor and get tested for COVID-19?

If you have any of the conditions that may increase your risk for a serious viral infections—age 60 years or over, are pregnant, or have medical conditions—call your physician’s office and ask if you need to be evaluated in person. They may want monitor your health more closely or test you for influenza.

If you do not have a high-risk condition and your symptoms are mild, you do not need to be evaluated in person and do not need to be tested for COVID-19. There are currently no medications to treat COVID-19.

What should I do to keep my infection from spreading to my family and other people in the community?

Stay home except to get medical care

You should restrict activities outside your home, except for getting medical care. Do not go to work, school, or public areas. Avoid using public transportation, ride-sharing, or taxis.

Separate yourself from other people and animals in your home.

People: As much as possible, you should stay in a specific room and away from other people in your home. Also, you should use a separate bathroom, if available.

Animals: Do not handle pets or other animals while sick. See COVID-19 and Animals for more information.

Call ahead before visiting your doctor

If you have a medical appointment, call the healthcare provider and tell them that you have symptoms that are consistent with COVID-19. This will help the healthcare provider’s office take steps to keep other people from getting infected or exposed.

Wear a facemask

You should wear a facemask when you are around other people (e.g., sharing a room or vehicle) or pets and before you enter a healthcare provider's office. If you are not able to wear a facemask (for example, because it causes trouble breathing), then people who live with you should not be in the same room with you, or they should wear a facemask if they enter your room.

Cover your coughs and sneezes

Cover your mouth and nose with a tissue when you cough or sneeze. Throw used tissues in a lined trash can; immediately wash your hands with soap and water for at least 20 seconds or clean your hands with an alcohol-based hand sanitizer that contains at least 60 to 95% alcohol, covering all surfaces of your hands and rubbing them together until they feel dry. Soap and water should be used preferentially if hands are visibly dirty.

Avoid sharing personal household items

You should not share dishes, drinking glasses, cups, eating utensils, towels, or bedding with other people or pets in your home. After using these items, they should be washed thoroughly with soap and water.

Clean your hands often

Wash your hands often with soap and water for at least 20 seconds. If soap and water are not available, clean your hands with an alcohol-based hand sanitizer that contains at least 60% alcohol, covering all surfaces of your hands and rubbing them together until they feel dry. Soap and water should be used preferentially if hands are visibly dirty. Avoid touching your eyes, nose, and mouth with unwashed hands.

Clean all "high-touch" surfaces every day

High touch surfaces include counters, tabletops, doorknobs, bathroom fixtures, toilets, phones, keyboards, tablets, and bedside tables. Also, clean any surfaces that may have blood, stool, or body fluids on them. Use a household cleaning spray or wipe, according to the label instructions. Labels contain instructions for safe and effective use of the cleaning product including precautions you should take when applying the product, such as wearing gloves and making sure you have good ventilation during use of the product.

Monitor your symptoms

Seek prompt medical attention if your illness is worsening (e.g., difficulty breathing). Before seeking care, call your healthcare provider and tell them that your symptoms are consistent with COVID-19. Put on a facemask before you enter the facility. These steps will help the healthcare provider's office to keep other people in the office or waiting room from getting your infection.

If you have a medical emergency and need to call 911, notify the dispatch personnel that you have symptoms consistent with COVID-19. If possible, put on a facemask before emergency medical services arrive.

Discontinuing home isolation

If you have fever, cough or shortness of breath and have not been around anyone who has been diagnosed with COVID-19, you should stay home away from others until 72 hours after resolution of fever and improvement of symptoms.

From: Duchin, Jeff
Sent: Tuesday, March 3, 2020 4:25 PM PST
To: Dan Jernigan (dbj0@cdc.gov)
CC: Kathy Lofy (Kathy.Lofy@DOH.WA.GOV); Jernigan, John A.
Subject: RE: Request for Flexibility in PPE and IC Guidance for HCW
Attachments: COVID-19 infection prevention in healthcare setting 3.2.2020_UW_NWHRN_KP.pdf

Dan, I'm sending an updated copy of the letter from our healthcare system partners requesting flexibility in the infection control/PPE guidance. Kaiser Permanente Washington has also asked to be included in the request. UW is asking if there is any timeline for a response from CDC and is planning to make this change imminently.

Thanks for your help - Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Duchin, Jeff
Sent: Tuesday, March 3, 2020 7:30 AM
To: Dan Jernigan (dbj0@cdc.gov) <dbj0@cdc.gov>
Cc: Kathy Lofy (Kathy.Lofy@DOH.WA.GOV) <kathy.lofy@doh.wa.gov>; Jernigan, John A. <jqj9@cdc.gov>
Subject: Request for Flexibility in PPE and IC Guidance for HCW

Dear Dan,

On behalf of Dr. Kathy Lofy, Health Officer, Washington State Department of Health and myself, please see the attached letter from our main front line acute care hospital system responding to the COVID-19 outbreak in King County, Washington. Even the relatively limited number of cases at this time, the hospitals are feeling they cannot comply with the requirement for respirator use for the care of suspected and confirmed COVID-19 cases due to supply constraints which are expected to worsen. In addition, the recommendation to furlough asymptomatic HCW exposed to COVID-19 cases would require them to curtail critical care services.

UW Medicine consists of University of Washington Medical Center, Harborview Medical Center, and Valley Medical Center with Harborview Medical Center serving as the King County Disaster Control Hospital and designated Ebola Treatment Facility. UW Medicine admits more than 63,000 patients per year and provides outpatient care for more than 1.3 million patients each year at its 14 UW Neighborhood Clinics and its many other primary and specialty care clinics. Seattle Cancer Care Alliance is a collaborative partnership of UW Medicine, Fred Hutchinson Cancer Research Center, and Seattle Children's Hospital.

The Northwest Healthcare Response Network is our regional healthcare coalition comprised of 70% of the state's hospital beds, nearly 3,000 healthcare organizations and 178,000 healthcare workers and is a key partner with Public Health in coordinating and implementing public health and healthcare system emergency response activities.

Our healthcare system colleagues are committed to providing the highest level of care and safety for both patients and healthcare providers and feel that guidance reflecting real world conditions would be more conducive that goal than guidance that is not possible to comply with.

Thank you for your consideration of this request for flexibility in this critical guidance.

Sincerely,

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Lofy, Kathy H (DOH)
Sent: Tuesday, March 3, 2020 10:14 PM PST
To: Duchin, Jeff; Lindquist, Scott W (DOH); Clark, Thomas A. (CDC/DDID/NCIRD/DVD)
Subject: FW: COVID-19 - Hospital environmental samples - positive for virus
Attachments: 2020-Jiang-Clinical data on hospital environmental hygiene monitoring an....pdf

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

In regards to Tim's letter, I am wondering if ICU providers should all wear N95s. K

From: Simckes, Maayan S (DOH)
Sent: Tuesday, March 3, 2020 1:06 PM
To: Lofy, Kathy H (DOH) <Kathy.Lofy@DOH.WA.GOV>; Lindquist, Scott W (DOH) <scott.lindquist@doh.wa.gov>; Podczervinski, Sara T (DOH) <sara.podczervinski@doh.wa.gov>; Montgomery, Patricia A (DOH) <patricia.montgomery@doh.wa.gov>; Peterson Gutierrez, Rachel (DSHS/OFR) <peterrk@dshs.wa.gov>; Peterson, Kristin I (DOH) <Kristin.Peterson@DOH.WA.GOV>; Pecha, Monica J (DOH) <monica.pecha@doh.wa.gov>; Pecha, Monica J (DOH) <monica.pecha@doh.wa.gov>
Cc: Wasserman, Cathy (DOH) <Cathy.Wasserman@DOH.WA.GOV>
Subject: COVID-19 - Hospital environmental samples - positive for virus

Hi folks,

Attached is a pre-print article on an environmental hygiene study at a Chinese hospital. Air and surface samples both came back positive for SARS-CoV-2. We thought it would be good to call attention to the paper. Please let us know if you have any questions.

Cheers,
Maayan

Clinical Data on Hospital Environmental Hygiene Monitoring and Medical Staff Protection during the Coronavirus Disease 2019 Outbreak

Yanfang Jiang^{1*}, Haifeng Wang^{1*}, Yukun Chen², Jiaxue He¹, Liguang Chen¹, Yong Liu¹, Xinyuan Hu¹, Ang Li¹, Siwen Liu¹, Peng Zhang¹, Hongyan Zou¹, Shucheng Hua^{1,3 #}

1. Key Laboratory of Organ Regeneration & Transplantation of the Ministry of Education, Genetic Diagnosis Center, The First Hospital of Jilin University, Changchun, China

2. Hospital-Acquired Infection Control Department, The First Hospital of Jilin University, Changchun, China

3. Department of Respiratory Medicine, The First Hospital of Jilin University, Jilin University, Changchun, Jilin, China

Corresponding Author: Shucheng Hua, Department of Respiratory Medicine, The First Hospital of Jilin University, Jilin University, Changchun, Jilin, China

E-mail address: huashucheng2020@163.com

* Yanfang Jiang and Haifeng Wang made equal contributions to this study.

24 Yanfang Jiang yanfangjiang@hotmail.com

25 Haifeng Wang wanghaifeng1994@163.com

26 Yukun Chen cyk0503@qq.com

27 Jiaxue He jiaxue-he@163.com

28 Ligu Chen 123043714@qq.com

29 Yong Liu 530440980@qq.com

30 Xinyuan Hu 1586878478@qq.com

31 Ang Li li987001500@qq.com

32 Siwen Liu 530229652@qq.com

33 Peng Zhang 123126672@qq.com

34 Hongyan Zou 2361044502@qq.com

35

36

37

38

39

40

41

42

43

44

45

46 Abstract

47 **Background:** The outbreak of coronavirus disease 2019 (COVID-19) has placed
48 unprecedented challenges on hospital environmental hygiene and medical staff
49 protection. It is crucial to assess hospital environmental hygiene to understand the
50 most important environmental issues for controlling the spread of COVID-19 in
51 hospitals.

52 **Objective:** To detect the presence of COVID-19 in the samples from the area at risk
53 of contamination in the First Hospital of Jilin University.

54 **Methods:** Viruses in the air were collected by natural sedimentation and air particle
55 sampler methods. Predetermined environmental surfaces were sampled using swabs at
56 seven o'clock in the morning before disinfection. The real-time reverse-transcription
57 PCR method was used to detect the existence of COVID-19 pathogens.

58 **Results:** Viruses could be detected on the surfaces of the nurse station in the isolation
59 area with suspected patients and in the air of the isolation ward with an intensive care
60 patient.

61 **Conclusion:** Comprehensive monitoring of hospital environmental hygiene during
62 pandemic outbreaks is conducive to the refinement of hospital infection control. It is
63 of great significance to ensure the safety of medical treatment and the quality of
64 hospital infection control through the monitoring of environmental hygiene.

65 **Key words** COVID-19; hospital environmental hygiene; hospital-associated infection,
66 medical staff protection

67

68 1.Introduction

69 The outbreak of COVID-19 in Wuhan in December 2019 has led to a serious public
70 health event ^[1-3]. Meanwhile, the outbreak of this novel virus has placed
71 unprecedented challenges on hospital environmental hygiene. The occurrence of
72 medical staff-associated infections is closely related to long-lived pathogens in the
73 hospital environment ^[4,5]. Thus, it is crucial to assess hospital environmental hygiene
74 to understand the most important environmental issues for controlling the spread of
75 COVID-19 in hospitals. The Chinese government quickly adopted quarantine
76 measures for confirmed and suspected patients to restrain the spread of the
77 pandemic^[6]. Comprehensive monitoring of hospital environmental hygiene during the
78 outbreak of the pandemic is conducive to the refinement of hospital infection control
79 ^[5,7]. It also increases understanding of the environmental challenges corresponding to
80 the reemergence of COVID-19 or similar viruses. Therefore, it is of great significance
81 to ensure the safety of medical treatment and the quality of hospital infection control
82 through the monitoring of environmental hygiene. According to a report from the
83 China Centers for Disease Control and Prevention, as of February 11, 3019 medical
84 staff members were infected with the new coronavirus (including confirmed cases,
85 suspected cases, clinically diagnosed cases, and asymptomatic infections, of which
86 1716 were confirmed cases), indicating that infection through no occupational
87 exposure may occur ^[8], but more evidence is needed to support this hypothesis.
88 Meanwhile, it is extremely important to ensure the safety of medical treatments and
89 the quality of hospital infection control by monitoring hospital environmental hygiene.

However, sensitive and effective methods for monitoring hospital-acquired infection control are still limited. Here, by monitoring COVID-19 and detecting nucleic acid, we reveal clinical data indicating hospital environmental hygiene levels and provide a way to monitor pathogenic microorganism contamination and nosocomial infections.

2.Methods

2.1 Participant Characteristics

Fifteen suspected patients and one confirmed intensive care patient (ORF1ab and N were positive according to RT-PCR) were hospitalized in two isolation areas at the First Hospital of Jilin University, a unit for COVID-19 detection. The hospital carries out district management for these two types of patients, and each area includes a nursing station. We detected 158 samples of COVID-19 from the area at risk of contamination. This study was approved by the Ethics Committee of the First Hospital of Jilin University (Changchun, China).

Table 1: Collection of 158 samples from the area at risk of contamination

Risk level	Classification	Sample collection points	
High-risk area	CONTAMINATED AREA	Isolation ward area 1 (2F)	Isolation wards 1-15 door handle
			Isolation wards 1-15 general subject surface
			Isolation wards 1-15 indoor air
			Isolation wards 1-15 window frames
			Isolation wards 1-15 sides of a toilet handle
			Nurse station general subject surface
			Nurse station indoor air
			Corridor exit general subject surface
			General subject surface of the refuse storage area near the nurse station
		Isolation ward area 2 (B1)	Isolation ward 16 door handle
			Isolation ward 16 general subject surface
			Isolation ward 16 indoor air
			Isolation ward 16 window frames

			Isolation ward 16 sides of a toilet handle
			Nurse station indoor air
		Fever clinic 2 consulting rooms	Door handle (inside and outside)
			General subject surface
			Indoor air
			Computer keyboard
		Fever clinic observation room	Door handle (inside and outside)
			General subject surface
			Indoor air
			Computer keyboard
		Fever clinic laboratory	Door handle (inside and outside)
			General subject surface
			Indoor air
			Computer keyboard
		Fever clinic blood collection room	General subject surface
			Indoor air
Medium-risk area	SEMICONTAMINATED AREA	Isolation ward area buffer room	Door handle
			General subject surface
			Indoor air
			Doctor's office window frames
			Refuse storage area wall surface
			Disinfection bucket surface
			Dressing room ground
			Medical staff of infection department protective clothing
		Pre-check triages	General subject surface
			Infrared thermometer
Low-risk area	CLEAN AREA	Isolation ward area working area	Entrance corridor general subject surface
			Indoor air
			Entrance corridor window frames
			Physician's office door handle
			Physician's office general subject surface
			Director's office door handle
			Door handle

104

105 2.2 Sampling and Sample Processing

106 The environmental monitoring methods referenced the hospital sanitation standards

107 (GB15982-2012). All air was collected by two methods: natural sedimentation^[9] and

a microbial air sampler (MAS-100 ECO), for which the stream of air was set to exactly 100 liters/minute (Merck, Germany) ^[10]. Environmental surfaces were sampled using swabs.

2.3 Primer and Probe Sequences

Two sequence regions (ORF1ab and N) that are highly conserved among sarbecoviruses were selected for primer and probe design. The primer and probe sequences for the ORF1ab gene assay were 5'-TGGGGYTTTACRGGTAACCT-3' (forward; Y = C/T, R = A/G), 5'-AACRCGCTTAACAAAGCACTC-3' (reverse; R = A/G) and 5'-TAGTTGTGATGCWATCATGACTAG-3' (probe, in 5'-FAM/ZEN/3'-IBFQ format; W = A/T), and the primer and probe sequences for the N gene assay were 5'-TAATCAGACAAGGAACTGATTA-3' (forward), 5'-CGAAGGTGTGACTTCCATG-3' (reverse) and 5'-GCAAATTGTGCAATTTGCGG-3' (probe, in 5'-FAM/ZEN/3'-IBFQ format). The expected amplicon sizes of the ORF1ab and N gene assays were 132 bp and 110 bp, respectively^[11]. All primers and probes were purchased from a commercial source (Integrated DNA Technologies). The primer and probe sequences were subsequently confirmed to have perfect matches with other COVID-19 genome sequences available from the Global Initiative on Sharing All Influenza Data (GISAID; <https://www.gisaid.org/>; accession numbers: EPI_ISL_402119, EPI_ISL_402120, EPI_ISL_402121, EPI_ISL_402123 and EPI_ISL_402124; accessed 12 January 2020).

2.4 RNA Extraction

All the collected samples were inactivated by heating at 56 °C for 30 minutes. For RNA extraction from 600 µL of 0.9% NaCl solution in a 2.0 mL tube, the samples

were centrifuged at 12000 g for 10 min and incubated for 30 min, the supernatant was discarded, 50 μ L of RNA release agent was added to the tube, and the sample was mixed and incubated for 10 min.

2.5 Real-time Reverse-Transcription PCR

A 50- μ L reaction contained 20 μ L of RNA and 30 μ L of 1 $\times$ reaction buffer consisting of 26 μ L of COVID-19 PCR mix (containing primers (4.62%), probes (1.15%), dNTPs (3.85%), MgCl₂ (0.77%), RNasin (0.48%), and PCR buffer (89.13%) (Shengxiang, Hunan, China)) and 4 μ L each of COVID-19 PCR enzyme mix (containing RT enzyme (62.5%) and Taq enzyme (37.5%) (Shengxiang, Hunan, China)). Thermal cycling was performed at 50 °C for 30 min for reverse transcription, followed by 95 °C for 1 min and then 45 cycles of 95 °C for 15 s and 60 °C for 30 s. Participating laboratories used a Hongshi SLAN 96 S instrument (Hongshi, Shanghai, China). A sample was considered positive when the qPCR Ct value was ≤ 40 .

3. Results

A total of 158 samples were collected from the area at risk of contamination. The two positive areas were the surfaces of the nurse station in the isolation area with suspected patients and the air of the isolation ward with an intensive care patient (Tables 2 and 3). We found that the virus was present both on surfaces and in the air. The total positive rate was 1.26% (2/158). The positive rates of the air and surface samples were 3.57% (1/28) and 0.77% (1/130), respectively.

Table 2: Air monitoring results for the different risk areas

Type		Negative	Positive	Positive rate
High-risk area	Isolation ward	19	1	5%
	Fever clinic consulting rooms	2		
	Fever clinic observation room	1		
	Fever clinic laboratory	1		
	Fever clinic blood collection room	1		
Middle-risk area	Isolation ward nurse station	1	0	0
	Isolation ward buffer room	1	0	0
Low-risk area	Isolation ward clean area	1	0	0
Total		27	1	3.57%

Table 3: Surface monitoring results for the different risk areas

Type		Negative	Positive	Positive rate
High-risk area	Isolation ward door handle, general surface	51	0	0%
	Isolation ward toilet handle	6	0	0
	Fever clinic consulting rooms	3	0	0
	Fever clinic observation room	3	0	0
	Fever clinic laboratory	6	0	0
	Fever clinic blood collection room	16	0	0
	Protective clothing for medical staff in the infection department	1	0	0
Middle-risk area	Pre-check triages	11	0	0
	Isolation ward nurse station (keyboard)	5	1	16.67%
	Isolation ward buffer room	3	0	0
Low-risk area	Isolation ward clean area	12	0	0
	Clean area keyboards	9	0	
Total		129	1	0.77%

Based on the original 24 hours of ultraviolet air filtering and 1000-2000 mg/L chlorine-containing disinfectant for ambient air and floor disinfection, the frequencies and duration times of air disinfections were extended. Key surfaces such as computer keyboards that were easily overlooked were clearly noted and carefully disinfected. The samples from the positive area and indoor air were collected 24 hours later, and the test results were negative.

4. Discussion

Our positive results in nucleic acid tests indicated that viruses were present in the air of an isolation ward with intensive care patients. The hermetic spaces of isolation wards are weak in air flow, which may cause high contact with the virus. Additionally, the confirmed patient underwent tracheal intubation the day before the samples were collected, and this procedure produced large amounts of aerosols that spread in the wards and seriously polluted the air. Siegel et al. reported that medical ventilators might generate respiratory aerosols that have been associated with an increased risk of occupationally acquired infections among healthcare personnel ^[12]. Therefore, it is necessary to increase the intensity of disinfection for isolation wards with intensive care patients. For example, we should enhance ventilator exhaust management by adding ventilator exhaust port filters.

The suspected and confirmed patients stay a relatively long time in the high-risk area and may influence the environment. The intrusive and other operations that can easily produce aerosols may cause serious air pollution. The sites under observation without patients and operations have less impact on the environment. The samples from the same collection points were tested after a series of infection prevention and control measures were taken, such as continuous use of an air disinfection machine for the disinfection of ward air; extending the frequency of disinfection for ground and object surfaces; changing gloves and cleaning hands after operations and leaving the ward; and covering computer keyboards and changing the cover each day. Following the implementation of these measures, the results were negative, showing the

effectiveness of disinfection. In the high-risk areas, such as hospital pre-check triages and the fever clinic, due to the open environment and large amount of air flow, the results were negative.

The previous research reports that the routine cleaning and disinfection procedures are the most likely cause of the deficiency of disinfection in the hospital environment, leading to the spread of pathogens^[13]. In our study, viruses were detected on the surfaces of the nurse station in the isolation area with suspected patients, suggesting that we need to strengthen the surface disinfection of nurse stations, especially focusing on computer keyboards, mice and types of equipment that are not easy to disinfect. A large number of studies have shown that the hands or gloves of medical staff members may be contaminated by contact with environmental surfaces contaminated by pathogens^[13-15]. In the process of diagnosis and treatment, pathogens may be transmitted to patients and cause hospital-associated infections. Therefore, it is also very important to further strengthen the hand hygiene of the medical staff.

We need to formulate refinement measures based on environmental hygiene monitoring data to improve the quality of hospital infection control. Due to fact that “uncultivable” microbes widely exist, traditional methods used to measure the effect of hospital infection control, such as sedimentation (exposing a microbial growth plate to the environment) have shown limited effects and poor sensitivity. For laboratories and testing organizations, high concentrations of nucleic acid may exist in aerosols, which may influence the test results and the operator’s safety and may even cause spread of the disease. Nucleic acid detection provides an effective method with

which to monitor the environment and to evaluate the effectiveness of disinfection, especially for highly contagious diseases or pathogenic microorganisms with a potential aerosol risk, such as COVID-19. These nucleic acid detection results are very important for standardized hospital infection control. This study also increases our understanding of the environmental challenges corresponding to the reemergence of COVID-19 or similar viruses.

The data obtained in this study suggest that COVID-19 exists in the air of isolation wards with intensive care patients and existed on the surfaces of nurse stations and that medical staff encounter this virus in the air and on surfaces during patient care activities. An effective disinfection procedure may reduce the biosafety risk.

For hospital infection control, we suggest:

1. Different people should be responsible for the isolation observation area and the isolation ward area; crossing the areas should be strictly prohibited.
2. Objects in each area should be used exclusively; equipment that must be used for special purposes should be sterilized before being used in other areas.
3. Hand hygiene rules should be observed strictly, thoroughly and at all times.
4. Additional gloves, disposable isolators, protective screens or hoods should be worn when an operation may cause the spattering of blood, bodily fluid or aerosol, and these items should be discarded immediately to avoid the pollution of other areas.

227 Acknowledgments

228 This work was supported by the National Natural Science Foundation of China (Nos.
229 30972610 and 81273240), the Jilin Province Science and Technology Agency (Nos.
230 20160101037JC, 20170622009JC, 2017C021, and 2017J039), the Norman Bethune
231 Program of Jilin University (2012206), and Open Project Funding From the State Key
232 Laboratory of Kidney Diseases. We thank the patients and their families for
233 participating in this study. We would also like to acknowledge the professional
234 manuscript services of American Journal Experts.

235 Disclosure Statement

236 The authors have no conflicts of interest to declare.

237

238

239

240

241

242

243

244

245

246

247

248

References

1. Benvenuto, D., et al., The global spread of 2019-nCoV: a molecular evolutionary analysis. *Pathog Glob Health*. 2020, 12: 1-4.
2. Huang, C., et al., Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020, 395(10223): 497-506.
3. The, L., Emerging understandings of 2019-nCoV. *Lancet*. 2020, 395(10221): 311.
4. Anderson, D.J., et al., Enhanced terminal room disinfection and acquisition and infection caused by multidrug-resistant organisms and *Clostridium difficile* (the Benefits of Enhanced Terminal Room Disinfection study): a cluster-randomised, multicentre, crossover study. *Lancet*. 2017, 389(10071): 805-814.
5. Beggs, C., et al., Environmental contamination and hospital-acquired infection: factors that are easily overlooked. *Indoor air*. 2015, 25(5): 462-74.
6. Wang, D., et al., Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China. *JAMA*. 2020.
7. Phan, L.T., et al., Respiratory viruses in the patient environment. *Infect Control Hosp Epidemiol*. 2020, 41(3):259-266.
8. Chinese Center for Disease Control and Prevention, Beijing 102206, China. Epidemiology group of new coronavirus pneumonia emergency response mechanism, Chinese center for disease control and prevention, The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19) in China, *Zhonghua Liu Xing Bing Xue Za Zhi*. 2020, 41(2):145-151.

- 271 9. Odebode A, et al., Airborne fungi spores distribution in various locations in Lagos,
272 Nigeria. Environ Monit Assess. 2020, 192(2):87.
- 273 10. Irie K, et al., Investigation of the detection ability of an intrinsic
274 fluorescence-based bioaerosol detection system for heat-stressed bacteria. PDA
275 J Pharm Sci Technol. 2014, 68(5):478-93
- 276 11. Chu DKW, et al., Molecular Diagnosis of a Novel Coronavirus (2019-nCoV)
277 Causing an Outbreak of Pneumonia. Clin Chem. 2020, pii: hvaa029. doi:
278 10.1093/clinchem/hvaa029.
- 279 12. Siegel, J.D., et al., 2007 Guideline for Isolation Precautions: Preventing
280 Transmission of Infectious Agents in Health Care Settings. Am J Infect Control.
281 2007, 35(10 Suppl 2): S65-164.
- 282 13. Pirincci, E. and B. Altun, An analysis of hospital cleaning staff's attitudes and
283 conduct regarding hand hygiene and cleaning. Int J Occup Saf Ergon. 2016, 22(2):
284 241-5.
- 285 14. Pittet, D., et al., Evidence-based model for hand transmission during patient care
286 and the role of improved practices. Lancet Infect Dis. 2006, 6(10): 641-52.
- 287 15. Christensen, T.E., J.S. Jorgensen, and H.J. Kolmos, [The importance of hygiene for
288 hospital infections]. Ugeskr Laeger. 2007, 169(49): 4249-51

March 2, 2020

Kathy Lofy, MD
State Health Officer
Washington State Department of Health

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Diseases Epidemiology & Immunization Section
Public Health – Seattle and King County

Dear Drs. Lofy and Duchin,

We write to request your support in changing the Interim Infection Prevention and Control Recommendations for Patients with suspected or confirmed Coronavirus Disease 2019 (COVID-19) to Standard, Droplet, and Contact Precautions to include the use of masks, eye protection, gown, and gloves while using airborne precautions with use of respirators when performing aerosol-generating procedures as recommended by the World Health Organization, Infection Prevention and Control Canada, and other countries.

COVID-19 is transmitted person to person through respiratory droplets created when individuals cough or sneeze similar to other respiratory viruses. Recent community cases of COVID-19 have not had relevant travel history nor known contact with an individual with confirmed COVID-19. Given the presence of local community transmission of COVID-19 and continued transmission of other respiratory viruses such as influenza, it is difficult to clinically identify individuals with potential COVID-19 from an individual without COVID-19 when they present with fever and respiratory symptoms.

Given the lack of airborne isolation rooms in clinics and the limited number of airborne isolation rooms in hospitals combined with shortages in personal protective equipment (PPE), we cannot manage the increasing numbers of patients presenting with possible COVID-19 and are creating more risk for our healthcare workers given the complexities of the current CDC recommendations. It will be safer for our healthcare workers to consistently use Standard, Droplet, and Contact Precautions for all patients presenting with fever and respiratory symptoms.

While we support the initial approach with Standard, Contact, and Airborne precautions with eye protection for a novel pathogen with few potential cases that we identify from an epidemiology standpoint, we are in the midst of a public health crises with anticipated large numbers of patients that will overwhelm our health systems. **We urge you to focus on how SARS-CoV-19 is transmitted similarly to**

other respiratory viruses and change the recommendations to use of Standard, Droplet, and Contact Precautions reserving airborne isolation and use of respirators for aerosol-generating procedures as recommended by WHO, Canada, and other countries.

In addition, we request a change in guidance requiring keeping asymptomatic exposed healthcare workers out of work for 14 days from last exposure as we are rapidly depleting our workforce with this recommendation. **We urge you to consider allowing asymptomatic healthcare workers to continue to work while doing symptom self-monitoring as we do with other respiratory viruses including influenza.**

Thank you for your consideration,



Timothy H. Dellit, MD
Chief Medical Officer, UW Medicine
Vice President for Medical Affairs
University of Washington
President, UW Physician



Nancy E. Davidson, MD
President & Executive Director, Seattle Cancer Care Alliance
Senior Vice President and Member, Clinical Research Division, Fred Hutchinson Cancer Research Center
Head, Department of Medicine, Division of Medical Oncology, University of Washington
Raisbeck Endowed Chair for Collaborative Research



Onora Lien
Executive Director
Northwest Healthcare Response Network



Jennifer Graves, RN, MS
Vice President, Quality & Safety
Chief Nurse Executive
Kaiser Permanente Washington

From: Microsoft Outlook
Sent: Wednesday, March 4, 2020 12:02 PM PST
To: Craig Smith; Jeff.Duchin@kingcounty.gov
Subject: Undeliverable: RE: Resource for Community Prevalence Estimate of COVID-19
Attachments: RE Resource for Community Prevalence Estimate of COVID-19.msg.eml



Your message to CSmith@Bloodworksnc.org couldn't be delivered.

[CSmith](#) wasn't found at bloodworksnc.org.

Jeff.Duchin

Action Required

Office 365

CSmith

Recipient

Unknown To address

How to Fix It

The address may be misspelled or may not exist. Try one or more of the following:

- Send the message again following these steps: In Outlook, open this non-delivery report (NDR) and choose **Send Again** from the Report ribbon. In Outlook on the web, select this NDR, then select the link "**To send this message again, click here.**" Then delete and retype the entire recipient address. If prompted with an Auto-Complete List suggestion don't select it. After typing the complete address, click **Send**.
- Contact the recipient (by phone, for example) to check that the address exists and is correct.
- The recipient may have set up email forwarding to an incorrect address. Ask them to check that any forwarding they've set up is working correctly.
- Clear the recipient Auto-Complete List in Outlook or Outlook on the web by following the steps in this article: [Fix email delivery issues for error code 5.1.1 in Office 365](#), and then send the message again. Retype the entire recipient address before selecting **Send**.

If the problem continues, forward this message to your email admin. If you're an email admin, refer to the **More Info for Email Admins** section below.

Was this helpful? [Send feedback to Microsoft.](#)

More Info for Email Admins

Status code: 550 5.1.1

This error occurs because the sender sent a message to an email address outside of Office 365, but the address is incorrect or doesn't exist at the destination domain. The error is reported by the recipient domain's email server, but most often it must be fixed by the person who sent the message. If the steps in the **How to Fix It** section above don't fix the problem, and you're the email admin for the recipient, try one or more of the following:

The email address exists and is correct - Confirm that the recipient address exists, is correct, and is accepting messages.

Synchronize your directories - If you have a hybrid environment and are using directory synchronization make sure the recipient's email address is synced correctly in both Office 365 and in your on-premises directory.

Errant forwarding rule - Check for forwarding rules that aren't behaving as expected. Forwarding can be set up by an admin via mail flow rules or mailbox forwarding address settings, or by the recipient via the Inbox Rules feature.

Mail flow settings and MX records are not correct - Misconfigured mail flow or MX record settings can cause this error. Check

your Office 365 mail flow settings to make sure your domain and any mail flow connectors are set up correctly. Also, work with your domain registrar to make sure the MX records for your domain are configured correctly.

For more information and additional tips to fix this issue, see [Fix email delivery issues for error code 550 5.1.1 in Office 365](#).

Original Message Details

Created Date: 3/4/2020 8:02:46 PM
Sender Address: Jeff.Duchin@kingcounty.gov
Recipient Address: CSmith@Bloodworksnw.org
Subject: RE: Resource for Community Prevalence Estimate of COVID-19

Error Details

Reported error: 550 5.1.1 User Unknown
DSN generated by: BYAPR09MB3479.namprd09.prod.outlook.com
Remote server: mail2.psbcb.org

Message Hops

HOP	TIME (UTC)	FROM	TO	WITH	RELA Y T I M E
1	3/4/2020 8:02:47 PM	BYAPR09MB3351.namprd09.prod.outlook.com	BYAPR09MB3351.namprd09.prod.outlook.com	mapi	1 sec
2	3/4/2020 8:02:47 PM	BYAPR09MB3351.namprd09.prod.outlook.com	BYAPR09MB3479.namprd09.prod.outlook.com	Microsoft SMTP Server (version=TLS1_2, cipher=TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384)	*

Original Message Headers

ARC-Seal: i=1; a=rsa-sha256; s=arcselector9901; d=microsoft.com; cv=none;

b=1HJZ3eLszn/j5oJyi3XIlq+SPmbW+bLwlhFG9OkYxFK21IQKWp8q1uW4rXB/V45P6UHQdfoR4fB3SxDpi7Dz6ENpPf0rAOA74sa9SHYi6BvlysMjRTTEh+i7ZLXvdk2Jao+DuTkzed4khbkTf3G+txIpaXBIUZ+w4xmss2w/gjFmMTZuLgS+uPaMrCZ9Ra705GI+qWOr26A3EIBF4aWD17j4x/xBOofxqkVK26EOO0a3qKlPDo/EZ+1MOy8zbv+oFFVKiCYEM0gune0phedmM+DqWmlQxpyQ2HxIHbexzsMoyF/fEPse8e9tP302GBz7V4QwrHvFP4PQ/hnexY/rg==

ARC-Message-Signature: i=1; a=rsa-sha256; c=relaxed/relaxed; d=microsoft.com; s=arcselector9901;

h=From:Date:Subject:Message-ID:Content-Type:MIME-Version:X-MS-Exchange-SenderADCheck;

bh=pbXCKFWUWIXNDcJD9XBoFzti7fkJjeNlnEnftqAKRvc=;

b=STvdnhxgm7D+e97x0XAUCaPoYjheWZk2xlW0xlpaxFjNopuoDQfsIqNy/WKmeBVQieH4DtizawcYWhdk/OVVS5JUdMGpUdMQEqAtQUVyLeLpSYPqYId+fQSDMtAlLt6AP5dlGXv6ADkMaJ8yMNUpk6jWF3ovIT9CM7R7+cunzIdJY0yMct185K0T5qFOLJawItt/eH59dm3fvEfTd//AM9wCHM7femcNd8wjK

kwnoJXSiRwN09gOkhQtJhNNTzdlE2KxGVfYrfWOyLOZ5Ekjp8xlX/RkvgXptoh/9LDG3/Zd5S9h3d
 f4m/K9JUDuYRRmu8AqioGbt4Kqe/akYzIHWg==
 ARC-Authentication-Results: i=1; mx.microsoft.com 1; spf=pass
 smtp.mailfrom=kingcounty.gov; dmarc=pass action=none
 header.from=kingcounty.gov; dkim=pass header.d=kingcounty.gov; arc=none
 DKIM-Signature: v=1; a=rsa-sha256; c=relaxed/relaxed; d=kingcounty.gov;
 s=selector1;
 h=From:Date:Subject:Message-ID:Content-Type:MIME-Version:X-MS-Exchange-
 SenderADCheck;
 bh=pbXCKFWUWIXNDcJD9XBoFzti7fkJjeNlnEnftqAKRvc=;

b=3RqMR3TEXe3Wp6pok9rG/uFEpUIMKwF0kcbOsUvZeit5OZNKzgtlyX56QGawc/FgEUJjVoK1zbe
 /XHjaPKNBV8WxLD4IC5ViSICHuq3OdDkaZWnYom52fgab84OZ+I26nqmCySoMFlU9lvwtWZcUQYu/
 3QBgyBQUjLdWLTBq4jI=

Received: from BYAPR09MB3351.namprd09.prod.outlook.com
 (2603:10b6:a03:10e::22)
 by BYAPR09MB3479.namprd09.prod.outlook.com (2603:10b6:a03:112::12) with
 Microsoft SMTP Server (version=TLS1_2,
 cipher=TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384) id 15.20.2772.14; Wed, 4 Mar
 2020 20:02:47 +0000

Received: from BYAPR09MB3351.namprd09.prod.outlook.com
 ([fe80::c178:c6cc:9889:cece]) by BYAPR09MB3351.namprd09.prod.outlook.com
 ([fe80::c178:c6cc:9889:cece%6]) with mapi id 15.20.2772.019; Wed, 4 Mar 2020
 20:02:47 +0000

From: "Duchin, Jeff" <Jeff.Duchin@kingcounty.gov>
 To: Pavan Bhatraju <bhatraju@uw.edu>, Craig Smith <CSmith@Bloodworksnw.org>,
 "'Liles, Conrad'" <WCLiles@medicine.washington.edu>, "sumip1@gmail.com"
 <sumip1@gmail.com>
 CC: "Page, Libby Charhon" <Libby.Page@kingcounty.gov>, "Jernigan, John A."
 <jqj9@cdc.gov>, "Stein, Kate" <Kate.Stein@kingcounty.gov>
 Subject: RE: Resource for Community Prevalence Estimate of COVID-19
 Thread-Topic: Resource for Community Prevalence Estimate of COVID-19
 Thread-Index: AdXyXj+1LlS82TTURXu43nPN7xed4gAAUTIg
 Date: Wed, 4 Mar 2020 20:02:46 +0000
 Message-ID:
 <BYAPR09MB3351EE90EB483496B198AF5887E50@BYAPR09MB3351.namprd09.prod.outlook.c
 om>
 References:
 <MWHPR08MB2461C02EA44D9BA156A992D0B1E50@MWHPR08MB2461.namprd08.prod.outlook.c
 om>
 In-Reply-To:
 <MWHPR08MB2461C02EA44D9BA156A992D0B1E50@MWHPR08MB2461.namprd08.prod.outlook.c
 om>
 Accept-Language: en-US
 Content-Language: en-US
 X-MS-Has-Attach:
 X-MS-TNEF-Correlator:
 authentication-results: spf=none (sender IP is)
 smtp.mailfrom=Jeff.Duchin@kingcounty.gov;
 x-originating-ip: [146.129.239.48]
 x-ms-publictraffictype: Email
 x-ms-office365-filtering-ht: Tenant
 x-ms-office365-filtering-correlation-id: 03d618dc-afab-430c-026e-08d7c077026f
 x-ms-traffictypediagnostic: BYAPR09MB3479:|BYAPR09MB3479:
 x-ms-exchange-transport-forked: True

x-microsoft-antispam-prvs:
<BYAPR09MB34797B06B9F2C946CC1F2D5C87E50@BYAPR09MB3479.namprd09.prod.outlook.com>
x-ms-oob-tlc-oobclassifiers: OLM:9508;
x-forefront-prvs: 0332AACBC3
x-forefront-antispam-report:
SFV:NSPM;SFS:(10019020)(4636009)(136003)(396003)(346002)(39860400002)(366004)(376002)(189003)(199004)(110136005)(54906003)(33656002)(53546011)(6506007)(52536014)(107886003)(71200400001)(5660300002)(296002)(316002)(66946007)(2906002)(55016002)(9686003)(478600001)(66446008)(26005)(66556008)(66476007)(64756008)(4326008)(86362001)(7696005)(8936002)(76116006)(186003)(81166006)(81156014)(8676002);DIR:OUT;SFP:1102;SCL:1;SRVR:BYAPR09MB3479;H:BYAPR09MB3351.namprd09.prod.outlook.com;FPR:;SPF:None;LANG:en;PTR:InfoNoRecords;MX:1;A:1;
received-spf: None (protection.outlook.com: kingcounty.gov does not designate permitted sender hosts)
x-ms-exchange-senderadcheck: 1
x-microsoft-antispam: BCL:0;
x-microsoft-antispam-message-info:
PF4PoT7UE2MkmX3T+fKsJ4RRorIM7bTwmm/1nw0j3D7WLj/Qmz4G5O2bKtT3NqzVUgMX3oiUykHo0vUFnb1B59jMjZS6dVNiCXmHTFWzLAcRvt8vMSaokzjL42T08uFebQaGG50LT0NwibPcnczXMiY+fe tXPMXvJon+ybIk34wzzzywQDwQwU/DfJMRg74/rjn1mk1AiT0HAffbsVmT4MFNMD1V1Gf3cLLzZW rN UGS74OKS3n2QlBsctbmcmqZLrblFAJhqryzvZo/2vRfMdHgek4Mf/CZEIeH8k7yUfYIdNjGSGFKqK yiK8pt20GepDy46ateq2t8ALSOKnZndXk1fej9NP1EMZblee4OeD3JFpNIH5zjTPZWX8vVN8hhEVW yxcktGEUGUzYmDXox96g5+pzsgBzee0KDdd9jebSbVDfk6pUaSIYDop1/M3fRst
x-ms-exchange-antispam-messagedata:
ar5VPk5b1CCWPCfEgc6lKonWEJqJHpBytK/73nUiiyzEIXke3XkDy4FVp8sgRrdXmqpRJey28P/TH A+Up8gVHOYuZ+HgNZeTPnxput8RPfVevTNIyI9RT9f/Frw2DB0ts4A9ZDcyOotq9/VhoPDnFQ==
Content-Type: multipart/alternative;
 boundary="_000_BYAPR09MB3351EE90EB483496B198AF5887E50BYAPR09MB3351namp_
"
MIME-Version: 1.0
X-OriginatorOrg: kingcounty.gov
X-MS-Exchange-CrossTenant-Network-Message-Id: 03d618dc-afab-430c-026e-08d7c077026f
X-MS-Exchange-CrossTenant-originalarrivaltime: 04 Mar 2020 20:02:46.9046 (UTC)
X-MS-Exchange-CrossTenant-fromentityheader: Hosted
X-MS-Exchange-CrossTenant-id: bae5059a-76f0-49d7-9996-72dfe95d69c7
X-MS-Exchange-CrossTenant-mailboxtype: HOSTED
X-MS-Exchange-CrossTenant-userprincipalname: kmgGHVjWZCGjRbavGtFM2TLfVOTbpfyfycxtITXZV1A+5lJftnyL+Sk9yBvHn2LoVNHfpV7f86ej0r5ztK5cDBQQTN8MuTHQt/ezrWoYpc=
X-MS-Exchange-Transport-CrossTenantHeadersStamped: BYAPR09MB3479

From: Duchin, Jeff
Sent: Wednesday, March 4, 2020 12:02 PM PST
To: Pavan Bhatraju; Craig Smith; 'Liles, Conrad'; sumip1@gmail.com
CC: Page, Libby Charhon; Jernigan, John A.; Stein, Kate
Subject: RE: Resource for Community Prevalence Estimate of COVID-19

Pavan,

This is very wonderful news. We desperately need field teams to do testing for people who need testing but not medical care. I'm connecting you with our staff working on developing mobile field strike teams. We have an acute need at LifeWorks and would like to test family members of patients ASAP.

Much obliged - Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803
E-mail: jeff.duchin@kingcounty.gov

From: Pavan Bhatraju <bhatraju@uw.edu>
Sent: Wednesday, March 4, 2020 11:51 AM
To: Craig Smith <CSmith@Bloodworksnw.org>; 'Liles, Conrad' <WCLiles@medicine.washington.edu>; sumip1@gmail.com; Duchin, Jeff <Jeff.Duchin@kingcounty.gov>
Subject: Resource for Community Prevalence Estimate of COVID-19

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Dear All,

Bloodworks NW has reached out and wants to know how they can help. They have mobile bloodworks units, have the capability to swab and collect samples from many people and have the capacity to run COVID-19 assays at Bloodworks.

How can we utilize this resource to understand the prevalence of COVID-19 in the community?

Dr. Duchin, please tell us your thoughts and who we could work with.

Thanks,

Pavan

Pavan Bhatraju, MD MSc
Assistant Professor

Pulmonary, Critical Care and Sleep Medicine

From: Scott Dowell
Sent: Monday, March 2, 2020 10:04 PM PST
To: Duchin, Jeff
CC: David Blazes; Schrag, Stephanie (CDC/DDID/NCIRD/DBD)
Subject: Impact of social distancing in China
Attachments: Lai non-pharmaceutical interventions for COVID-19 2020.pdf

[EXTERNAL Email Notice!] External communication is important to us. Be cautious of phishing attempts. Do not click or open suspicious links or attachments.

Hey Jeff,

Here is that paper I mentioned, in case you have time to look at it. Pretty stunning results, if the China CDC numbers are credible. I am not sure about that, so I take it with a grain of salt. But if even partial implementation of social distancing, started earlier than they did in Wuhan, could blunt the epidemic peak it would be worth considering.

Copying David who leads our Epi and Modelling workstream on Covid-19 and can assemble some modelers to help support your decisions if useful.

Scott

Effect of non-pharmaceutical interventions for containing the COVID-19 outbreak: an observational and modelling study

Shengjie Lai*, Nick W Ruktanonchai*, Liangcai Zhou, Di Wang, Jing Xia, Olivia Prosper, Wei Luo, Jessica R Floyd, Amy Wesolowski, Chi Zhang, Xiangjun Du, Hongjie Yu, and Andrew J Tatem

*These authors contributed equally to this article.

WorldPop, School of Geography and Environmental Science, University of Southampton, UK (S Lai PhD, N W R Ruktanonchai PhD, J R Floyd, Prof A J Tatem PhD); Wuhan Center for Disease Control and Prevention, Wuhan, Hubei Province, China (L Zhou MD); Xiangyang Public Inspection and Testing Center, Xiangyang, Hubei Province, China (D Wang PhD); Hubei Provincial Center for Disease Control and Prevention, Wuhan, Hubei Province, China (J Xia PhD); Department of Mathematics, University of Tennessee, Knoxville, TN, USA (O Prosper PhD); Computational Health Informatics Program, Boston Children's Hospital, Boston, MA, USA (W Luo PhD); Department of Pediatrics, Harvard Medical School, Boston, MA, USA (W Luo); Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA (A Weolowski PhD); School of Public Health (Shenzhen), Sun Yat-sen University, Shenzhen, China (C Zhang, Prof X Du PhD); School of Public Health, Fudan University, Key Laboratory of Public Health Safety, Ministry of Education, Shanghai, China (Prof H Yu PhD, S Lai).

Corresponding authors: Shengjie Lai (Shengjie.Lai@soton.ac.uk) and Andrew J Tatem (A.J.Tatem@soton.ac.uk), WorldPop, School of Geography and Environmental Science, University of Southampton, UK

Abstract

Background

The COVID-19 outbreak containment strategies in China based on non-pharmaceutical interventions (NPIs) appear to be effective. Quantitative research is still needed however to assess the efficacy of different candidate NPIs and their timings to guide ongoing and future responses to epidemics of this emerging disease across the World.

Methods

We built a travel network-based susceptible-exposed-infectious-removed (SEIR) model to simulate the outbreak across cities in mainland China. We used epidemiological parameters estimated for the early stage of outbreak in Wuhan to parameterise the transmission before NPIs were implemented. To quantify the relative effect of various NPIs, daily changes of delay from illness onset to the first reported case in each county were used as a proxy for the improvement of case identification and isolation across the outbreak. Historical and near-real time human movement data, obtained from Baidu location-based service, were used to derive the intensity of travel restrictions and contact reductions across China. The model and outputs were validated using daily reported case numbers, with a series of sensitivity analyses conducted.

Findings

We estimated that there were a total of 114,325 COVID-19 cases (interquartile range [IQR] 76,776 - 164,576) in mainland China as of February 29, 2020, and these were highly correlated ($p < 0.001$, $R^2 = 0.86$) with reported incidence. Without NPIs, the number of COVID-19 cases would likely have shown a 67-fold increase (IQR: 44 - 94), with the effectiveness of different interventions varying. The early detection and isolation of cases was estimated to prevent more infections than travel restrictions and contact reductions, but integrated NPIs would achieve the strongest and most rapid effect. If NPIs could have been conducted one week, two weeks, or three weeks earlier in China, cases could have been reduced by 66%, 86%, and 95%, respectively, together with significantly reducing the number of affected areas. Results suggest that the social distancing intervention should be continued for the next few months in

China to prevent case numbers increasing again after travel restrictions were lifted on February 17, 2020.

Conclusion

The NPIs deployed in China appear to be effectively containing the COVID-19 outbreak, but the efficacy of the different interventions varied, with the early case detection and contact reduction being the most effective. Moreover, deploying the NPIs early is also important to prevent further spread. Early and integrated NPI strategies should be prepared, adopted and adjusted to minimize health, social and economic impacts in affected regions around the World.

Funding

Bill & Melinda Gates Foundation; EU Horizon 2020; National Natural Science Fund of China; Wellcome Trust.

Keywords: COVID-19; coronavirus; SARS-CoV-2; outbreak; non-pharmaceutical interventions; population movement; travel restriction; social distancing; model.

Research in context

Evidence before this study

The COVID-19 outbreak has spread widely across China since December 2019, with many other countries affected. The containment strategy of integrated nonpharmaceutical interventions (NPIs) including travel bans and restrictions, contact reductions and social distancing, early case identification and isolation have been rapidly deployed across China to contain the outbreak, and the combination of these interventions appears to be effective. We searched PubMed, Wanfang Data, and preprint archives for articles in English and Chinese published up to February 29, 2020, that contained information about the intervention of the COVID-19 outbreak. We found 15 studies that have investigated or discussed the potential effects of traveller screening, Wuhan's lockdown, travel restrictions, and contact tracing in China or other countries. However, none of them comprehensively and quantitatively compared the effectiveness of various NPIs and their timings for containing the COVID-19 outbreak.

Added value of this study

To our knowledge, this is the most comprehensive study to date on quantifying the relative effect of different NPIs and their timings for COVID-19 outbreak containment, based on human movement and disease data. Our findings show that NPIs, inter-city travel restrictions, social distancing and contact reductions, as well as early case detection and isolations, have substantially reduced COVID-19 transmission across China, with the effectiveness of different interventions varying. The early detection and isolation of cases was estimated to prevent more infections than travel restrictions and contact reductions, but integrated NPIs would achieve the strongest and most rapid effect. Our findings contribute to improved understanding of integrated NPI measures on COVID-19 containment and can help in tailoring control strategies across contexts.

Implications of all the available evidence

Given that effective COVID-19-specific pharmaceutical interventions and vaccines are not expected to be available for months, NPIs are essential components of the public health response to the ongoing outbreaks.

Considering the narrowing window of opportunity around the World, early and integrated NPI strategies should be prepared, deployed and adjusted to maximise the benefits of these interventions for containing COVID-19 spread.

Introduction

As of February 28, 2020 the COVID-19 outbreak has caused 78,961 confirmed cases (2791 deaths) across China, with the majority seen in Wuhan City, and 4691 cases (67 deaths) reported in the other 51 countries.¹ Further spread has occurred to all populated continents of the World, with many anticipating that a pandemic is approaching.^{2,3} As an emerging disease, effective pharmaceutical interventions are not expected to be available for months,⁴ and healthcare resources will be limited for treating all cases. Nonpharmaceutical interventions (NPIs) are therefore essential components of the public health response to outbreaks.^{1,5-7} These include isolating ill persons, contact tracing, quarantine of exposed persons, travel restrictions, school and workplace closures, and cancellation of mass gathering events.⁵⁻⁷ These containment measures aim to reduce transmission, thereby delaying the timing and reducing the size of the epidemic peak, buying time for preparations in the healthcare system, and enabling the potential for vaccines and drugs to be used later on.⁵ For example, social distancing measures have been effective in past influenza epidemics by curbing human-to-human transmission and reducing morbidity and mortality.⁸⁻¹⁰

Three major NPIs have been taken to mitigate the spread and reduce the outbreak size of COVID-19 across China.^{11,12} First, inter-city travel bans or restrictions have been taken to prevent further seeding the virus during the Chinese new year (CNY) holiday. People in China were estimated to make close to 3 billion trips over the 40-day CNY travel period from January 10 to February 18, 2020.^{12,13} A cordon sanitaire of Wuhan and surrounding cities in Hubei Province was put in place on January 23, 2020, just two days before CNY's day on January 25. However, Wuhan's lockdown is likely to have occurred during the latter stages of peak population numbers leaving the city before CNY, with around 5 million people likely leaving before the start of the travel ban, departing into neighbouring cities and other megacities in China.¹⁴ Since CNY's day, travel restrictions in other provinces were also put in place across the country.

The second group of containment measures involves improving the screening, contact tracing, identification, diagnosis, isolation and reporting of suspected ill persons and confirmed cases.¹¹ Since January 20, particularly in Wuhan, searches for cases, diagnosis and reporting have sped up across the country.

Local governments across China encouraged and supported routine screening and quarantine of travellers from Hubei Province in an attempt to detect COVID-19 infections as early as possible. In Wuhan, where the largest number of infected people live, residents were required to measure and report their temperature daily to confirm their onset, and those with mild and asymptomatic infections were also quarantined in “Fang Cang” hospitals, which are public spaces such as stadiums and conference centres that have been repurposed for medical care.¹¹ The average interval from symptom onset to laboratory confirmation has dropped from 12 days in the early stages of the outbreak to 3 days in early February, highlighting how the efficiency of disease detection and diagnosis has greatly improved.^{15,16}

Third, inner-city travel and contact restrictions were implemented to reduce the risk of community transmission. This involved limiting individual social contact, using personal hygiene and protective measures when people needed to move in public, and increasing the physical distance between those who have COVID-19 and those who do not.¹¹ As part of these social distancing policies, Chinese government encouraged people to stay at home as much as possible, cancelled or postponed large public events and mass gatherings, and closed libraries, museums, and workplaces.^{17,18} Additionally, to fully cover the suspected incubation period of COVID-19 spread before Wuhan’s lockdown, the CNY and school holidays were also extended, with the holiday end date changed from January 30 to March 10 for Hubei province, and Feb 9 for many other provinces.¹⁹⁻²¹

The implementation of these NPIs has coincided with the rapid decline in the number of new cases across China, albeit at high economic and social costs.^{15,16} On February 17, the State Council required localities to formulate differentiated county-level measures for precise containment of the COVID-19 outbreak and the restoration of socioeconomy affected by the outbreak.²² The timing of implementing and lifting interventions is likely to have been and continue to be important, to take advantage of the window of opportunity to save lives and minimize the economic and social impact.^{23,24}

The increasing numbers of cases of COVID-19 outside China and establishment of secondary transmission in multiple places highlights its pandemic potential. The best available scientific evidence is therefore required to design effective NPI strategies and disseminate this knowledge urgently to

help policy makers assess the potential benefits and costs of NPIs to contain COVID-19 outbreaks. Some previous studies have preliminarily explored the lockdown of Wuhan,²⁵⁻²⁷ travel restrictions,²⁸⁻³⁰ airport screening,^{31,32} and the isolation of cases and contact tracing for containing virus transmission, respectively.^{33,34} The conclusions of these studies are persuasive, there are still key knowledge gaps on the effectiveness of different interventions.¹⁵ To fully justify the preparation, implementation, or cancellation of various NPIs, policy makers across the World need evidence as to the combination and timings of each, which remains lacking.

Based on near-real time human movement and disease data, here we conducted an observational and modelling study to develop a travel network-based modelling framework. We aimed to reconstruct COVID-19 spread across China and assess the effect of the three major groups of NPIs mentioned above. Given the expanding landscape of epidemics across the World, our findings contribute to improved understanding of the effect of NPI measures on COVID-19 containment and can help in tailoring control strategies across contexts.

Methods

A travel network-based stochastic susceptible-exposed-infectious-removed (SEIR) model was built to simulate the COVID-19 spread between and within all prefecture-level cities in mainland China. Population movement data on human mobility across the country were used to estimate the intensity of travel restrictions and contact reductions. Data from illness onset to reporting of the first index case for each county were used to infer the changing timeliness of case identification and isolation across the course of the outbreak. The outputs of the model under NPIs were validated by using daily numbers of new cases reported across all regions in mainland China. Based on this modelling framework, the efficacy of applying or lifting non-pharmaceutical measures under various scenarios and timings were tested and quantified.

Data sources

Three population movement datasets, obtained from Baidu location-based services providing over 7 billion positioning requests per day,^{35,36} were used in this study to measure travel restrictions and social distancing across time and

space. The first is an aggregated and de-identified dataset on near-real time daily relative outbound and inbound flow of mobile phone users for each prefecture-level city in 2020 (340 cities in mainland China were included) to understand mobility patterns during the outbreak. The daily outflow from each city since Wuhan's lockdown and travel restrictions that were applied on January 23 were rescaled by the mean daily flow for each city during January 20 – 22 for comparing travel reductions across cities and years (Figure 1).

The second Baidu dataset is a historical relative movement matrix with daily total number of users at city level from December 26, 2014 to May 26, 2015, aligning with the 2020 CNY holiday period, for which the corresponding period is December 1, 2019 to April 30, 2020. We assumed that the pattern of population movements was the same in years when there were no outbreaks and interventions. Adjusted by the level of travel reductions derived from the 2020 dataset where applicable, the second dataset was used to simulate the COVID-19 spread and predict future transmission via population movements under various scenarios, with or without inter-city travel restrictions. Corresponding city-level population data in 2015 for modelling were obtained from the Chinese Bureau of Statistics.³⁷

The third Baidu dataset measures daily population movements at county level (2862 counties in China) from January 26 through April 30, 2014, as described elsewhere.³⁸ Based on the assumption that the pattern of population contact was consistent across years when there were no interventions, it was used to estimate inner-city travel and contact reduction under the outbreak and interventions. First, we aggregated data from county to city level and rescaled the daily flows since January 29, 2014 by the mean of the daily flow for the January 26 – 28 period, aligning with the date of Wuhan's lockdown and the 2020 CNY holiday. Then, the rescaled first dataset for 2020 under interventions was compared with the 2014 dataset to derive the percentage of travel decline for each city. The percentages for cities were averaged by day to preliminarily quantify the intensity of contact reduction in China under NPIs (appendix Table S1), as the policies of travel restriction and social distancing measures were implemented and occurred at the same time across the country.

We also collated data of the first case reported by county across mainland China to measure the delay from illness to case report as a reference of the

improved timeliness of case identification, isolation and reporting during the outbreak (appendix Table S2). The daily reported number of COVID-19 cases in Wuhan City, Hubei Province and other provinces were also used to further validate our results. These case data were collated from the websites of national and local health authorities, news media, and publications (appendix note).^{14,39,40}

Data analysis

We constructed a travel network-based SEIR modelling framework (the code of model is available online at <https://github.com/wpgp/BEARmod>) for before-and-after comparable analyses on NPI efficacy. First, we simulated the COVID-19 spread across a metapopulation, where each population represented a city across China. Within each population, numbers of susceptible, exposed, infectious, and recovered/removed people were tracked per day.³ The epidemiological parameters estimated for the early stage of the outbreak in Wuhan were used to parameterise the epidemic before widely implementing the NPIs.⁴¹ During each timestep, infected people first recovered or were removed at an average rate r , where r was equal to the inverse of the average infectious period. We used the median of time lags from illness onset to reported case as a proxy of the average infectious period, indicating the improving case identification and isolation under improved interventions (appendix Table S2). Exposed people then became infectious at a rate ε , where ε was the inverse of the average time spent exposed but not infectious, based on the estimated incubation period (5.2 days, 95% confidence interval [CI] 4.1 - 7.0).⁴¹

The number of new people that could become exposed was calculated based on the daily contact rate c and the number of infectious people in the city I_i , and this was turned into a number of newly exposed people after multiplying by the fraction of people in i who were susceptible (accounting for potential encounters with already-infected people, which did not lead to a new infection). The daily contact rate c was the basic reproduction rate (R_0 , 2.2, 95%CI 1.4 - 3.9) divided by the average days (5.8, 95%CI 4.3-7.5) from onset to first medical visit and isolation,⁴¹ then weighted by the level of daily contact (appendix Table S1). Finally, infectious people moved between cities, where the probability of moving from city i to city j (p_{ij}) was equal to the proportion

of smartphone users who went from city i to city j in the corresponding day from the Baidu dataset in 2015, accounting for the travel restrictions in 2020.

In this model, stochasticity occurred through variance in numbers of people becoming exposed, infectious, and removed/recovered, as well as variance in numbers of people moving from one city to another. Newly-infected people, recovered people, and numbers of people who moved were calculated for each city, each day, by drawing from *Poisson* distributions, where the probability of each person transitioning between states was ε , r , and p_{ij} respectively. By modelling the COVID-19 epidemic in this way, we could simulate the incidence of COVID-19 cases, accounting for variance in recovery, infection, and movement across many simulation runs (1000). Additionally, the incidence since the NPIs were implemented would be affected both by infections before and after interventions. Then, we could use this model to test the transmission of COVID-19 under various intervention scenarios and timings, as well as the potential of further transmission after the lifting of travel restrictions and contact distancing measures on 17 February 2020.

The estimates of the model for the outbreak under current NPIs as the baseline scenario were compared with reported COVID-19 cases across time and space. The sensitivity and specificity were also calculated to examine the performance of the model in predicting the occurrence of COVID-19 cases at city level across China. The relative effect of NPIs were quantitatively assessed by comparing estimates of cases under various NPIs and timings with that of the baseline scenario. We also conducted a series of sensitivity analyses to understand the impact of changing epidemiological parameters on the estimates and uncertainties of intervention efficacy. R version 3.6.1 (R Foundation for Statistical Computing, Vienna, Austria) was used to perform data collation and analyses.

Ethical approval

Ethical clearance for collecting and using secondary data in this study was granted by the institutional review board of the University of Southampton (No. 48002). All data were supplied and analysed in an anonymous format, without access to personal identifying information.

Role of the funding source

The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The corresponding authors had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Results

As of February 29, 2020, a total of 79,824 COVID-19 cases were reported in mainland China, with most cases (61%) having occurred in Wuhan (Table 1). The outbreak increased exponentially prior to CNY (Figure 2). However, the peak of epidemics across the country quickly appeared through implementing strong and comprehensive NPIs, including dramatic reductions in travel and contact, and significant improvements in the timeliness of case detection and reporting across the country (Figure 1 and appendix Tables S1 and S2). We estimated that there were a total of 114,325 COVID-19 cases (interquartile range [IQR] 76,776 – 164,576) in mainland China as of February 29, 2020, with 85% of these in Hubei Province. The epidemics outside of Hubei province likely reached a low level (< 10 cases per day) in late February or early March, while cities in Hubei Province may need another two or three weeks to reach same level as other provinces. The estimated epidemics and peaks were consistent with patterns of reported data by onset date, with a high correlation ($p < 0.001$, $R^2 = 0.86$) found across regions (Figure 2). The sensitivity and specificity of our model were 91% (280/308) and 69% (22/32), respectively, to predict a city with or without COVID-19 cases as of February 29, 2020.

We found that without NPIs, the number of COVID-19 cases would increase rapidly across China, with a 51-fold increase in Wuhan, a 92-fold increase in other cities in Hubei, and 125-fold increase in other provinces, as of February 29 (Table 1). However, the apparent effectiveness of different interventions varied (Figure 3 and appendix Figure S1). The lockdown of Wuhan might not have prevented the seeding of the virus from the city, as the travel ban was put in place at the latter stages of outbound travel prior to CNY's day (Figure 3). Nevertheless, if inter-city travel restrictions were not implemented, cities and provinces outside of Wuhan would have received more cases from Wuhan, and the affected geographic range would have expanded to the remote

northern and western areas of China (Figure 4a and appendix Figure S2). Generally, the early detection and isolation of cases was estimated to quickly and substantially prevent more infections than contact reduction and social distancing across the country (5-fold versus 2.6-fold), but without the intervention of contact reductions, in the longer term, the epidemics would increase exponentially. Therefore, integrated NPIs would achieve the strongest and most rapid effect on COVID-19 outbreak containment (Table 1).

The timings of intervention implementation are also critical. The number of cases could be dramatically reduced by 66%, 86%, and 95%, respectively, if the NPIs could be conducted one week, two weeks, and three weeks earlier than the actual timing across the country (Figure 5). Moreover, the geographical range of affected areas would shrink from 308 cities to 192, 130, and 61 cities, respectively (Figure 3 and appendix Figures S3 and S4). Additionally, if population contact resumed to the normal levels seen in previous years, the lifting of travel restrictions since February 17 might cause the epidemic to rise again (Figure 5 and appendix Figure S5). Therefore, the social distancing intervention should be continued for several months. Additionally, sensitivity analyses suggested that our model could have robustly measured relative changes of efficacy of various interventions on containing the COVID-19 outbreak under different epidemiological parameters and transmission scenarios (appendix Figures S6-S12).

Discussion

Our findings show that combined NPIs, inter-city travel restrictions, social distancing and contact reductions, as well as early case detection and isolations, have substantially reduced COVID-19 transmission across China. The lifting of inter-city travel restrictions since February 17, 2020, aiming to minimize the socioeconomic impact, does not appear to lead to an increase in cases if social distancing intervention can be maintained. Additionally, earlier implementation of interventions could have significantly reduced the magnitude and geographical range of the COVID-19 outbreak that has occurred in China. China's vigorous, multifaceted response is likely to have prevented a far worse situation, which would have accelerated spread globally. The lessons drawn from China provide robust evidence and provide a preparation window and fighting chance for containing the spread of COVID-19 in other regions around the World.^{15,16}

Three points raised by our findings are important. First, they support and validate the idea that population movement and close contact has a major role in the spread of COVID-19 within and beyond China,^{3,14} indicating the global risk of a pandemic via travellers infected with this virus. As the lockdown of Wuhan happened at the late stage of movement before CNY, travel restrictions did not halt the seeding of the virus from Wuhan, but it likely prevented extra cases being exported from Wuhan to a wider area. The second point is that the importance and effects of various NPIs differed. Compared to travel restrictions, improved detection and isolation of cases as well as the social distancing likely had a greater impact on the containment of outbreak. The social distancing intervention reduced contact with people who travelled from the epicentre of the epidemic, who were encouraged to quarantine at home. This is likely to have been especially helpful in curbing the spread of an emerging pathogen to the wider community, and reduced the spread risk from asymptomatic or mild infections.⁵ Third, given travel and work resuming in China, the country should consider at least partial continuation of NPIs to ensure that the COVID-19 outbreak is sustainably controlled. For example, early case identification and isolation should be maintained, and social distancing and personal hygiene are still proposed. Teleworking at home and staggered shifts are considered for mitigating COVID-19 transmission in workplaces or during the commute to and from work. Although the number of reported cases in the COVID-19 outbreak in China has decreased rapidly since February, we cannot be certain that the SARS-CoV-2 can be eradicated, as occurred for SARS-CoV.⁴²

Ours is the most comprehensive study yet in which the effect of NPIs on COVID-19 transmission has been quantitatively assessed. Our model framework accounts for daily interactions of populations, interventions between and within cities, as well as the inherent statistical uncertainty associated with paucity of epidemiological parameters, before and after the interventions. Together with near-real time population movement and case data, our approach can be used for risk assessment for near real-time estimation of the effectiveness of different NPIs in the ongoing outbreaks in different countries. Our network-based SEIR model is methodologically robust and built on the basic SEIR models previously used to predict COVID-19 transmission in its early stages.³ Additionally, we assessed the effect of interventions by comparing estimates under various scenarios. Based on

sensitivity analyses of multiple parameters, our results on the relative effects of NPIs are robust to the possibility of changes in parameters. Considering the delay in case reporting, our approach and findings can provide critical and early evidence for outbreak control decision-making.

However, our study has several limitations. First, as our simulations were based on the parameters estimated for the cases found in the early stage of the outbreak in Wuhan, which might not account for the asymptomatic and mild infections, our study may underestimate the total number of infections. However, public awareness and enhanced case searching remained high throughout the study period, and a high proportion of infections was likely to have been detected, with nearly all reported cases eventually subjected to laboratory testing. Second, our findings could be affected by bias and confounding because the modelling is based on observations over a short period. Although we have shown that the apparent fall in incidence of COVID-19 since CNY's day in China is likely to be attributed to the interventions taken, we cannot rule out the possibility that the decrease was caused by varying timings and intensities of various NPIs taken in different areas as well as some other unknown seasonal factors, e.g. temperature and absolute humidity.^{43,44} Third, our models and findings were based on some assumptions on parameterizations. If the epidemiological parameters of COVID-19 transmission in other cities across China differed with estimates from the outbreak at the early stage where no NPIs were in place in Wuhan, then our estimates of the effectiveness of interventions in reducing COVID-19 transmission could be biased. Although previous studies have supported the consistent seasonality of travel patterns across years in China and other countries,^{14,36} the magnitude and pattern could change year by year. Additionally, inner-city travel restrictions and population contact reductions might not be highly correlated, and other data sources and further investigations are needed to explore this. Fourth, some coverage biases of mobile phone and Baidu users likely exist. Though a high percentage of the population owns mobile phones in China,⁴⁵ the mobile user group still does not cover specific subgroups of the population, particularly children, and not all mobile owners use the Baidu location-based service. Therefore, our population movement data may provide an incomplete picture, and the spatiotemporal and demographic variations in the behaviour of phone users could have biased population distribution and travel estimates. Last, we only measured the main

groups of NPIs and other interventions might also contributed to the outbreak containment, further research is needed to elaborate the effect of each intervention.

Because of the pandemic potential of the virus, should the outbreak spread widely in other countries, it will put a substantial burden on local health systems and society. From a public health standpoint, our results highlight that countries facing potential spread of COVID-19 should consider proactively planning NPIs and relevant resources for containment, given how the earlier implementation of NPIs could have lead to significant reductions in size of the outbreak in China. The results here provide some guidance for countries as to the likely effectiveness of different NPIs at different stages of an outbreak. Suspected and confirmed cases should be identified, diagnosed, isolated and reported as early as possible to control the source of infection, and the implementation of cordon sanitaires or travel restrictions for significantly affected areas may prevent seeding the virus to wider regions. Reducing contact and increasing social distance, together with improved personal hygiene, e.g. hand washing, can protect vulnerable populations and mitigate COVID-19 spread at the community level, and these interventions should be promoted throughout the outbreak to avoid the resurgence. As called for by the World Health Organization, and backed up by our findings for China here, early and integrated NPI strategies should be prepared, deployed and adjusted to maximise benefits of these interventions and minimize health, social and economic impacts in affected regions, considering the narrowing window of opportunity around the World.^{2,16}

Contributors

SL designed the study, collected data, finalised the analysis, interpreted the findings, wrote the manuscript, and interpreted the findings. NWR built the model, analysed data, interpreted the findings, and wrote the manuscript. LZ, DW, and JX collected data, interpreted the findings, commented on and revised drafts of the manuscript. JRF and OP built the model, commented on and revised drafts of the manuscript. CZ collected data, interpreted the findings and commented on and revised drafts of the manuscript. AJT interpreted the findings and revised drafts of the manuscript. AW, XD, and HY interpreted the findings and commented on and revised drafts of the manuscript. All authors read and approved the final manuscript.

Declaration of interests

We declare no competing interests.

Acknowledgments

We thank staff members at county-level, prefecture-level, provincial-level, and national Centers for Disease Control and Prevention across China where outbreaks occurred for field investigation, administration, and data collection. We thank Baidu Inc. sharing population movement data. We also thank Yanyan Zhu and Shuhao Lai for collating online data. This study was supported by the grants from the Bill & Melinda Gates Foundation (OPP1134076); the European Union Horizon 2020 (MOOD 874850); the National Natural Science Fund of China (81773498); National Science and Technology Major Project of China (2016ZX10004222-009); Program of Shanghai Academic/Technology Research Leader (18XD1400300). AJT is supported by funding from the Bill & Melinda Gates Foundation (OPP1106427, OPP1032350, OPP1134076, OPP1094793), the Clinton Health Access Initiative, the UK Department for International Development (DFID) and the Wellcome Trust (106866/Z/15/Z, 204613/Z/16/Z). HY is supported by funding from the National Natural Science Fund for Distinguished Young Scholars of China (No. 81525023); Program of Shanghai Academic/Technology Research Leader (No. 18XD1400300); and the United States National Institutes of

Health (Comprehensive International Program for Research on AIDS grant U19 AI51915).

Data sharing

The data of COVID-19 cases reported by county, city, and province across China are available from data sources detailed in the Supplementary, and the average days from illness onset to report of the first case by each county used in the modelling are detailed in appendix Tabel S2. The mobile phone datasets analysed during the current study are not publicly available since this would compromise the agreement with the data provider, but the information on the process of requesting access to the data that support the findings of this study are available from Dr Shengjie Lai (Shengjie.Lai@soton.ac.uk), and the data of travel and contact reductions derived from the datasets and used in our model are detailed in appendix Tabel S1.

Table 1. Reports and estimates of the COVID-19 cases in mainland China, as of February 29, 2020.

Interventions and timing	Wuhan City, Hubei Province	Other cities in Hubei Province	Other provinces	Mainland China
Under current non-pharmaceutical interventions (NPIs)				
No. of cases reported (%)*	49,122 (62)	17,785 (23)	12,917 (16)	79,824 (100)
Estimated no. of cases (%)	78,910 (69)	18,503 (16)	16,912 (15)	114,325 (100)
	(51,952 - 111,280)	(11,029 - 28,685)	(9,499 - 27,033)	(76,776 - 164,576)
Dates of estimated peak number of cases	Jan 25 - 27, 2020	Jan 24 - 26, 2020	Jan 24 - 26, 2020	Jan 25 - 27, 2020
Percentage (%) of cases that could have been prevented at various intervention timings				
One week ahead	61 (45 - 79)	71 (55 - 86)	78 (62 - 90)	66 (50 - 82)
Two weeks ahead	84 (78 - 89)	90 (82 - 94)	91 (84 - 95)	86 (81 - 90)
Three weeks ahead	94 (92 - 96)	97 (95 - 99)	98 (97 - 99)	95 (93 - 97)
Estimated relative no. of cases under various NPIs, referring to the median of estimates under current interventions				
Without inter-city travel restriction	1.0 (0.6 - 1.3)	1.1 (0.7 - 1.7)	1.1 (0.7 - 1.7)	1.0 (0.6 - 1.4)
Without inner-city contact reduction	2.5 (1.7 - 3.7)	2.6 (1.5 - 4.2)	2.4 (1.2 - 4.0)	2.6 (1.7 - 3.7)
Without case early detection and isolation	5.0 (3.3 - 6.9)	5.6 (3.2 - 8.4)	5.1 (2.5 - 8.4)	5.0 (3.3 - 7.1)
Without all interventions above	51.4 (33.2 - 71.2)	91.6 (57.6 - 132.5)	124.7 (77.4 - 180)	67.3 (43.7 - 93.7)

* The reported data of COVID-19 cases were obtained from the Chinese National Health Commission as of February 29, 2020.

The median and interquartile range of estimates are provided here.

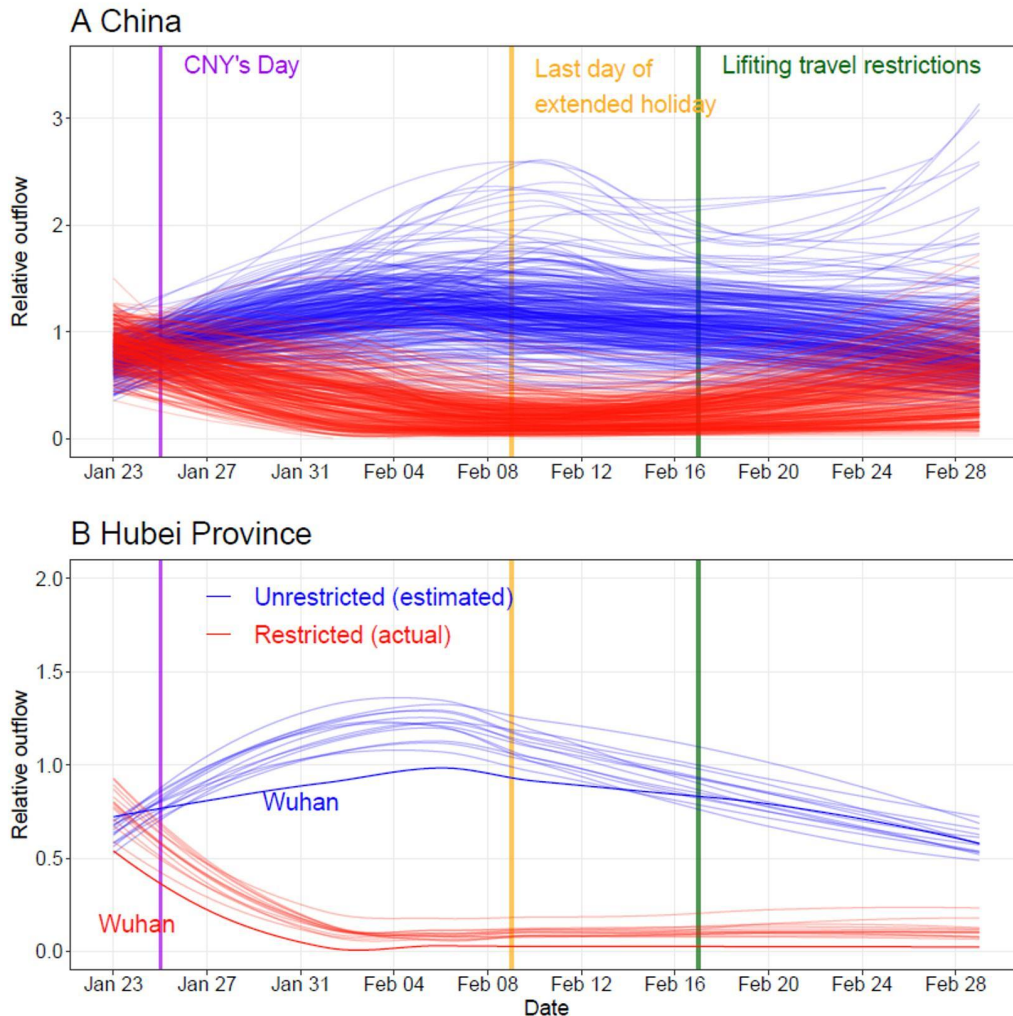


Figure 1: Relative daily volume of outbound travellers from cities (prefectural level) across mainland China during Chinese New Year (CNY) holiday, January 23rd – February 29th, 2020.

(A) All cities in mainland China. **(B)** Cities in Hubei province with Wuhan highlighted by using dark colours. Each blue line represents estimates of normal outflow by city under the scenario without travel restriction, following travel in previous years. The lines of relative volume were smoothed by using locally estimated scatterplot smoothing (LOESS) regression.

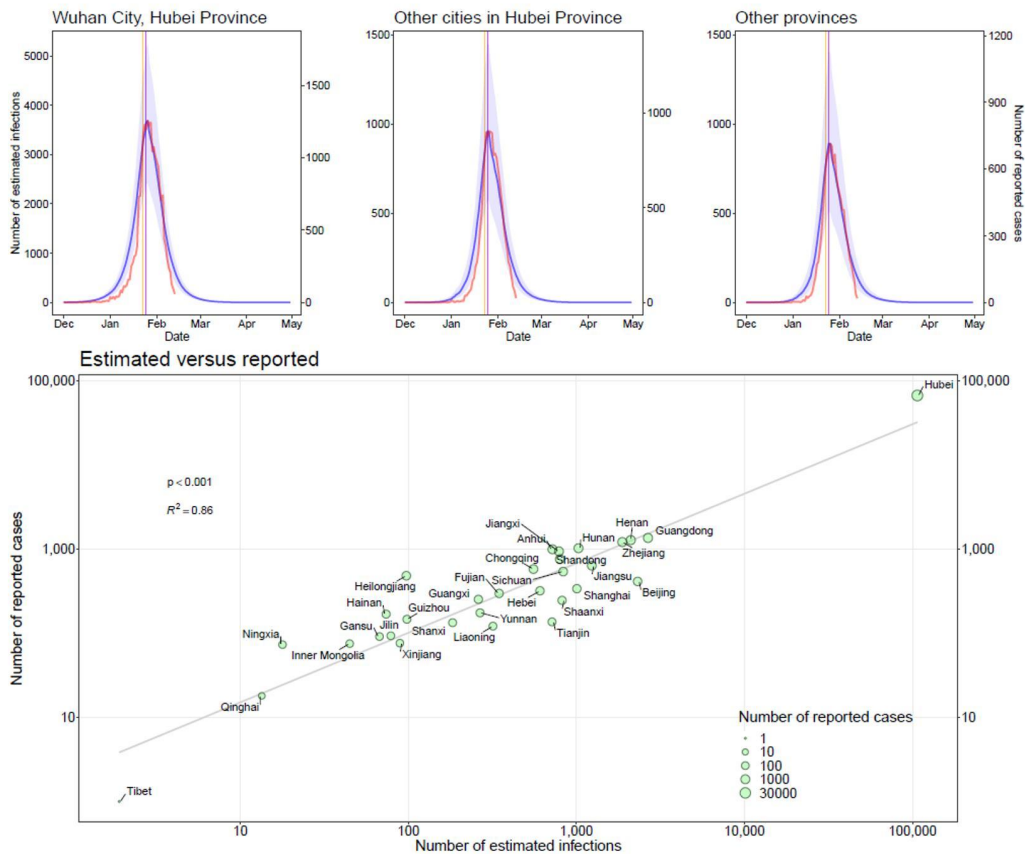


Figure 2: Estimated and reported epicurves of COVID-19 outbreak in China.

Vertical lines: orange – date of Wuhan’s lockdown; purple – Chinese New Year’s day.

The median and interquartile range (blue) of estimates of COVID-19 cases are presented with reported cases (red) by date of illness onset as of February 13, 2020.

The reported data of COVID-19 cases in the scatterplot were obtained from the Chinese National Health Commission, as of February 29, 2020.

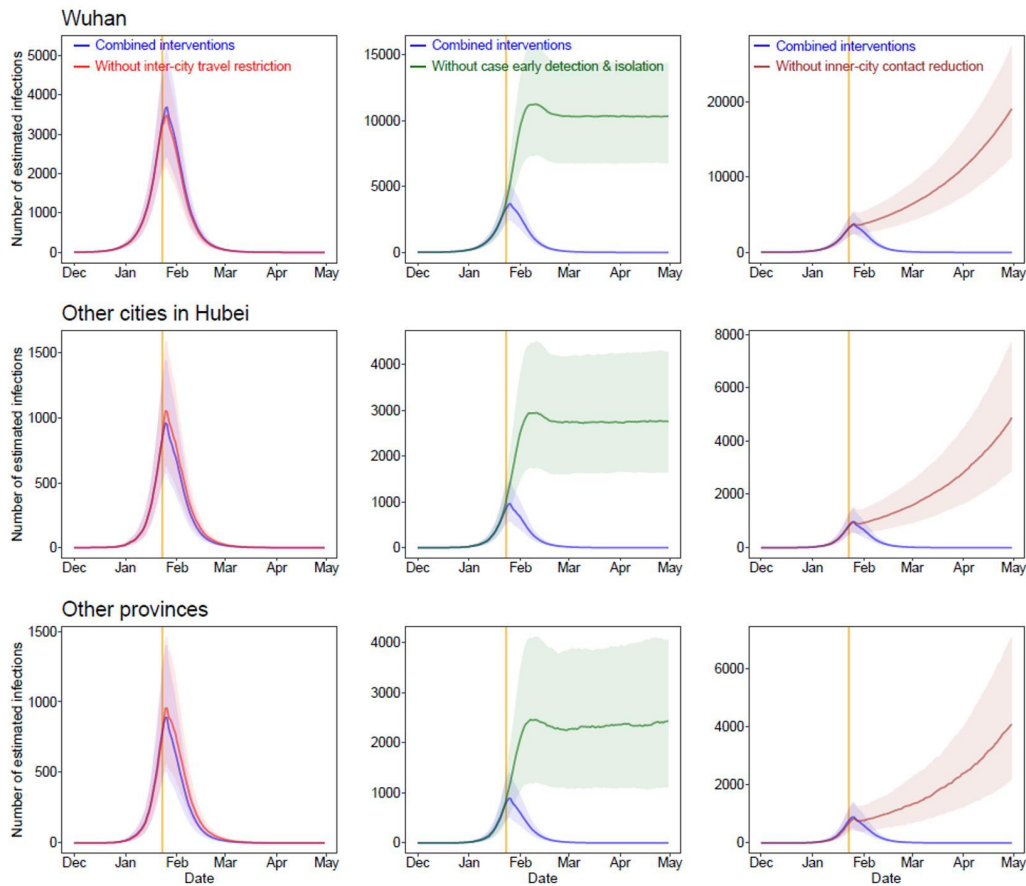


Figure 3: Estimated epicurves of COVID-19 outbreak under various scenarios with or without non-pharmaceutical interventions (NPIs) by region.

The blue lines present estimated transmission under current NPIs, and each other line represents the scenario without one type of intervention. The median and interquartile range of estimates are provided here. The orange vertical line indicates the date of Wuhan's lockdown on January 23, 2020.

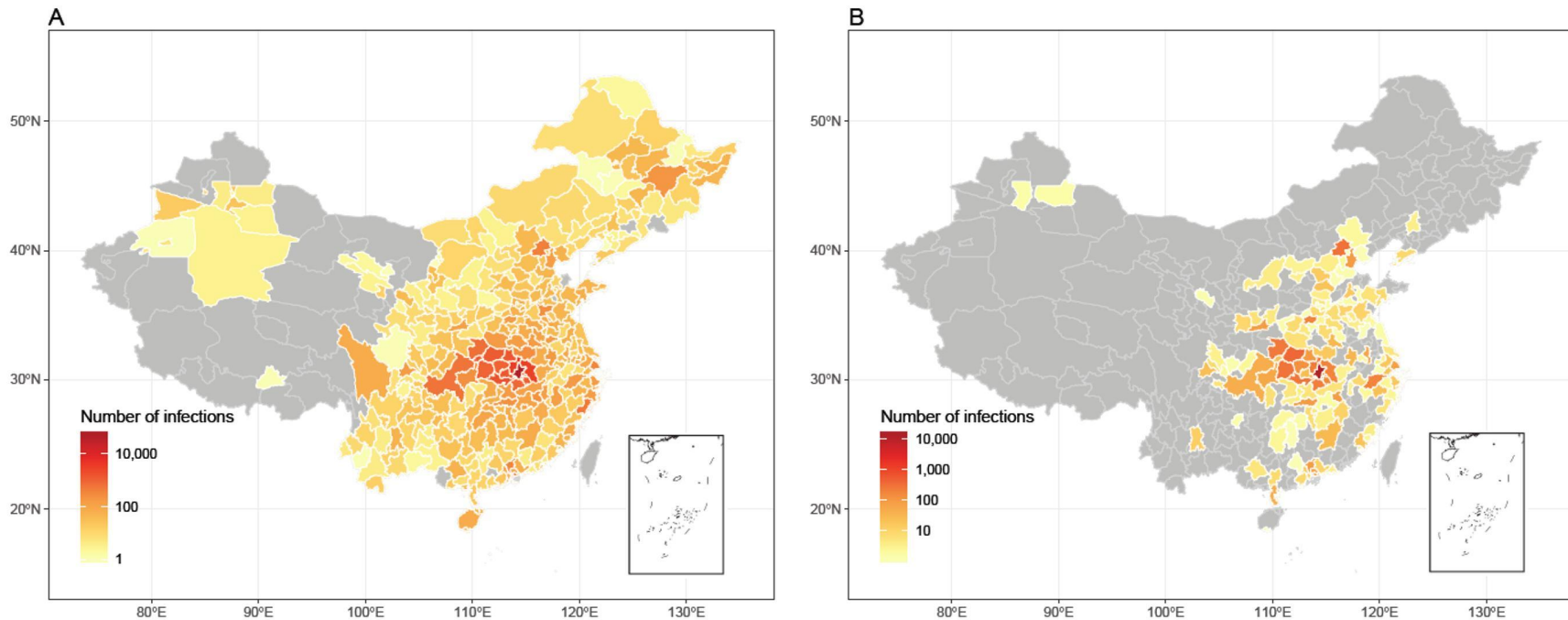


Figure 4: Affected areas of COVID-19 in mainland China as of February 29, 2020, under current interventions but with different timings.

(A) Affected areas under interventions implemented at actual timing. A total of 308 cities reported cases, based on the data obtained from national and local health authorities, as of February 29, 2020. (B) Affected areas under interventions implemented at two weeks earlier than actual timing, with an estimate of 130 cities affected.

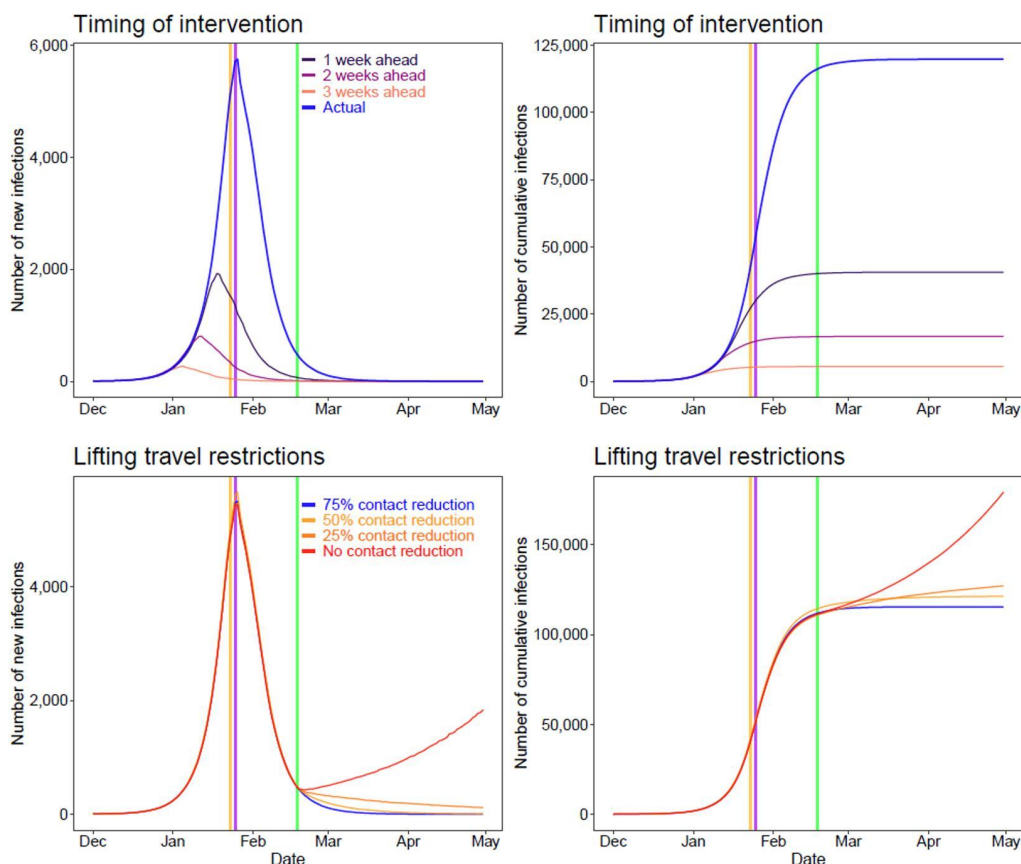


Figure 5: Estimates of the COVID-19 epidemic under various scenarios of intervention timing, travel restriction and contact reduction.

Vertical lines: orange – date of Wuhan’s lockdown; purple - CNY’s Day; green – date of lifting of travel restrictions. The epidemics under various intervention timings were estimated under current non-pharmaceutical interventions. We estimated the COVID-19 spread under different population contact rates after lifting inter-city travel restrictions across the country on February 17, 2020.

Reference

1. World Health Organization. Novel coronavirus (2019-nCoV). 2020. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> (accessed 29 February 2020).
2. World Health Organization. Coronavirus Disease (COVID-19) Press Conference, 21 February 2020. 2020. https://www.who.int/docs/default-source/coronaviruse/transcripts/who-audio-emergencies-coronavirus-full-press-conference-21feb2020-final.pdf?sfvrsn=954f8ec7_2 (accessed 23 February 2020).
3. Wu JT, Leung K, Leung GM. Nowcasting and forecasting the potential domestic and international spread of the 2019-nCoV outbreak originating in Wuhan, China: a modelling study. *Lancet* 2020. doi: 10.1016/S0140-6736(20)30260-9
4. Heymann DL, Shindo N. COVID-19: what is next for public health? *The Lancet* 2020; 395(10224): 542-5. doi: 10.1016/S0140-6736(20)30374-3
5. Fong MW, Gao H, Wong JY, et al. Nonpharmaceutical Measures for Pandemic Influenza in Nonhealthcare Settings-Social Distancing Measures. *Emerg Infect Dis* 2020; 26(5). doi: 10.3201/eid2605.190995
6. Ryu S, Gao H, Wong JY, et al. Nonpharmaceutical Measures for Pandemic Influenza in Nonhealthcare Settings-International Travel-Related Measures. *Emerg Infect Dis* 2020; 26(5). doi: 10.3201/eid2605.190993
7. Xiao J, Shiu EYC, Gao H, et al. Nonpharmaceutical Measures for Pandemic Influenza in Nonhealthcare Settings-Personal Protective and Environmental Measures. *Emerg Infect Dis* 2020; 26(5). doi: 10.3201/eid2605.190994
8. Markel H, Lipman HB, Navarro JA, et al. Nonpharmaceutical interventions implemented by US cities during the 1918-1919 influenza pandemic. *JAMA* 2007; 298(6): 644-54. doi: 10.1001/jama.298.6.644
9. Ferguson NM, Cummings DA, Cauchemez S, et al. Strategies for containing an emerging influenza pandemic in Southeast Asia. *Nature* 2005; 437(7056): 209-14. doi: 10.1038/nature04017
10. Hatchett RJ, Mecher CE, Lipsitch M. Public health interventions and epidemic intensity during the 1918 influenza pandemic. *Proc Natl Acad Sci U S A* 2007; 104(18): 7582-7. doi: 10.1073/pnas.0610941104
11. Chen W, Wang Q, Li YQ, et al. Early containment strategies and core measures for prevention and control of novel coronavirus pneumonia in China. *Chinese Journal of Preventive Medicine* 2020; 54(3): 1-6. doi: 10.3760/cma.j.issn.0253-9624.2020.03.003
12. Chen S, Yang J, Yang W, Wang C, Bärnighausen T. COVID-19 control in China

during mass population movements at New Year. *Lancet*. doi:
10.1016/S0140-6736(20)30421-9

13. Ministry of Transport of the People's Republic of China. Big data! The travel volume predictions during Lunar New Year holiday in 2020. 2020.
http://www.mot.gov.cn/fenxigongbao/yunlifexi/202001/t20200109_3322161.html
(accessed 15 February 2020).

14. Lai S, Bogoch II, Watts A, Khan K, Li Z, Tatem A. Preliminary risk analysis of 2019 novel coronavirus spread within and beyond China. 2020.
<https://www.worldpop.org/events/china> (accessed 1 February 2020).

15. World Health Organization. Press Conference of WHO-China Joint Mission on COVID-19. 2020.
https://www.who.int/docs/default-source/coronaviruse/transcripts/joint-mission-press-conference-script-english-final.pdf?sfvrsn=51c90b9e_2 (accessed 26 February 2020).

16. World Health Organization. Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). 2020.
<https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf> (accessed 1 March 2020).

17. The State Council of the People's Republic of China. The announcement from Wuhan's headquarter on the novel coronavirus prevention and control. 2020.
http://www.gov.cn/xinwen/2020-01/23/content_5471751.htm (accessed January 24 2020).

18. The State Council of the People's Republic of China. The announcement on Strengthening Community Prevention and Control of Pneumonia Epidemic Situation of New Coronavirus Infection. 2020.
http://www.gov.cn/zhengce/2020-01/27/content_5472516.htm (accessed 31 January 2020).

19. The State Council of the People's Republic of China. The State Council's announcement on extending the Lunar New Year Holiday in 2020. 2020.
http://www.gov.cn/zhengce/content/2020-01/27/content_5472352.htm (accessed 28 January 2020).

20. The People's Government of Beijing Municipality. Companies can flexibly arrange jobs during the novel coronavirus epidemic except for those absolutely necessary for the normal operation of cities. 2020.
http://www.gov.cn/xinwen/2020-02/01/content_5473522.htm (accessed 2 January 2020).

21. The People's Government of Shanghai Municipality. The announcement on postponing the reoperation date of companies and the reopening date of schools. 2020.

<http://www.shanghai.gov.cn/nw2/nw2314/nw2315/nw43978/u21aw1423601.html>

(accessed 31 January 2020).

22. The State Council of the People's Republic of China. Guiding Opinions on Scientific and Accurate Strategy, Division and Classification for the COVID-19 Prevention and Control. 2020.

http://www.gov.cn/xinwen/2020-02/18/content_5480514.htm (accessed 19 February 2020).

23. Gilbert M, Pullano G, Pinotti F, et al. Preparedness and vulnerability of African countries against importations of COVID-19: a modelling study. *The Lancet*. doi: 10.1016/S0140-6736(20)30411-6

24. International Air Transport Association. COVID-19 Cuts Demand and Revenues. 2020. <https://www.iata.org/en/pressroom/pr/2020-02-20-01/> (accessed 22 February 2020).

25. Ai S, Zhu G, Tian F, et al. Population movement, city closure and spatial transmission of the 2019-nCoV infection in China. *medRxiv* 2020: 2020.02.04.20020339. doi: 10.1101/2020.02.04.20020339

26. Chen Z, Zhang Q, Lu Y, et al. Distribution of the 2019-nCoV Epidemic and Correlation with Population Emigration from Wuhan, China. *medRxiv* 2020: 2020.02.10.20021824. doi: 10.1101/2020.02.10.20021824

27. Li X, Zhao X, Sun Y. The lockdown of Hubei Province causing different transmission dynamics of the novel coronavirus (2019-nCoV) in Wuhan and Beijing. *medRxiv* 2020: 2020.02.09.20021477. doi: 10.1101/2020.02.09.20021477

28. Tian H, Li Y, Liu Y, et al. Early evaluation of the Wuhan City travel restrictions in response to the 2019 novel coronavirus outbreak. *medRxiv* 2020: 2020.01.30.20019844. doi: 10.1101/2020.01.30.20019844

29. Chinazzi M, Davis JT, Ajelli M, et al. The effect of travel restrictions on the spread of the 2019 novel coronavirus (2019-nCoV) outbreak. *medRxiv* 2020: 2020.02.09.20021261. doi: 10.1101/2020.02.09.20021261

30. Ying S, Li F, Geng X, et al. Spread and control of COVID-19 in China and their associations with population movement, public health emergency measures, and medical resources. *medRxiv* 2020: 2020.02.24.20027623. doi: 10.1101/2020.02.24.20027623

31. Quilty BJ, Clifford S, Flasche S, Eggo RM, group Cnw. Effectiveness of airport screening at detecting travellers infected with novel coronavirus (2019-nCoV). *Euro Surveill* 2020; 25(5). doi: 10.2807/1560-7917.ES.2020.25.5.2000080

32. Clifford SJ, Pearson CAB, Klepac P, et al. Interventions targeting air travellers early in the pandemic may delay local outbreaks of SARS-CoV-2. *medRxiv* 2020: 2020.02.12.20022426. doi: 10.1101/2020.02.12.20022426

33. Keeling MJ, Hollingsworth TD, Read JM. The Efficacy of Contact Tracing for the Containment of the 2019 Novel Coronavirus (COVID-19). *medRxiv* 2020: 2020.02.14.20023036. doi: 10.1101/2020.02.14.20023036
34. Hellewell J, Abbott S, Gimma A, et al. Feasibility of controlling COVID-19 outbreaks by isolation of cases and contacts. *The Lancet Global Health*. doi: 10.1016/S2214-109X(20)30074-7
35. Lai S, Zhou H, Xiong W, et al. Changing Epidemiology of Human Brucellosis, China, 1955-2014. *Emerg Infect Dis* 2017; 23(2): 184-94. doi: 10.3201/eid2302.151710
36. Wang X, Liu C, Mao W, Hu Z, Gu L. Tracing the largest seasonal migration on earth. *arXiv*:1411.0983; 2014.
37. National Bureau of Statistics of China. China Statistical Yearbook 2014. <http://www.stats.gov.cn/english/Statisticaldata/AnnualData/> (accessed 15 January 2020).
38. Kraemer MUG, Reiner RC, Jr., Brady OJ, et al. Past and future spread of the arbovirus vectors *Aedes aegypti* and *Aedes albopictus*. *Nat Microbiol* 2019; 4(5): 854-63. doi: 10.1038/s41564-019-0376-y
39. Novel Coronavirus Pneumonia Emergency Response Epidemiology Team. The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19) in China. *Chinese Journal of Epidemiology* 2020; 41(2): 145-51. doi: 10.3760/cma.j.issn.0254-6450.2020.02.003
40. Zhang J, Litvinova M, Wang W, et al. Evolving epidemiology of novel coronavirus diseases 2019 and possible interruption of local transmission outside Hubei Province in China: a descriptive and modeling study. *medRxiv* 2020: 2020.02.21.20026328. doi: 10.1101/2020.02.21.20026328
41. Li Q, Guan X, Wu P, et al. Early Transmission Dynamics in Wuhan, China, of Novel Coronavirus-Infected Pneumonia. *N Engl J Med* 2020. doi: 10.1056/NEJMoa2001316
42. Li Z, Gao GF. Infectious disease trends in China since the SARS outbreak. *Lancet Infect Dis* 2017; 17(11): 1113-5. doi: 10.1016/S1473-3099(17)30579-0
43. Wang M, Jiang A, Gong L, et al. Temperature significant change COVID-19 Transmission in 429 cities. *medRxiv* 2020: 2020.02.22.20025791. doi: 10.1101/2020.02.22.20025791
44. Luo W, Majumder MS, Liu D, et al. The role of absolute humidity on transmission rates of the COVID-19 outbreak. *medRxiv* 2020: 2020.02.12.20022467. doi: 10.1101/2020.02.12.20022467
45. Lai S, Farnham A, Ruktanonchai NW, Tatem AJ. Measuring mobility, disease connectivity and individual risk: a review of using mobile phone data and mHealth for

travel medicine. *J Travel Med* 2019; 26(3). doi: 10.1093/jtm/taz019

Supporting information for

Effect of non-pharmaceutical interventions for containing the COVID-19 outbreak: an observational and modelling study

Shengjie Lai, Nick W Ruktanoncha*, Liangcai Zhou, Di Wang, Jing Xia, Olivia Prosper, Wei Luo, Jessica R Floyd, Amy Wesolowski, Chi Zhang, Xiangjun Du, Hongjie Yu, and Andrew J Tatem

Appendix Note

Data sources of COVID-19 cases

The daily and total number of COVID-19 cases reported by province and city across China as of February 29, 2020, were obtained from the websites of national and local health authorities, the Sina News (https://news.sina.cn/zt_d/yiqing0121). The data of dates of travelling from Wuhan, illness onset, first medical visit, reporting of the first index case of each county were collated from the following websites, and also detailed in previous publications.¹⁻³

- http://gx.sina.com.cn/news/gx/2020-01-24/detail-iihnzhha4423379.shtml?from=gx_cnxh
- <http://hc.jiangxi.gov.cn/doc/2020/01/22/137549.shtml>
- http://news.china.com.cn/2020-01/23/content_75643380.htm
- http://news.china.com.cn/txt/2020-01/23/content_75642508.htm
- <http://news.cnstock.com/news,bwqx-197001-4480536.htm>
- <http://news.workercn.cn/32843/202001/23/200123115628638.shtml>
- <http://news.xmnn.cn/xmnn/2020/01/22/100656796.shtml>
- <http://news.xmnn.cn/xmnn/2020/01/22/100656796.shtml> and <https://m.weibo.cn/status/4464259805726673?>
- http://wjw.hunan.gov.cn/wjw/xxgk/gzdt/zyxw_1/202001/t20200122_11163560.html
- http://wjw.jiangsu.gov.cn/art/2020/1/23/art_7290_8955651.html
- <http://wjw.nmg.gov.cn/doc/2020/01/24/284997.shtml>
- <http://wsjkw.cq.gov.cn/tzgg/20200121/249730.html>
- http://wsjkw.gd.gov.cn/zwyw_yqxx/content/post_2876057.html
- http://wsjkw.gd.gov.cn/zwyw_yqxx/content/post_2877668.html
- <http://wsjkw.hlj.gov.cn/index.php/Home/Zwgk/show/newsid/7698/navid/42/id/3>
- <http://wsjkw.km.gov.cn/c/2020-01-22/3267609.shtml>

- <http://wsjkw.sh.gov.cn/xwfb/20200121/8fa3da87b0014c9db1308c76cbfe835f.html>
- <http://www.bbtnews.com.cn/2020/0122/333568.shtml>
- <http://www.bjnews.com.cn/news/2020/01/22/677946.html>
- <http://www.bjnews.com.cn/news/2020/01/22/678127.html>
- <http://www.bjnews.com.cn/news/2020/01/24/678809.html>
- <http://www.bjnews.com.cn/news/2020/01/24/679099.html>
- <http://www.chinanews.com/sh/2020/01-23/9067672.shtml>
- http://www.cs.com.cn/xwzx/hg/202001/t20200121_6019199.html
- http://www.fcgs.gov.cn/wjw/zwgk/202001/t20200125_93696.html
- <http://www.hebwst.gov.cn/index.do?id=394856&templet=content&cid=14>
- <http://www.nhc.gov.cn/yjb/s3578/202001/930c021cdd1f46dc832fc27e0cc465c8.shtml>
- <http://www.nnnews.net/yaowen/p/3021969.html>
- http://www.sohu.com/a/368573184_120214181
- http://www.sohu.com/a/368942353_114988
- http://www.xinhuanet.com/world/2020-01/24/c_1125498544.htm
- <https://baijiahao.baidu.com/s?id=1656387834433173903&wfr=spider&or=pc>
- <https://baijiahao.baidu.com/s?id=1656427296749156119&wfr=spider&or=pc>
- <https://baijiahao.baidu.com/s?id=1656529973714798234&wfr=spider&or=pc>
- <https://baijiahao.baidu.com/s?id=1656578420184524801&wfr=spider&or=pc>
- <https://baijiahao.baidu.com/s?id=1656593400736651054&wfr=spider&or=pc>
- <https://baijiahao.baidu.com/s?id=1656594579983530961&wfr=spider&or=pc>
- <https://baijiahao.baidu.com/s?id=1656603308265312741&wfr=spider&or=pc>
- <https://baijiahao.baidu.com/s?id=1656603487332867925&wfr=spider&or=pc>
- <https://baijiahao.baidu.com/s?id=1656609616249630455&wfr=spider&or=pc>
- <https://cbgc.scol.com.cn/news/219477>
- <https://focustaiwan.tw/society/202001245001>
- <https://m.weibo.cn/status/4464245485576951?>
- https://mp.weixin.qq.com/s/mgFNlaqPMB-_vNvLRKQmw
- <https://mp.weixin.qq.com/s/Y6KDD39wR8JLonG-N2kJHg>
- <https://new.qq.com/omn/20200125/20200125A01X9500.html>

- <https://new.qq.com/omn/20200125/20200125A06DOX00.html>
- <https://news.163.com/special/epidemic/?spssid=7283291fcdba1d8c2d13ee3da2cfb760&spsw=7&spss=other>
- <https://pr.moph.go.th/?url=pr/detail/2/04/137232/>
- <https://pr.moph.go.th/?url=pr/detail/2/04/137484/>
- <https://tech.sina.com.cn/roll/2020-01-22/doc-iihnzahk5804410.shtml>
- <https://www.cdc.gov/media/releases/2020/p0121-novel-coronavirus-travel-case.html>
- <https://www.channelnewsasia.com/news/asia/wuhan-virus-malaysia-confirms-first-3-cases-all-patients-related-12331172>
- <https://www.channelnewsasia.com/news/singapore/wuhan-virus-pneumonia-singapore-confirms-first-case-12312860>
- <https://www.info.gov.hk/gia/general/202001/21/P2020012100842.htm> and <https://focustaiwan.tw/society/202001210019>
- https://www.mhlw.go.jp/stf/newpage_09079.html
- https://www.mhlw.go.jp/stf/newpage_09100.html
- <https://www.moh.gov.sg/news-highlights/details/two-more-cases-of-confirmed-imported-case-of-novel-coronavirus-infection-in-singapore>
- <https://www.pbs.org/newshour/health/cdc-confirms-second-u-s-case-of-novel-coronavirus-in-chicago>
- <https://www.scmp.com/news/asia/east-asia/article/3047463/china-coronavirus-japan-confirms-second-case-health-ministry>
- <https://www.scmp.com/news/hong-kong/health-environment/article/3047193/china-coronavirus-first-case-confirmed-hong-kong>
- https://www.sinchew.com.my/content/content_2205270.html
- <https://www.theguardian.com/science/2020/jan/25/coronavirus-five-people-in-nsw-being-tested-for-deadly-disease>
- <https://www.thelancet.com/pb-assets/Lancet/pdfs/S0140673620301549.pdf>
- https://www.thepaper.cn/newsDetail_forward_5610903
- https://www.thepaper.cn/newsDetail_forward_5639569
- https://www.washingtonpost.com/world/coronavirus-china-live-updates/2020/01/24/4e678f9c-3e03-11ea-afe2-090eb37b60b1_story.html
- <https://www.who.int/csr/don/14-january-2020-novel-coronavirus-thailand-ex-china/en/>
- <https://www.who.int/csr/don/17-january-2020-novel-coronavirus-japan-ex-china/en/>
- <https://www.who.int/csr/don/21-january-2020-novel-coronavirus-republic-of-korea-ex-china/en/>

Table S1. Changing pattern of travel and contact across mainland China under the COVID-19 outbreak and interventions in 2020, compared to normal travel patterns during CNY holiday in 2014.

Date	Percentage of travel and contact	SD
Before 2020-1-23	100% as normal	-
2020-1-23	90.4%	10.4%
2020-1-24	88.2%	12.6%
2020-1-25	82.3%	17.3%
2020-1-26	86.6%	19.7%
2020-1-27	75.4%	26.6%
2020-1-28	64.7%	28.8%
2020-1-29	53.6%	27.5%
2020-1-30	46.9%	25.1%
2020-1-31	33.7%	17.2%
2020-2-1	29.0%	14.1%
2020-2-2	35.8%	18.0%
2020-2-3	27.1%	13.7%
2020-2-4	19.2%	9.4%
2020-2-5	19.9%	11.2%
2020-2-6	18.5%	12.6%
2020-2-7	20.1%	16.3%
2020-2-8	24.1%	20.8%
2020-2-9	29.6% (last day of extended CNY holiday in most provinces)	25.1%
2020-2-10	21.5%	18.0%
2020-2-11	16.4%	10.8%
2020-2-12	19.7%	13.0%
2020-2-13	18.9%	11.9%
2020-2-14	19.5%	12.5%
2020-2-15	19.4%	13.7%
2020-2-16	19.4%	14.8%
2020-2-17	24.0% (lifting travel restrictions in provinces outside of Hubei)	17.3%
2020-2-18	28.5%	20.9%
2020-2-19	32.8%	24.8%
2020-2-20	34.0%	25.5%
2020-2-21	36.4%	27.5%
2020-2-22	40.5%	29.4%
2020-2-23	39.0%	29.7%
2020-2-24	48.0%	30.9%
2020-2-25	51.2%	31.8%

2020-2-26	56.1%	32.9%
2020-2-27	53.9%	32.7%
2020-2-28	59.2%	32.7%
2020-2-29	57.0%	34.1%

Table S2. The average days from illness onset to report of the first case reported by each county in mainland China.

Date	Median (days)	Inter-quate range (days)	
		q1	q3
2020-1-16	11	10	15
2020-1-17	11	9	13
2020-1-18	11	8	12
2020-1-19	10	8	11
2020-1-20	9	7	10
2020-1-21	8	6.75	9.25
2020-1-22	7	5	9
2020-1-23	6	5	8
2020-1-24	5	3	7
2020-1-25	5	4	6
2020-1-26	4	3	5
2020-1-27	3	2	4
2020-1-28	2	1	4
2020-1-29	2	1	3.5
2020-1-30	2	1	3
2020-1-31	2	1	3

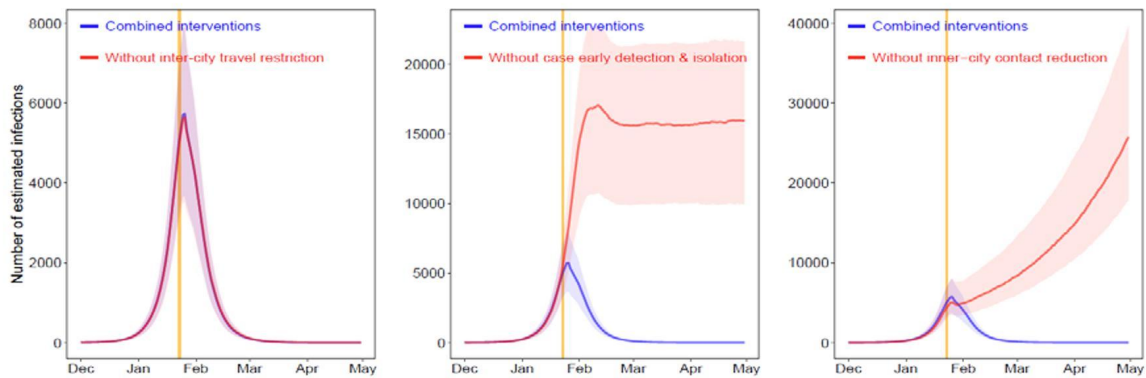


Figure S1: Estimating the COVID-19 epidemic under various scenarios with or without non-pharmaceutical interventions (NPIs) across China. The orange vertical line indicates the date of Wuhan's lockdown on January 23, 2020. The blue lines present estimated transmission under current NPIs. The median and interquartile range of estimates are provided here.

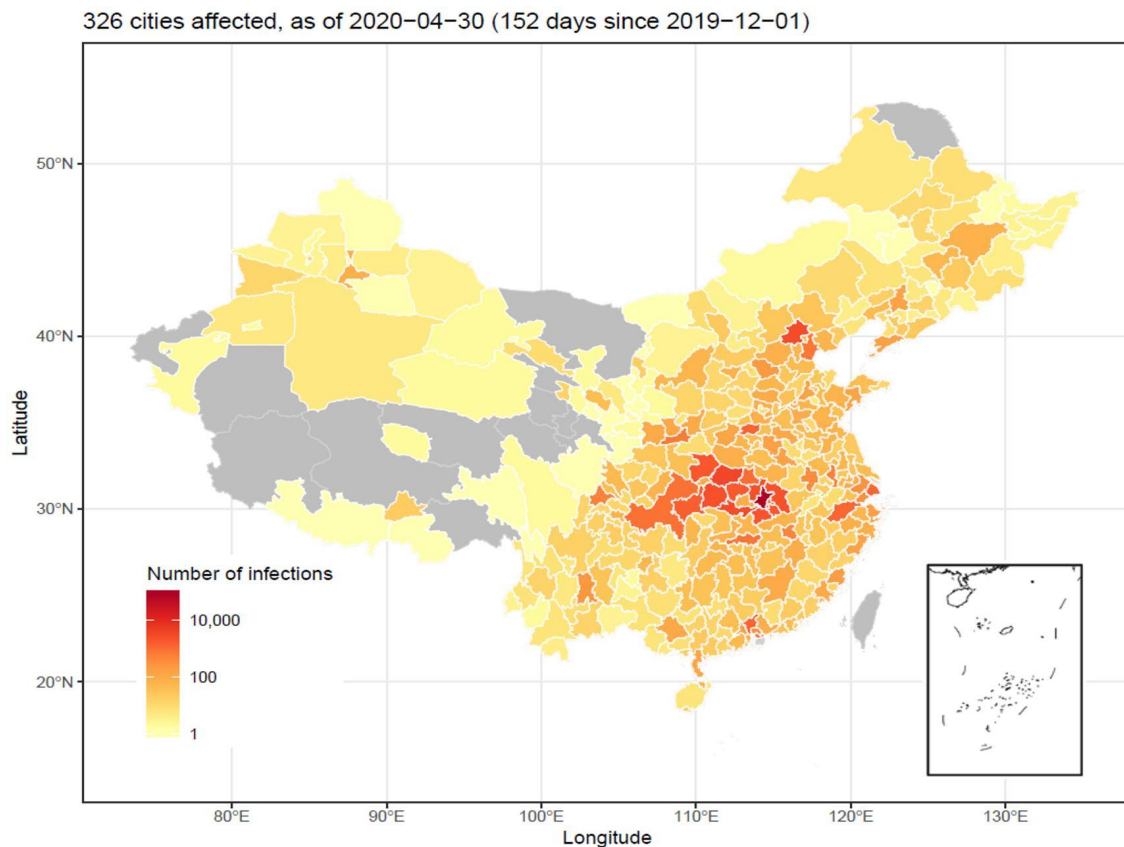


Figure S2: Estimated affected areas of COVID-19 in mainland China as of April 30, 2020, without inter-city travel restrictions.

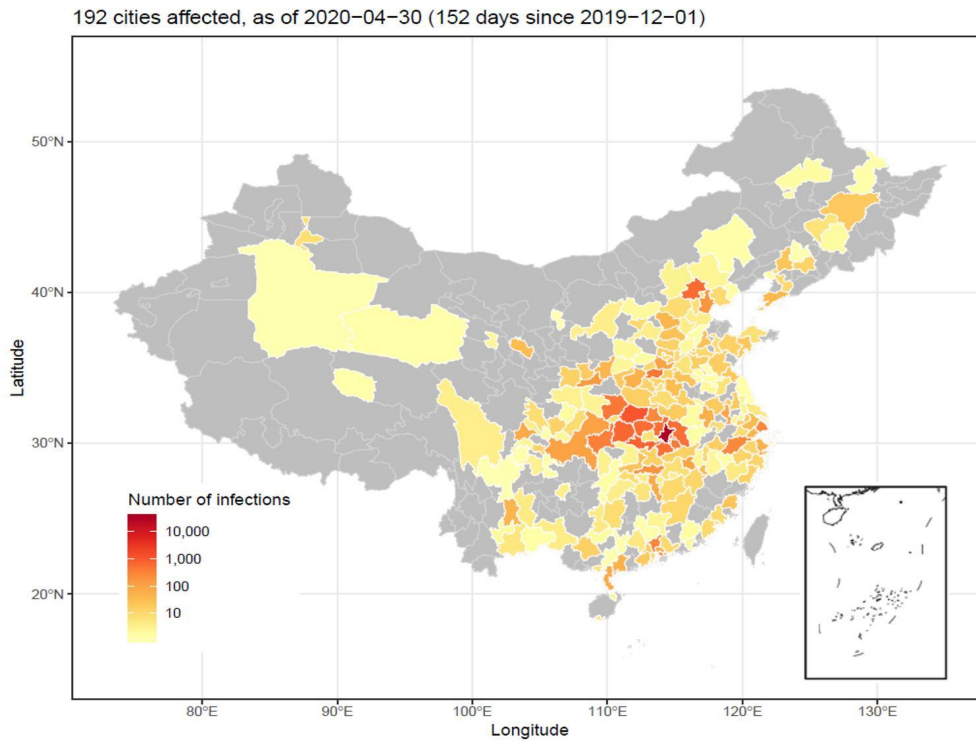


Figure S3: Estimated affected areas of COVID-19 in mainland China under interventions at one weeks earlier than actual timing.

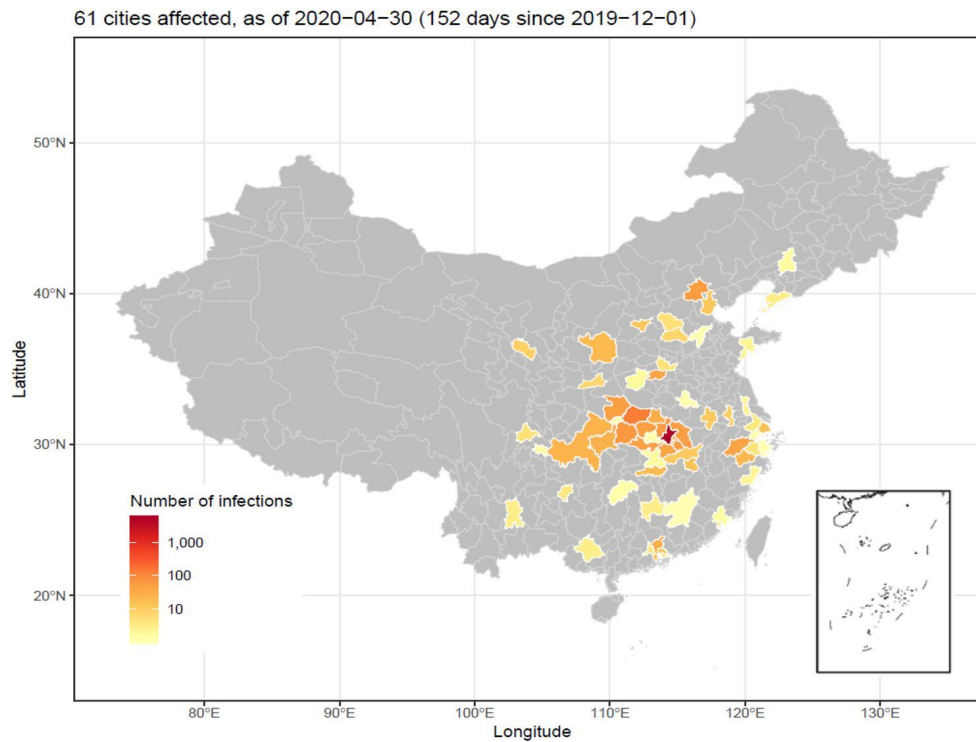


Figure S4: Estimated affected areas of COVID-19 in mainland China under interventions at three weeks earlier than actual timing.

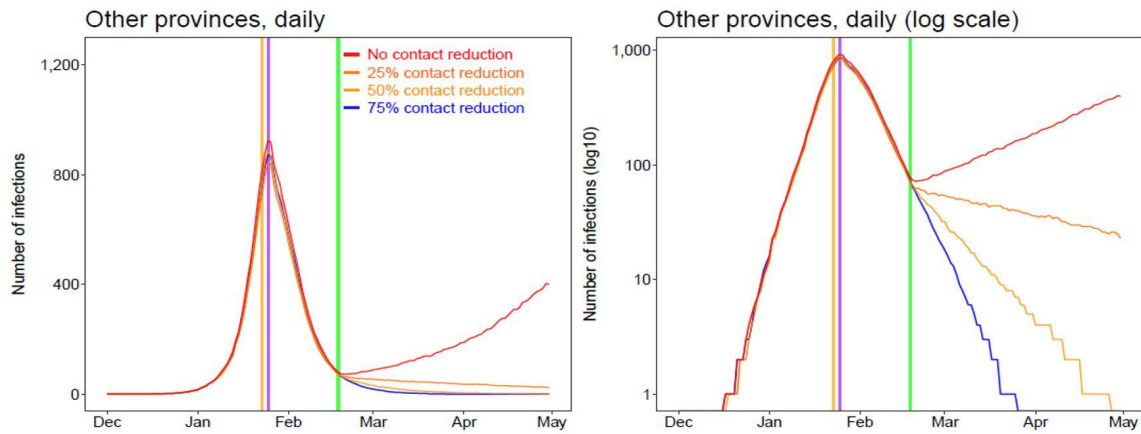


Figure S5: Estimates of the COVID-19 epidemic under various scenarios of contact reduction and lifting travel restrictions in provinces outside of Hubei Province.

We estimated the COVID-19 spread under different population contact rates after lifting inter-city travel restrictions on January 17, 2020. All other parameters, NPIs and input data were the same as the baseline model with $R_0 = 2.2$. Vertical lines: orange – date of Wuhan’s lockdown; purple - CNY’s day; green – date of lifting of travel restrictions.

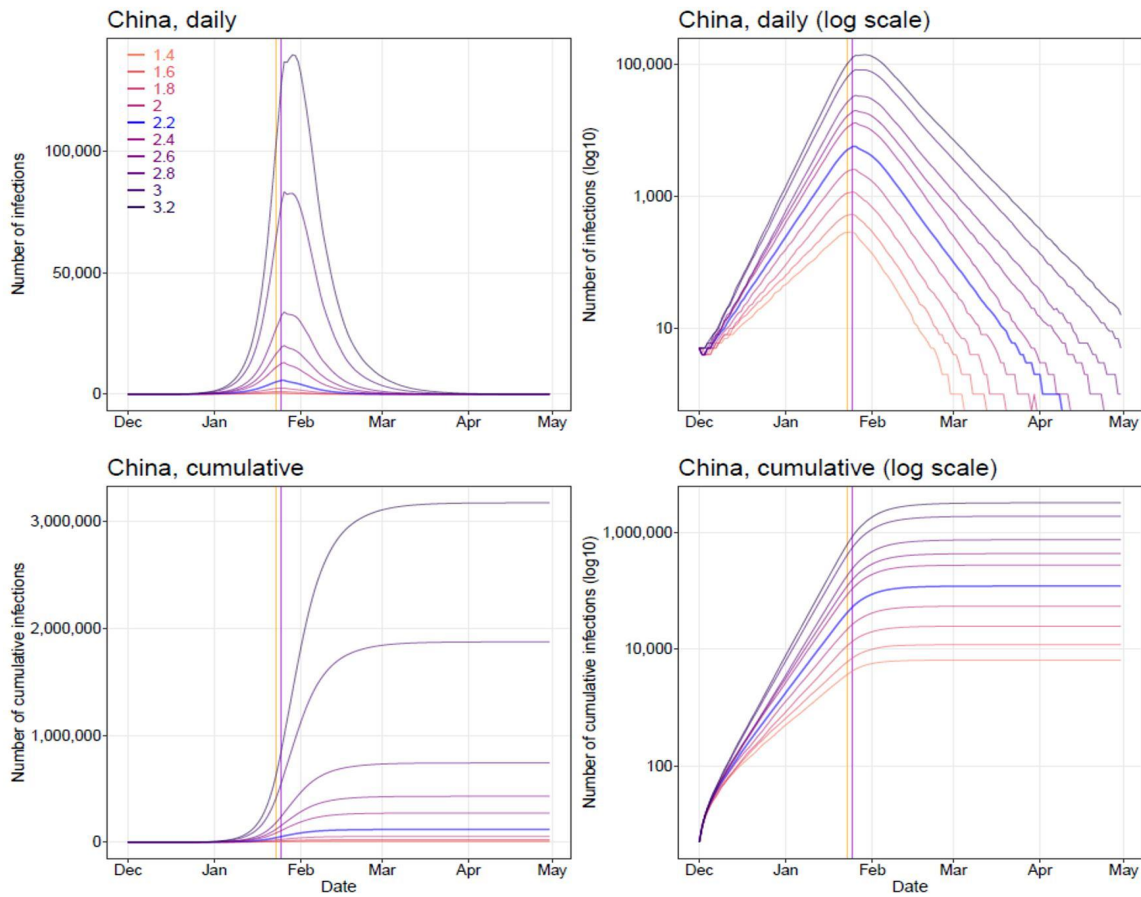


Figure S6: Sensitivity of estimates of COVID-19 epidemics under various values of R_0 .

All other parameters, NPIs and input data were the same as the baseline model with $R_0 = 2.2$. Vertical lines: orange – date of Wuhan's lockdown; purple - CNY's day.

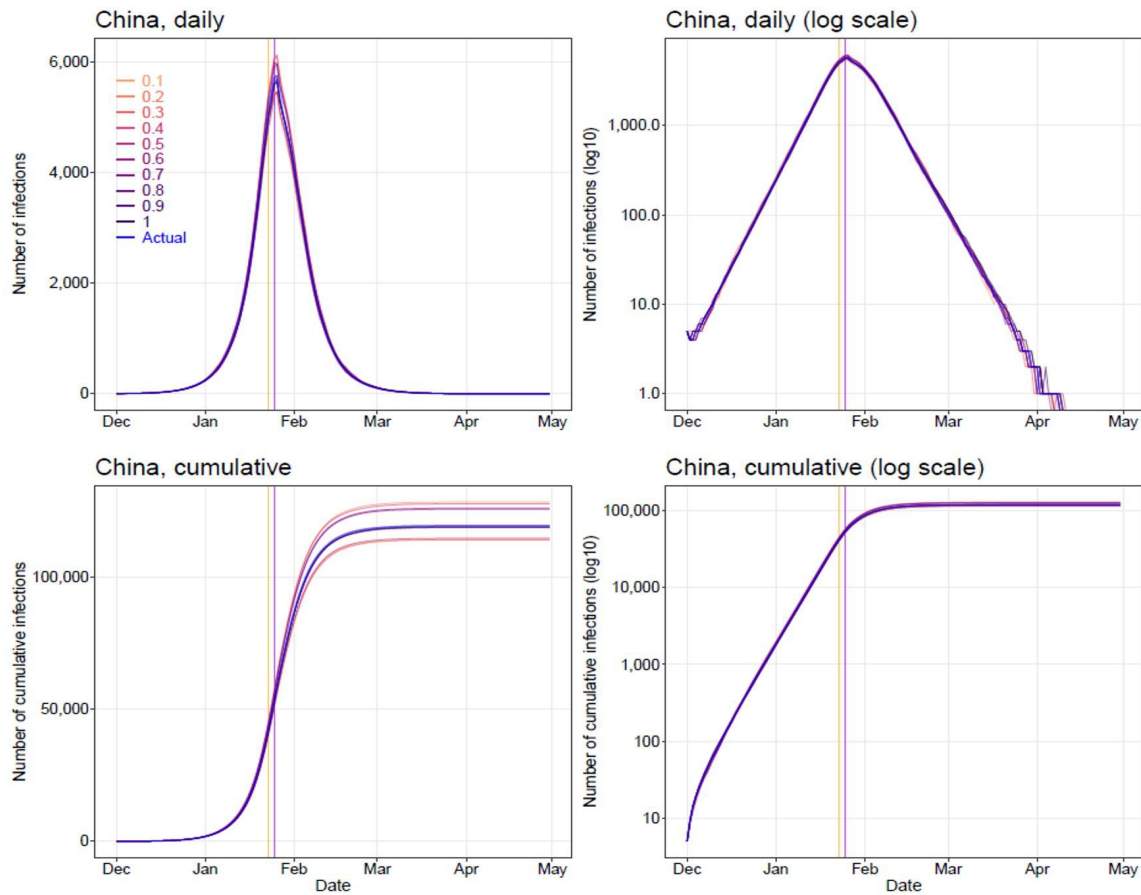


Figure S7: Sensitivity of estimates of COVID-19 epidemics under various levels of inter-city travel restrictions.

All other parameters, NPIs and input data were the same as the baseline model with $R_0 = 2.2$. The actual percentages of inter-city travel restrictions changed day-by-day across cities in China (0.1 means 90% reduction from normal travel, 1 means no travel restrictions). Vertical lines: orange – date of Wuhan's lockdown; purple - CNY's day.

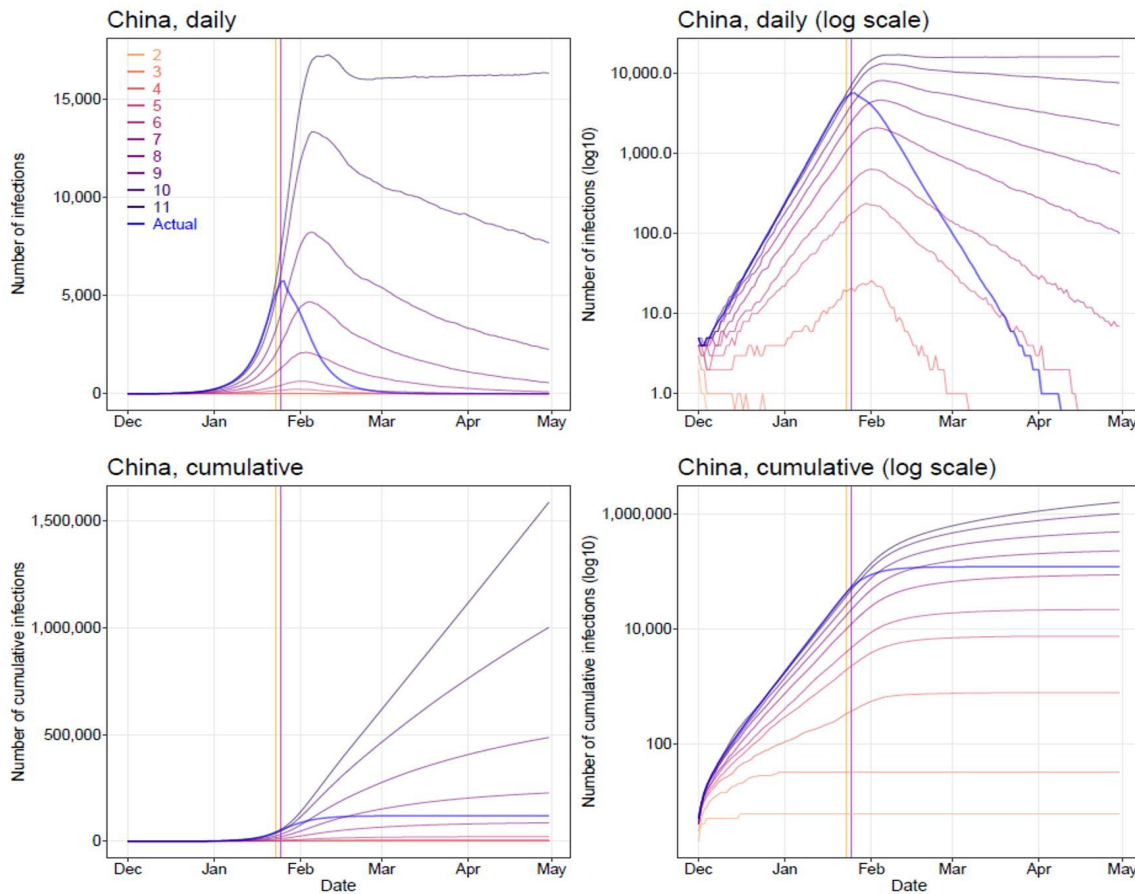


Figure S8: Sensitivity of estimates of COVID-19 epidemics under various numbers of days from illness onset to report/isolation.

All other parameters, NPIs and input data were the same as the baseline model with $R_0 = 2.2$. The actual delays of illness onset to report/isolation changed day-by-day (appendix Table S2). Vertical lines: orange – date of Wuhan's lockdown; purple - CNY's day.

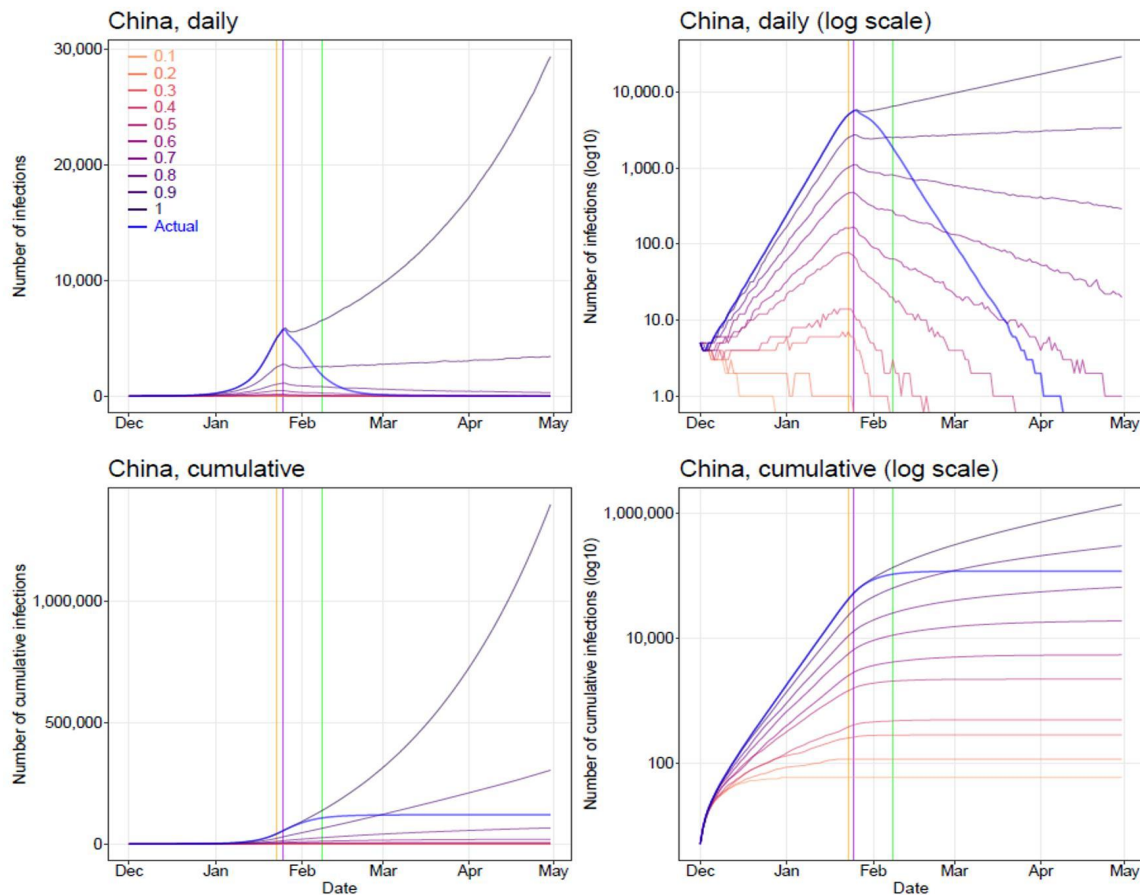


Figure S9: Sensitivity of estimates of COVID-19 epidemics under various contact rate values.

All other parameters, NPIs and input data were the same as the baseline model with $R_0 = 2.2$. The actual percentage of population contact (0.1 means 10% contact as usual, 1 means no contact restrictions) changed day-by-day across the country (appendix Table S1). Vertical lines: orange – date of Wuhan's lockdown; purple - CNY's day.

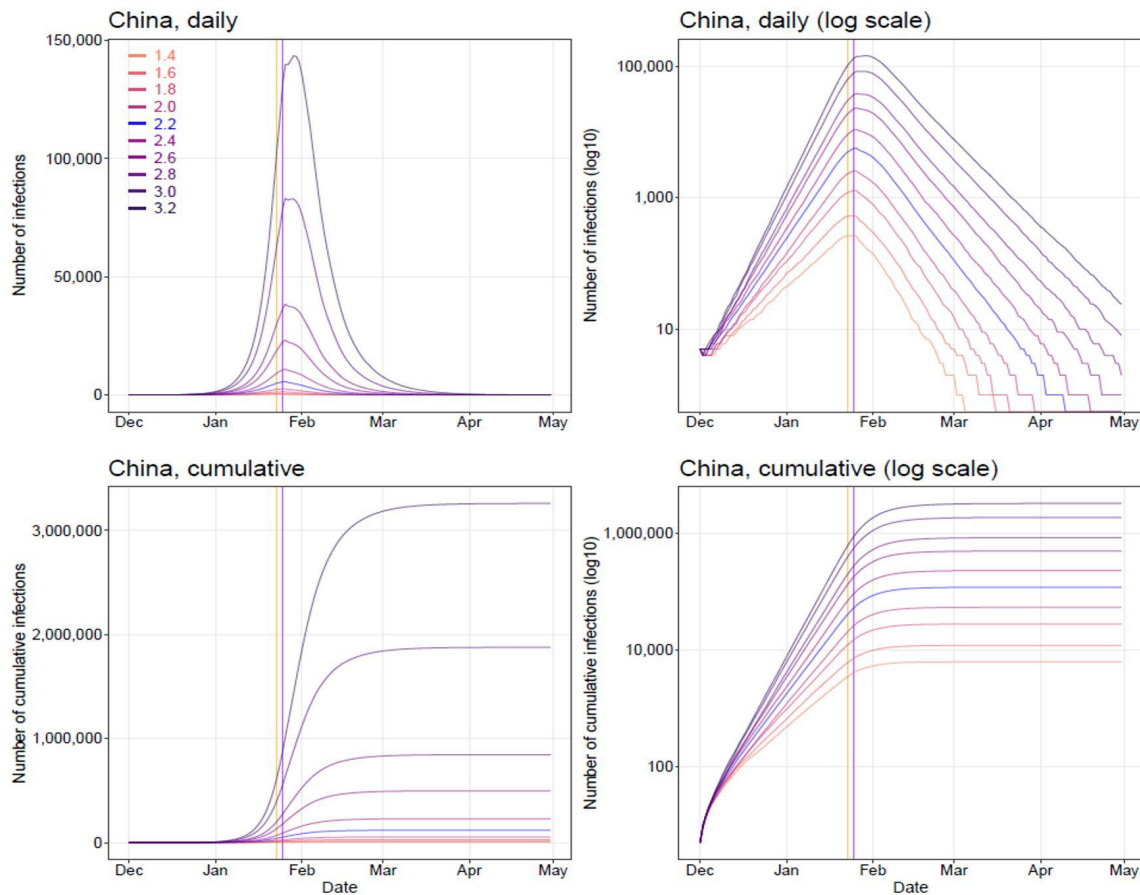


Figure S10: Sensitivity of estimates of COVID-19 epidemics under various values of R_0 and without inter-city travel restrictions. All other parameters, NPIs and input data were the same as the baseline model with $R_0 = 2.2$. Vertical lines: orange – date of Wuhan's lockdown; purple - CNY's day.

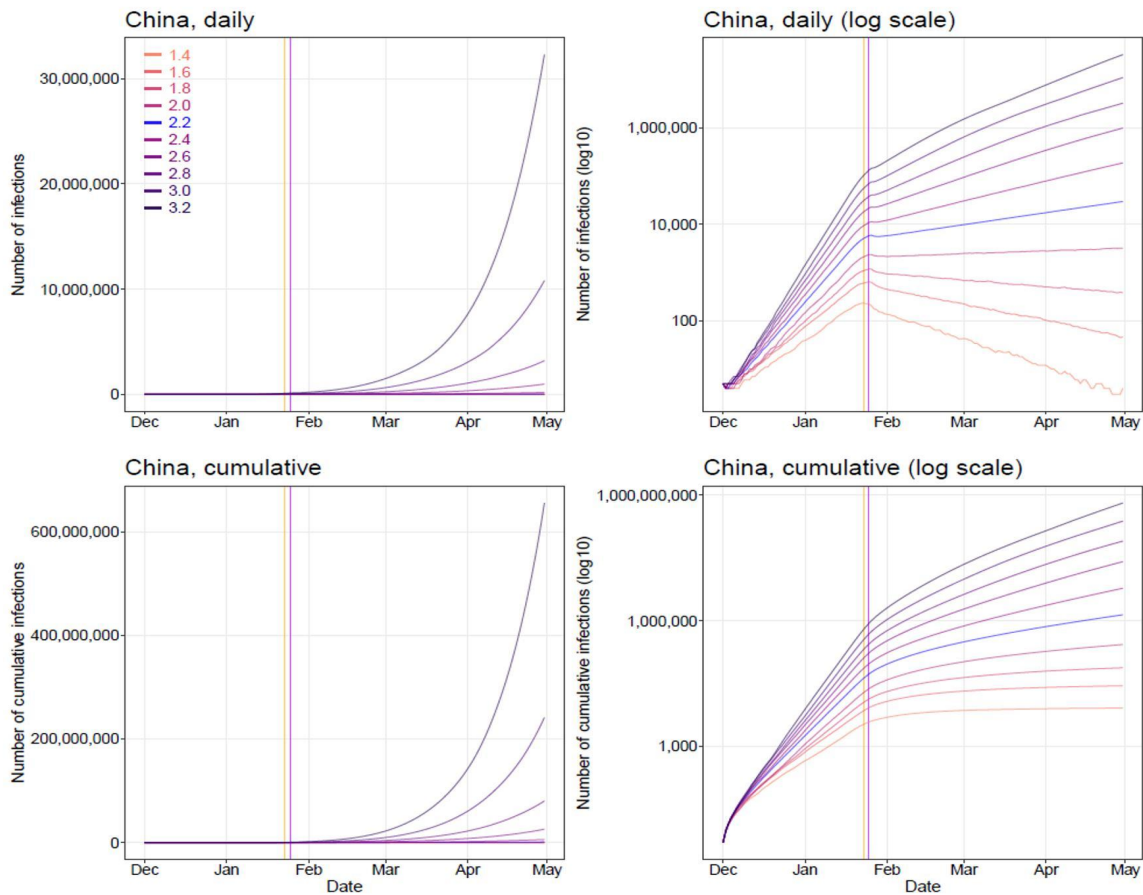


Figure S11: Sensitivity of estimates of COVID-19 epidemics under various values of R_0 but without the intervention of inner-city contact restrictions.

All other parameters, NPIs and input data were the same as the baseline model with $R_0 = 2.2$. Vertical lines: orange – date of Wuhan's lockdown; purple - CNY's day.

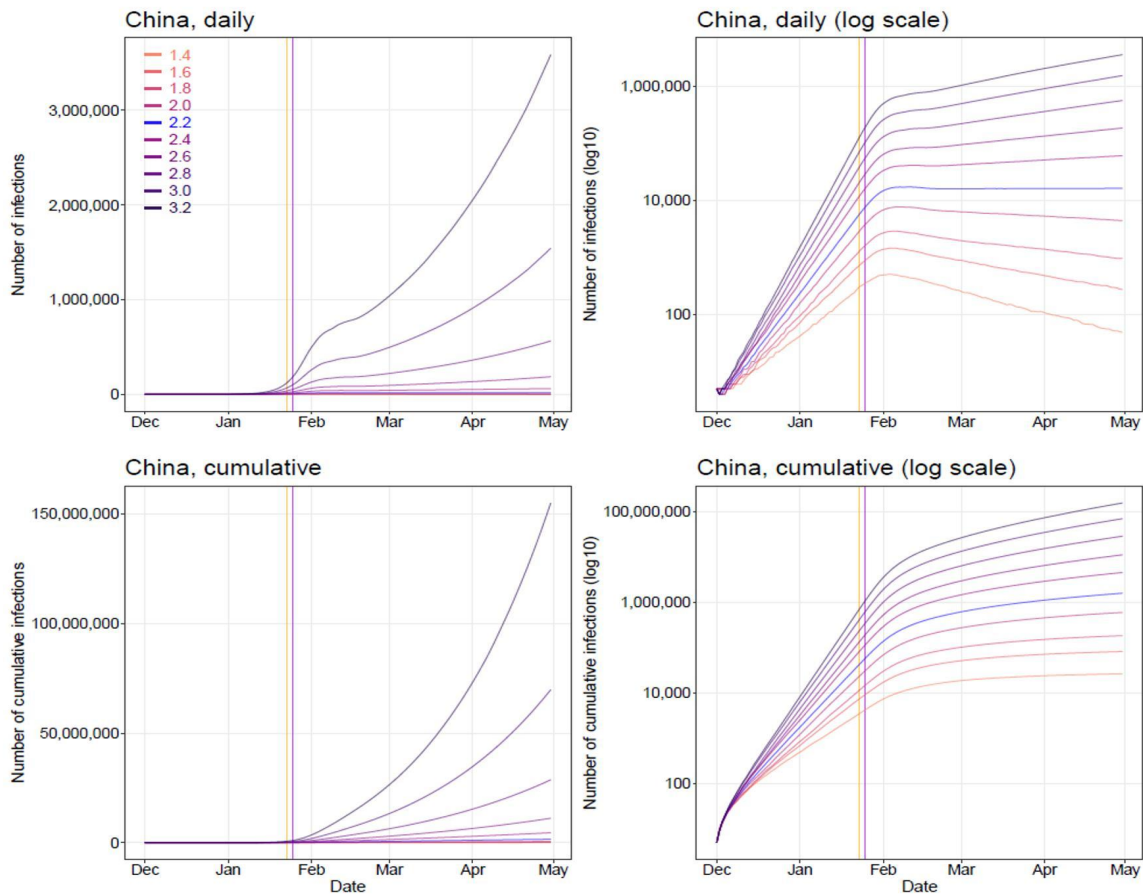


Figure S12: Sensitivity of estimates of COVID-19 epidemics under various values of R_0 but without improved timeliness of case detection and isolation.

The delay from illness onset to detection and isolation was set as a constant of 11 days as that on January 16-18, 2020. All other parameters, NPIs and input data were the same as the baseline model with $R_0 = 2.2$. Vertical lines: orange – date of Wuhan's lockdown; purple - CNY's day.

Reference

1. Novel Coronavirus Pneumonia Emergency Response Epidemiology Team. The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19) in China. Chinese Journal of Epidemiology 2020; 41(2): 145-51. doi: 10.3760/cma.j.issn.0254-6450.2020.02.003
2. Zhang J, Litvinova M, Wang W, et al. Evolving epidemiology of novel coronavirus diseases 2019 and possible interruption of local transmission outside Hubei Province in China: a descriptive and modeling study. medRxiv 2020: 2020.02.21.20026328. doi: 10.1101/2020.02.21.20026328
3. Lai S, Bogoch II, Watts A, Khan K, Li Z, Tatem A. Preliminary risk analysis of 2019 novel coronavirus spread within and beyond China. 2020. <https://www.worldpop.org/events/china> (accessed 1 February 2020).

From: Duchin, Jeff
Sent: Tuesday, March 3, 2020 7:30 AM PST
To: Dan Jernigan (dbj0@cdc.gov)
CC: Kathy Lofy (Kathy.Lofy@DOH.WA.GOV); Jernigan, John A.
BCC: Onora Lien; Timothy H. Dellit; Duchin, Jeff; Hayes, Patty; Worsham, Dennis; Kay, Meagan; Burkland, Anne
Subject: Request for Flexibility in PPE and IC Guidance for HCW
Attachments: COVID-19 infection prevention in healthcare setting 3.2.2020_UW_NWHRN.pdf

Dear Dan,

On behalf of Dr. Kathy Lofy, Health Officer, Washington State Department of Health and myself, please see the attached letter from our main front line acute care hospital system responding to the COVID-19 outbreak in King County, Washington. Even the relatively limited number of cases at this time, the hospitals are feeling they cannot comply with the requirement for respirator use for the care of suspected and confirmed COVID-19 cases due to supply constraints which are expected to worsen. In addition, the recommendation to furlough asymptomatic HCW exposed to COVID-19 cases would require them to curtail critical care services.

UW Medicine consists of University of Washington Medical Center, Harborview Medical Center, and Valley Medical Center with Harborview Medical Center serving as the King County Disaster Control Hospital and designated Ebola Treatment Facility. UW Medicine admits more than 63,000 patients per year and provides outpatient care for more than 1.3 million patients each year at its 14 UW Neighborhood Clinics and its many other primary and specialty care clinics. Seattle Cancer Care Alliance is a collaborative partnership of UW Medicine, Fred Hutchinson Cancer Research Center, and Seattle Children's Hospital.

The Northwest Healthcare Response Network is our regional healthcare coalition comprised of 70% of the state's hospital beds, nearly 3,000 healthcare organizations and 178,000 healthcare workers and is a key partner with Public Health in coordinating and implementing public health and healthcare system emergency response activities.

Our healthcare system colleagues are committed to providing the highest level of care and safety for both patients and healthcare providers and feel that guidance reflecting real world conditions would be more conducive that goal than guidance that is not possible to comply with.

Thank you for your consideration of this request for flexibility in this critical guidance.

Sincerely,

Jeff

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Disease Epidemiology & Immunization Section
Public Health - Seattle and King County
Professor in Medicine, Division of Infectious Diseases, University of Washington
Adjunct Professor, School of Public Health
401 5th Ave, Suite 1250, Seattle, WA 98104
Tel: (206) 296-4774; Direct: (206) 263-8171; Fax: (206) 296-4803

E-mail: jeff.duchin@kingcounty.gov

March 2, 2020

Kathy Lofy, MD
State Health Officer
Washington State Department of Health

Jeffrey S. Duchin, MD
Health Officer and Chief, Communicable Diseases Epidemiology & Immunization Section
Public Health – Seattle and King County

Dear Drs. Lofy and Duchin,

We write to request your support in changing the Interim Infection Prevention and Control Recommendations for Patients with suspected or confirmed Coronavirus Disease 2019 (COVID-19) to Standard, Droplet, and Contact Precautions to include the use of masks, eye protection, gown, and gloves while using airborne precautions with use of respirators when performing aerosol-generating procedures as recommended by the World Health Organization, Infection Prevention and Control Canada, and other countries.

COVID-19 is transmitted person to person through respiratory droplets created when individuals cough or sneeze similar to other respiratory viruses. Recent community cases of COVID-19 have not had relevant travel history nor known contact with an individual with confirmed COVID-19. Given the presence of local community transmission of COVID-19 and continued transmission of other respiratory viruses such as influenza, it is difficult to clinically identify individuals with potential COVID-19 from an individual without COVID-19 when they present with fever and respiratory symptoms.

Given the lack of airborne isolation rooms in clinics and the limited number of airborne isolation rooms in hospitals combined with shortages in personal protective equipment (PPE), we cannot manage the increasing numbers of patients presenting with possible COVID-19 and are creating more risk for our healthcare workers given the complexities of the current CDC recommendations. It will be safer for our healthcare workers to consistently use Standard, Droplet, and Contact Precautions for all patients presenting with fever and respiratory symptoms.

While we support the initial approach with Standard, Contact, and Airborne precautions with eye protection for a novel pathogen with few potential cases that we identify from an epidemiology standpoint, we are in the midst of a public health crises with anticipated large numbers of patients that will overwhelm our health systems. **We urge you to focus on how SARS-CoV-19 is transmitted similarly to**

other respiratory viruses and change the recommendations to use of Standard, Droplet, and Contact Precautions reserving airborne isolation and use of respirators for aerosol-generating procedures as recommended by WHO, Canada, and other countries.

In addition, we request a change in guidance requiring keeping asymptomatic exposed healthcare workers out of work for 14 days from last exposure as we are rapidly depleting our workforce with this recommendation. **We urge you to consider allowing asymptomatic healthcare workers to continue to work while doing symptom self-monitoring as we do with other respiratory viruses including influenza.**

Thank you for your consideration,



Timothy H. Dellit, MD
Chief Medical Officer, UW Medicine
Vice President for Medical Affairs
University of Washington
President, UW Physician



Onora Lien
Executive Director
Northwest Healthcare Response Network



Nancy E. Davidson, MD
President & Executive Director, Seattle Cancer Care Alliance
Senior Vice President and Member, Clinical Research Division, Fred Hutchinson Cancer Research Center
Head, Department of Medicine, Division of Medical Oncology, University of Washington
Raisbeck Endowed Chair for Collaborative Research