



Case No. 2020-00717-FOIA-OS
American Oversight v. HHS, Civil No. 20-1169

July 7, 2021

Austin Evers
Executive Director
American Oversight
Sent via email: foia@americanoversight.org

Dear Mr. Evers:

This letter is the second interim response to your March 18, 2020, Freedom of Information Act (FOIA) request.

American Oversight requests that HHS produce the following records as soon as practicable, and at least within twenty business days:

All email communications (including email messages, complete email chains, email attachments, calendar invitations) sent by the government officials specified below containing any of the following key terms:

1. Coronavirus
2. Corona
3. Virus
4. Disease
5. Pandemic
6. Epidemic
7. Outbreak
8. containment
9. "public health emergency"
10. "COVID-19"
11. "COVID 19"
12. COVID19
13. SARS
14. "2019-nCoV"
15. POTUS
16. Test
17. Tests
18. Testing
19. EUA
20. Emergency
21. Wuhan
22. Hoax
23. Hubei
24. Princess
25. Cruise
26. Kirkland
27. Seattle
28. "New Rochelle"
29. "BioGen Conference"
30. CPAC
31. AIPAC
32. RNA
33. "Extraction kits"

34. Roche
35. Vaccine
36. Antiviral
37. Antiretroviral
38. Quarantine
39. Distancing
40. Isolation
41. N95
42. Mask
43. Respirator

Government Officials

1. Alex Azar, Secretary
2. Brian Harrison, Chief of Staff
3. Eric Hargan, Deputy Secretary
4. Jerome Adams, Surgeon General
5. Robert Kadlec, Assistant Secretary for Preparedness and Response
6. John Brooks, Senior Advisor to the Secretary for Drug Pricing Reform

On February 10, 2021, you narrowed your request per the following:

Eliminate attachments, documents regarding “Red Dawn” and obvious marketing and news bulletins

- a. Limit the date range of the following key terms as stand-alone search terms from January 15, 2020 through February 29, 2020. ~~[[Limit responsive records to those that also include: (Test OR Tests OR Vaccine OR EUA OR “Emergency Use” OR Shortage OR Shortages OR Supplies OR “the WHO” OR States OR Governor OR Governors OR PPE OR Ventilators OR Respirators OR Swabs OR DPA OR “Defense Production Act” OR Trump OR Pence OR Jared OR Kushner OR “White House” OR “the WH”)]]~~

- i. Coronavirus
- ii. Corona
- iii. “COVID-19”
- iv. “COVID 19”
- v. COVID19
- vi. “2019-nCoV”

~~vii. SARS~~

~~viii. Epidemic~~

~~ix. Pandemic~~

~~x. Outbreak~~

~~xi. “Public Health Emergency”~~

-

- b. After March 1, 2020, for the key terms listed in Column A below (the same search terms as identified above), limit responsive records to those that also include one or more of the terms from Column B:

Column A	Column B
• Coronavirus • Corona • “COVID-19” • “COVID 19” • COVID19 • “2019-nCoV” • SARS • Epidemic • Pandemic • Outbreak • “Public Health Emergency”	• Test • Tests • Vaccine • Antiviral • Antiretroviral • EUA • “Emergency Use” • Shortage • Shortages • Supplies • “Emergency Use” • EUA • “the WHO” • “W.H.O.” • “World Health Organization” • States • Governor • Governors • PPE • Ventilators • Respirators • Swabs • DPA • “Defense Production Act”

- c. For the key terms that are in Column A below, limit responsive records to those that also include one or more of the terms from Column B, for the full time period of the search.

Column A	Column B
• Test • Tests • “Extraction Kits”	• CV19 • “CV-19” • C19 • “C-19” • Roche • RNA • Shortage • Shortages • Supplies • “Emergency Use” • “EUA” • “the WHO” • “W.H.O.” • “World Health Organization” • States • Governor • Governors • Kit • Kits • DPA • “Defense Production Act”

- d. ~~[~500 records] For the key terms that are in Column A below, limit responsive records to those that also include one or more of the terms from Column B, for the full time period of the search.~~

Column A	Column B
---------------------	---------------------

• Vaccine • Antiviral • Antiretroviral	• CV19 • “CV-19” • C19 • “C-19” • “EUA” • “Emergency Use” • “DPA” • “Defense Production Act” • “the WHO” • “W.H.O.” • “World Health Organization”
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e. ~~[~50 records] For the key term “Emergency” limit responsive records to those that also include “DPA” or “Defense Production Act,” for the full time period of the search.~~

f. For the following key terms, please limit the time period as indicated:

i. Princess - February 1, 2020, through March 1, 2020 ~~[[Limit responsive records to those that also include: Trump OR Pence OR Jared OR Kushner OR “White House” OR “the WH”]]]~~

~~ii. [~150 records] Kirkland - February 24, 2020, through March 24, 2020~~

~~iii. [~750 records] Seattle - February 24, 2020, through March 24, 2020~~

~~iv. [~200 records] “New Rochelle” - March 1, 2020, through March 31, 2020~~

~~v. [~~<50 records~~] “BioGen Conference” - March 1, 2020, through March 31, 2020~~

~~vi. [~~<50 records~~] CPAC - February 21, 2020, through March 21, 2020~~

~~vii. [~~<50 records~~] AIPAC - February 21, 2020, through March 21, 2020~~

g. For the following key terms, please run the search without any modifiers and using the full date range (i.e., no changes from original search)

i. Wuhan ~~[[Limit responsive records to those that also include: Trump OR Pence OR Jared OR Kushner OR “White House” OR “the WH”]]]~~

ii. Hoax ~~[[no changes]]~~

iii. Hubei ~~[[Limit responsive records to those that also include: Trump OR Pence OR Jared OR Kushner OR “White House” OR “the WH”]]]~~

iv. POTUS ~~[[no changes]]~~

v. Cruise ~~[[Limit responsive records to those that also include: Trump OR Pence OR Jared OR Kushner OR “White House” OR “the WH”]]]~~

vi. Quarantine ~~[[Limit responsive records to those that also include: Trump OR Pence OR Jared OR Kushner OR “White House” OR “the WH”]]]~~

vii. Distancing ~~[[Limit responsive records to those that also include: Trump OR Pence OR Jared OR Kushner OR “White House” OR “the WH”]]]~~

~~viii. Isolation~~

ix. N95 ~~[[Limit responsive records to those that also include: (CV19 OR “CV-19” OR C19 OR “C-19” OR Shortage OR Shortages OR Supplies OR “Emergency Use” OR “EUA” OR “the WHO” OR States OR Governor OR Governors OR DPA OR “Defense Production Act” OR Trump OR Pence OR Jared OR Kushner OR “White House” OR “the WH”]]]~~

x. Mask ~~[[Limit responsive records to those that also include: (CV19 OR “CV-19” OR C19 OR “C-19” OR Shortage OR Shortages OR Supplies OR “Emergency Use” OR “EUA” OR “the WHO” OR States OR Governor OR Governors OR DPA OR “Defense Production Act” OR Trump OR Pence OR Jared OR Kushner OR “White House” OR “the WH”]]]~~

xi. Respirator ~~[[Limit responsive records to those that also include: (CV19 OR “CV-19” OR C19 OR “C-19” OR Shortage OR Shortages OR Supplies OR “Emergency Use” OR “EUA” OR “the WHO” OR States OR Governor OR Governors OR DPA OR “Defense Production Act” OR Trump OR Pence OR Jared OR Kushner OR “White House” OR “the WH”]]]~~

xii. Testing ~~[[Limit responsive records to those that also include: (CV19 OR “CV-19” OR C19 OR “C-19” OR Shortage OR Shortages OR Supplies OR “Emergency Use” OR “EUA” OR “the WHO” OR States OR Governor OR Governors OR DPA OR “Defense Production Act” OR Trump OR Pence OR Jared OR Kushner OR “White House” OR “the WH”]]]~~

~~xiii. Containment~~

h. Cut the following key terms completely: [[no changes]]

i. Disease

ii. Virus

The Department processed **404 pages** of potentially responsive records captured in the agency's search for FOIA request 2020-00717-FOIA-OS. After a careful review of these pages, I have determined to release **197 pages** to you in their entirety and I am further releasing **136 pages** in part, with portions redacted, pursuant to Exemptions (b)(5), and (b)(6) of the FOIA (5 U.S.C. §552 (b)(5) and (b)(6)). Furthermore, I have determined that **71 pages** should be sent for consultation to others and returned to this Department for final disposition.

FOIA exemption (b)(5) protects inter-agency or intra-agency memoranda or letters which would not be available by law to a party other than an agency in litigation with the agency. This exemption protects documents that would be covered by any privilege an agency could assert in a civil proceeding. These privileges include, among others, the deliberative process privilege, the attorney-client privilege, the attorney work-product privilege and the presidential communications privilege.

FOIA exemption (b)(6) permits a Federal agency to withhold information and records about individuals in "personnel and medical files and similar files, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy." The definition of "similar files" has historically been broadly interpreted to include a wide variety of files, and the United States Supreme Court has held that Congress intended the term "similar files" to be interpreted broadly, rather than narrowly. I have analyzed these records and find they meet the threshold requirement of this exemption. Additionally, I have reviewed and weighed the public interest in disclosure of this information against the privacy interest in nondisclosure, and found that the privacy interest outweighs the public's interest in disclosure.

We will continue to review the remaining records as efficiently and expeditiously as possible, consistent with our available resources. Should you have questions or concerns regarding the Department's response and/or the processing of your request, any such issues should be communicated to your legal counsel and Department of Justice Attorney representing the Department in this matter.

Sincerely yours,



Alesia Y. Williams
Director, FOIA Appeals and Litigations
FOI/Privacy Act Division

Enclosure(s)

From:	Richard Hatchett <richard.hatchett@cepi.net>
To:	Lawler, James V (b)(6)@unmc.edu> Carter Mecher <(b)(6)@charter.net>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd.
CC:	Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)@me.com>
Subject:	Re: VA Projections using Cruise Ship Data
Date:	2020/03/01 01:34:42
Priority:	Normal
Type:	Note

1st Australia death is a Diamond Princess passenger.

Sent from my iPhone

On 1 Mar 2020, at 04:06, Lawler, James V (b)(6)@unmc.edu> wrote:

Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Date: Saturday, February 29, 2020 at 6:53 PM
To: "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>
Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <duane.caneva@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is $1\% \times 5\% = 0.05\%$. But it takes 2 weeks or so before a patient who is infected becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\% / 8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

Sent from [Mail \[go.microsoft.com\]](mailto:go.microsoft.com) for Windows 10

From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Callahan, m." (b)(6)@mgh.harvard.edu>

Date: Saturday, February 29, 2020 at 2:39 PM

To: "Lawler, James V" (b)(6)@unmc.edu>

Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Carter Mecher (b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Caneva, Duane" (b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better than poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital
Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V <(b)(6)@unmc.edu> wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: "Marcozzi, David" <(b)(6)@som.umaryland.edu>
Date: Saturday, February 29, 2020 at 5:11 AM
To: "Lawler, James V" <(b)(6)@unmc.edu>, Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
Associate Professor
Associate Chair of Population Health

Department of Emergency Medicine
University of Maryland School of Medicine
<https://em.umaryland.edu> [em.umaryland.edu]

Associate Professor
Department of Epidemiology and Public Health
University of Maryland School of Medicine
<https://www.medschool.umaryland.edu/epidemiology/> [medschool.umaryland.edu]

Assistant Chief Medical Officer for Acute Care
University of Maryland Medical Center
<http://www.umm.edu> [umm.edu]

Deputy Medical Director for Mobile Integrated Health/Community Paramedicine
Baltimore City Fire Department
<https://protect2.fireeye.com/url?k=d9510168-8504087b-d9513057-0cc47adb5650-6aa2e3e7eb8d9891&u=https://fire.baltimorecity.gov/mobile-integrated-health-community-paramedicine>
[fire.baltimorecity.gov]

Mailing Address:
6th floor, Suite 200
110 South Paca Street
Baltimore, Maryland 21201
(667)-214-2208 (office)

(b)(6) @som.umaryland.edu

Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson

From: James Lawler (b)(6)@unmc.edu
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi <(b)(6)@som.umaryland.edu>, "matthew. hepburn" (b)(6)@mail.mil>, Duane Caneva (b)(6)@hq.dhs.gov>, Robert Kadlec <Robert.Kadlec@hhs.gov>, (b)(6)@mgh.harvard.edu" (b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation

Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m: (b)(6)
(b)(6)@unmc.edu

<image001.png>

From: Carter Mecher <cmecher@charter.net>

Sent: Friday, February 28, 2020 3:06:10 PM

To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>;
Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA)
(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert
(OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D.
<(b)(6)@mgh.harvard.edu>; Tom Bossert <(b)(6)@me.com>

Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%

70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	100%	3,672	100%	19,209,704	100%

The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101

ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- 600,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		

10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in IC
13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 tes
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill asymptomatic

26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134
75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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Sender:	Richard Hatchett <richard.hatchett@cepi.net>
Recipient:	Lawler, James V <(b)(6)@unmc.edu>; Carter Mecher <cmecher@charter.net>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)@me.com>
Sent Date:	2020/03/01 01:33:45
Delivered Date:	2020/03/01 01:34:42

From:	The Alchemist (b)(6)@gmail.com>
To:	Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd.ative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=16ecd42585564abea7003ada035df689-missiratch.>; Ibrahim, Amna (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddefd991104249dd83c6586bfc7c19e-amna.ibrahi>; Beaver, Julia (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a05286b19a7b4895a71b9d1087666b25-julia.beave>; <Norman.Sharpless@fda.hhs.gov>; Azar, Alex (OS/IOS) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cd4875f6a7414810934ed443c7f34740-Azar, Alex>; Fauci, Anthony (NIH/NIAID) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=826965b24a314ffca7eddc6e8229aa7-anthony.fau>; <michael.strong@cihr-irsc.gc.ca>; Langevin, Helene (NIH/NCCIH) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=27585df077174daf87a437e2b492ea2b-helene.lang>; Lowy, Douglas (NIH/NCI) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=aad7e8b13b6740959f2bec763a1a3217-douglas.low>; Keegan, Patricia (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2c9b1a0f14e84a819dcddf7a997a9999-patricia.ke>
Subject:	Re: COVID-19 [presidential mistakes...]
Date:	2020/03/01 01:48:21
Priority:	Normal
Type:	Note

umm, the president said the person who died was a female

but the washington state person Dr Jeff Duchine said it was a male

<https://www.cnn.com/2020/02/29/health/face-masks-coronavirus-surgeon-general-trnd/index.html>

Trump updates media after first US coronavirus death

President Donald Trump updates the media following the first confirmed death in the US due to the coronavirus. Although the President referred to the patient as a woman in her fifties, officials clarified that the deceased person was a male.[Source: CNN](#)

On Sun, Mar 1, 2020 at 1:34 AM The Alchemist <conventherbal@gmail.com>wrote:
The test will not be available in U.S. hospitals or other primary care settings.

On Monday, February 3, 2020, CDC submitted an Emergency Use Authorization (EUA) package to the U.S. Food and Drug Administration (FDA) in order to expedite FDA permitted use of the CDC diagnostic panel in the United States. The EUA process enables FDA to consider and authorize the use of unapproved, but potentially life-saving medical or diagnostic products during a public health

emergency. The U.S. Secretary of Health and Human Services declared the SARS-CoV-2 virus a U.S. public health emergency on Friday, January 31, 2020. FDA issued the EUA on February 4, 2020.

<https://www.cdc.gov/coronavirus/2019-ncov/about/testing.html>

-

that was my concern, that firstly

the hospitals don't have an 'approved' way to diagnose, if they are depending on CDC

I am sure the hospitals are smart enough to figure out how to detect it

but even if they do detect it, is that information making it back...

-

Anyways I told you a month ago, my herbal remedy has already cured a person.

This person directly confirmed the story to Dr Fauci...

I also know these conversations are recorded.

so onto the genetics

On Sun, Mar 1, 2020 at 1:28 AM The Alchemist <(b)(6)@gmail.com> wrote:
for completeness, the Japanese primer sequences, are also not consistent with what the CDC is doing,

Erratum: Nao, N., et al. Detection of second case of 2019-nCoV infection in Japan The authors wish to make the following change to their report. The reverse primer (NIID_2019-nCoV_N_R2) sequence should be replaced with TGGCAGCTGTGTAGGTCAAC. The corrected nucleotide is bold and underlined.

-

now i found this, the people licensed to do this type of research, by WHO...

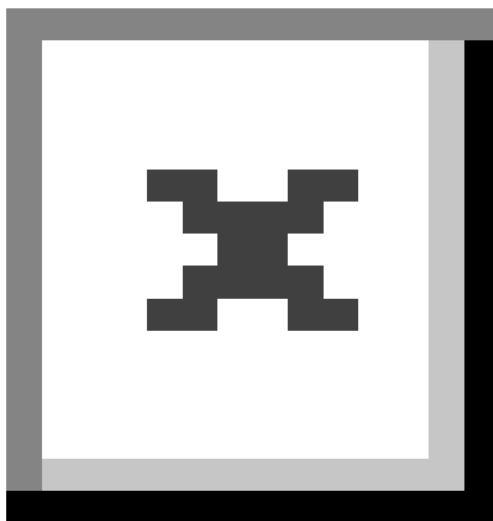


image.png

there is only one in America...

the CDC lab in Atlanta, which i found is the Emergency Operations Center (so it seems like they are the ones doing things wrong)

-

ok so there is a system,

[NREVSS | Home | National Respiratory and Enteric Virus Surv](#)

[...www.cdc.gov > surveillance > nrevss](#)

•

The National **Respiratory** Enteric **Virus** Surveillance System (NREVSS) is a **lab**-based system that monitors certain patterns of specific **viruses**.

don't worry about my proposal then...

On Sun, Mar 1, 2020 at 1:21 AM The Alchemist <(b)(6)@gmail.com>wrote:
On February 4, 2020, the FDA issued an Emergency Use Authorization (EUA) to authorize the emergency use of Centers for Disease Control and Prevention's (CDC) 2019-Novel Coronavirus (2019-nCoV) Real-Time Reverse Transcriptase (RT)-PCR Diagnostic Panel for the presumptive qualitative detection of nucleic acid from the 2019-nCoV in upper and lower respiratory specimens (such as nasopharyngeal or oropharyngeal swabs, sputum, lower respiratory tract aspirates, bronchoalveolar lavage, and nasopharyngeal wash/aspirate or nasal aspirate) collected from individuals who meet CDC criteria for 2019-nCoV testing, pursuant to section 564 of the Federal Food, Drug, and Cosmetic Act (the Act) (21 U.S.C. 360bbb-3). Testing is limited to qualified laboratories designated by CDC and, in the United States, certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA), 42 U.S.C. § 263a, to perform high complexity tests.

-

some of the legal side.

ok, time to do a fresh analysis...

On Sun, Mar 1, 2020 at 1:16 AM The Alchemist <(b)(6)@gmail.com>wrote:
so this professor already works with NIH, but in this department

He is an investigator in the Centers of Excellence for Influenza Research and Surveillance (CEIRS) program of NIAID, National Institutes of Health, USA.

On Sun, Mar 1, 2020 at 1:15 AM The Alchemist <(b)(6)@gmail.com>wrote:
so the actually professor at hong kong, who advised the europeans was this person

<https://sph.hku.hk/en/about-us/faculty-and-staff/academic-staff/peiris,-joseph-sriyal-malik>

-

for fun, I will do some genetics analysis

On Sun, Mar 1, 2020 at 1:03 AM The Alchemist <(b)(6)@gmail.com>wrote:
The N gene RT-PCR is recommended as a screening assay and the Orf1b assay as a confirmatory one.

That is what the Hong Kong medical school people said.

On Sun, Mar 1, 2020 at 1:00 AM The Alchemist <(b)(6)@gmail.com> wrote:
hmm,

I analysed the what the Hong Kong medical school people said, and it also does not match what the (US) CDC says...

https://www.who.int/docs/default-source/coronaviruse/peiris-protocol-16-1-20.pdf?sfvrsn=af1aac73_4

so that is one issue.

What can be done though, is to go and check the newly published genome(s) and see if these detection methods are proper or not...

On Sun, Mar 1, 2020 at 12:51 AM The Alchemist <(b)(6)@gmail.com> wrote:
so a quick analysis, shows the sequences used by the scientists are not the same as the US CDC published...

I am not an expert at primer design, but we did to PCR experiment in biology class (in grade 11...), so i know the basics of it.

If you are looking for an expert, I found this professor, he can help

[Nikolay Klyashtorny](#)
University of Hawai'i at Mānoa

Hi, I made a few educational videos on youtube for beginners about primer design:

What is an amplicon? See examples of the different applications. https://www.youtube.com/watch?v=ZXITUMhn7_A

Primer design. What is 3' GC clamp?

<https://www.youtube.com/watch?v=zZqjH1libCs>

What is PCR plateau effect?

<https://www.youtube.com/watch?v=rbvvvLWE8jl>

Forward and reverse, sense and antisense primers

https://www.youtube.com/watch?v=0vdbf4F90_o

Primer design. What is the primer-dimer?

<https://www.youtube.com/watch?v=dnmZFOADwl8>

Primer design - what is the Primer breathing?

<https://www.youtube.com/watch?v=3l3l5xxZscg>

How to design a primer?

<https://www.youtube.com/watch?v=l6aiunDT0Js>

How to calculate melting temperature of DNA "2+4 rule of thumb"

<https://www.youtube.com/watch?v=LGb6y4xn93w>

On Sun, Mar 1, 2020 at 12:42 AM The Alchemist <(b)(6)@gmail.com> wrote:
so, yesterday I found what the chinese CDC says

新型冠状病毒核酸检测引物和探针序列 (Specific primers and probes for detection 2019 novel coronavirus)

来源：病毒病所 发布时间：2020-01-21

1. 新型冠状病毒核酸测定（实时荧光RT-PCR方法）

推荐选用针对新型冠状病毒的开放读码框1ab（open reading frame, ORF1ab）、核壳蛋白（nucleoprotein, N）基因区域的引物和探针。

Target 1 (ORF1ab) :

正向引物 (F) : CCCTGTGGGTTTACACTTAA

反向引物 (R) : ACGATTGTGCATCAGCTGA

荧光探针 (P) : 5' -FAM-CCGTCTGCGGTATGTGAAAGGTTATGG-BHQ1-3'

Target 2 (N) :

正向引物 (F) : GGGGAACCTTCTCCTGCTAGAAT

反向引物 (R) : CAGACATTTGCTCTCAAGCTG

荧光探针 (P) : 5' -FAM-TTGCTGCTGCTTGACAGATT-TAMRA-3'

可以核酸提取和实时荧光RT-

PCR反应体系参考相关厂家试剂盒说明。

2. 结果判断

阴性:无Ct值或Ct为40。

阳性: Ct值<37, 可报告为阳性。

可疑: Ct值在37-

40之间, 建议重复实验, 若重做结果Ct值<40, 扩增曲线有明显起峰, 该样本判断为阳性, 否则为阴性。

-

simple translation

Novel primers and probes for detection of novel coronavirus 2019

Source: Institute of Viral DiseasesRelease time: 2020-01-21

1. New Coronavirus Nucleic Acid Assay (Real-time fluorescent RT-PCR method)

It is recommended to use an open reading frame for the novel coronavirus 1AB (Open Reading Frame, ORF1ab), nucleocapsid protein (Nucleoprotein , N) primers and probes gene regions.

Target 1 (ORF1ab) :

Forward primer (F): CCCTGTGGGTTTTACTTAA

Reverse primer (R): ACGATTGTGCATCAGCTGA

Fluorescent Probe (P): 5'-FAM-
CCGTCTGCGGTATGTGAAAGGTTATGG-BHQ1-3 '

Target 2 (N) :

Forward primer (F): GGGGAAGTTCTCCTGCTAGAAT

Reverse primer (R): CAGACATTTTGCTCTCAAGCTG

Fluorescent Probe (P): 5'-FAM-
TTGCTGCTGCTTGACAGATT-TAMRA-3 '

For nucleic acid extraction and real-time fluorescent RT-PCR reaction system, refer to the relevant manufacturer's kit instructions.

2. Judgment of results

Negative : No Ct value or Ct of 40 .

Positive: Ct value <37 , can be reported as positive.

Suspicious: Ct value of 37-40 between, is recommended to repeat the experiment, if the result of the redo Ct value <40 , the amplification curve from a clear peak, the sample is determined as positive , or negative.

—

so one major difference is the US CDC is not testing for the ORF-lab.

On Sun, Mar 1, 2020 at 12:24 AM The Alchemist <(b)(6)@gmail.com>wrote:

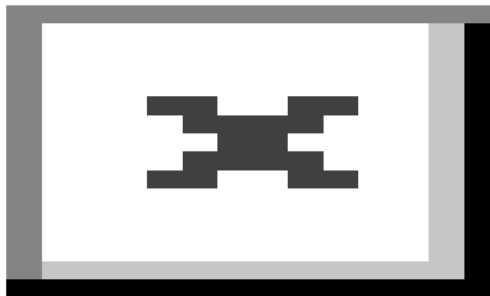


image.png

please recall i offered assistance, a month ago.

I'll do some more genetics analysis, and see if that shows anything new.

Dr Strong (in Canada), I am still registered as a genetics major at Western...

On Sun, Mar 1, 2020 at 12:21 AM The Alchemist <(b)(6)@gmail.com>wrote:

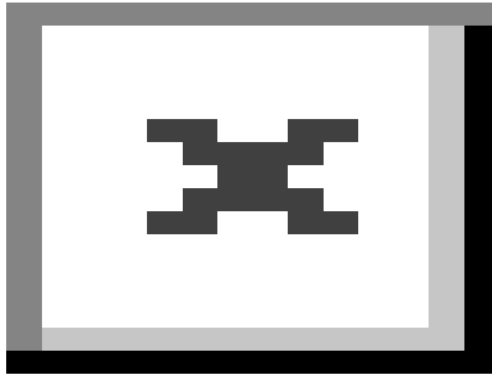


image.png

On Sun, Mar 1, 2020 at 12:19 AM The Alchemist <(b)(6)@gmail.com> wrote:

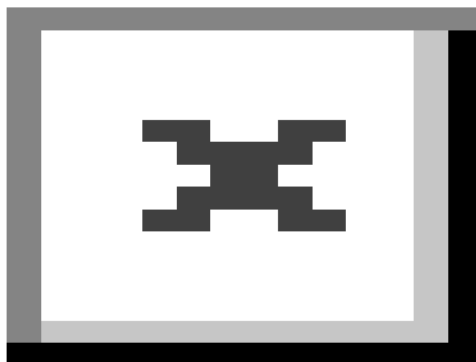


image.png

I talked to Johnny today, he told me, the FDA office in Maine still has his wife's medical documents (about the cervical cancer), and they never returned a copy of them as they promised.

I also understand FDA and NIH are not always aligned, but if you want to solve these issues, you should be.

Like i intuited, it is known that some top level FDA people are ungodly.

ok thats all for now.

- peace

Sender:	The Alchemist (b)(6)@gmail.com>
Recipient:	Biabie, Missiratch (Mimi) (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=16ecd42585564abea7003ada035df689-missiratch.>; Ibrahim, Amna (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddefd991104249dd83c6586bfc7c19e-amna.ibrahi>; Beaver, Julia (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a05286b19a7b4895a71b9d1087666b25-julia.beave>; <Norman.Sharpless@fda.hhs.gov>; Azar, Alex (OS/IOS) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cd4875f6a7414810934ed443c7f34740-Azar, Alex>; Fauci, Anthony (NIH/NIAID) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=826965b24a314ffca7eddc6e8229aa7-anthony.fau>; <michael.strong@cihr-irsc.gc.ca>; Langevin, Helene (NIH/NCCIH) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=27585df077174daf87a437e2b492ea2b-helene.lang>; Lowy, Douglas (NIH/NCI) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=aad7e8b13b6740959f2bec763a1a3217-douglas.low>; Keegan, Patricia (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2c9b1a0f14e84a819dcddf7a997a9999-patricia.ke>
Sent Date:	2020/03/01 01:47:35
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CC:	<malik@hku.hk>; <respviro@cdc.gov>
Subject:	Re: coronavirus testing
Date:	2020/03/01 04:50:56
Priority:	Normal
Type:	Note

<https://protect2.fireeye.com/url?k=37d473e1-6b817a31-37d442de-0cc47a6a52de-21f8d93e87dee054&u=https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.3.2000045>

as for these, these are also valid all three forward primers, were also detected in

Severe acute respiratory syndrome coronavirus 2 isolate 2019-nCoV/USA-CA6/2020, complete genome

GenBank: MT044258.1

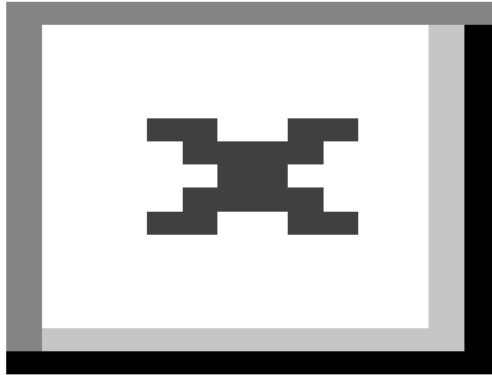


image.png

On Sun, Mar 1, 2020 at 4:29 AM The Alchemist <(b)(6)@gmail.com> wrote:
I went ahead and validated the primers, I was able to generate tonight

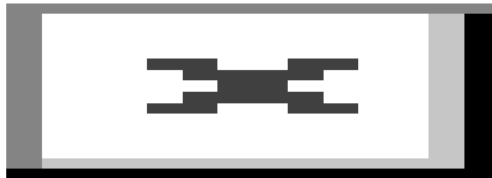


image.png

Forward primer TGTCGTTGACAGGACACGAG

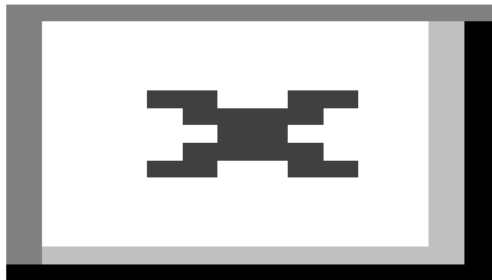


image.png

Sequence (5'→3')

Forward primer TTAGCCAGCGTGGTGGTAG

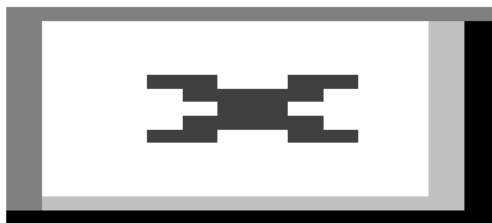


image.png

Sequence (5'→3')

Forward primer TGTGTATGCTGCTGACCCTG

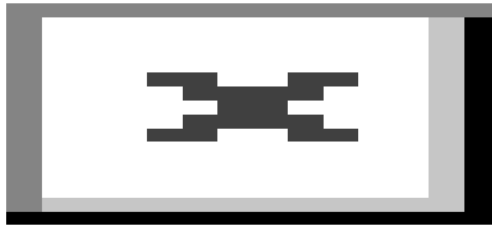


image.png

Sequence (5'→3')

Forward primer GGTTACCGCTCTCACTCAA

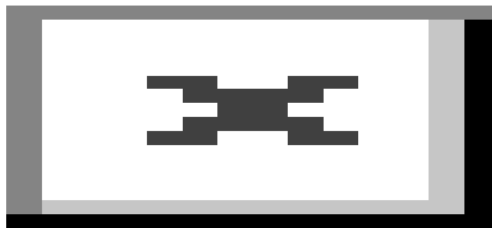


image.png

Sequence (5'→3')

Forward primer TTGGTTACCGCTCTCACTC

-

so it seems these computationally generated results for diagnostic primers, are valid.

On Sun, Mar 1, 2020 at 4:14 AM The Alchemist <(b)(6)@gmail.com> wrote:

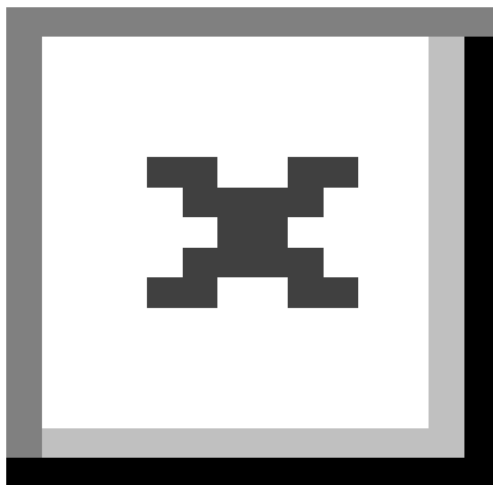


image.png

for completeness I went and checked if the chinese primers are in the genome, they are

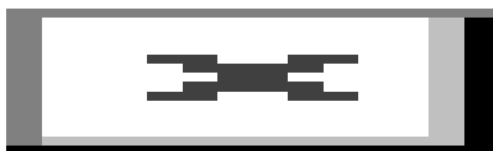


image.png

Target 1 (ORF1ab) :

正向引物 (F) : CCCTGTGGGTTTTACACTTAA

Target 2 (N) :

正向引物 (F) : GGGGAAGTTCTCCTGCTAGAAT

Wuhan seafood market pneumonia virus isolate Wuhan-Hu-1, complete genome

NCBI Reference Sequence: NC_045512.2

the forward sequence are but not the reverse,

-

the HK ones

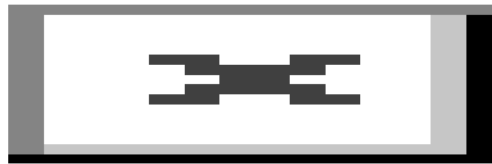


image.png

Forward primer (HKU-ORF1b-nsp14F): 5'-TGGGGYTTTACRGGTAACCT-3'

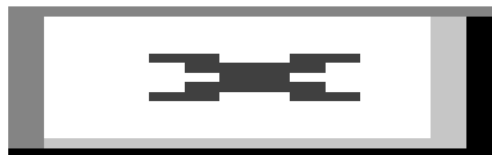


image.png

Assay 2 (Target: N) Forward primer (HKU-NF): 5'-TAATCAGACAAGGAACTGATTA-3'

-

the CDC

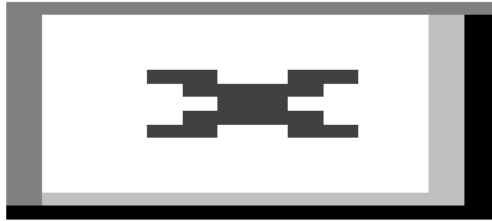


image.png

2019-nCoV_N1-F 2019-nCoV_N1
Forward Primer 5'-GAC CCC AAA ATC AGC GAA AT-3'

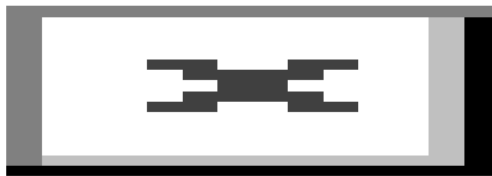


image.png

2019-nCoV_N2-F 2019-nCoV_N2
Forward Primer 5'-TTA CAA ACA TTG GCC GCA AA-3'

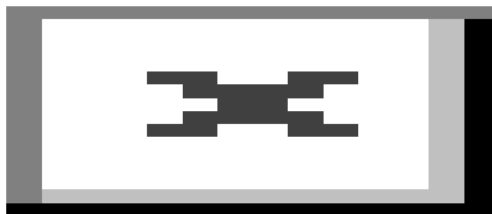


image.png

2019-nCoV_N3-F 2019-nCoV_N3
Forward Primer 5'-GGG AGC CTT GAA TAC ACC AAA A-3'

the CDC mistake was the

RNAse P Forward, this was not found, in my search.

On Sun, Mar 1, 2020 at 3:55 AM The Alchemist <(b)(6)@gmail.com> wrote:
<https://www.nytimes.com/2020/02/29/health/fda-coronavirus-testing.html>

F.D.A. Expands Coronavirus Testing in the United States

The agency announced that it would allow hundreds of labs to test for the virus, circumventing the C.D.C.'s centralized testing system and making it likely that cases will be detected faster.

anyways, to be honest, i am not so interested in diagnostics

i like making my herbal remedies though.

Maybe CDC will correct their mistakes now.

- peace

Sender:	The Alchemist <(b)(6)@gmail.com>
Recipient:	Biabie, Missiratch (Mimi) (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=16ecd42585564abea7003ada035df689-missiratch.>; Ibrahim, Amna (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddefd991104249dd83c6586bfc7c19e-amna.ibrahi>; Beaver, Julia (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a05286b19a7b4895a71b9d1087666b25-julia.beave>; <Norman.Sharpless@fda.hhs.gov>; Azar, Alex (OS/IOS) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cd4875f6a7414810934ed443c7f34740-Azar, Alex>; Fauci, Anthony (NIH/NIAID) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=826965b24a314ffca7eddc6e8229aa7-anthony.fau>; <michael.strong@cihr-irsc.gc.ca>; Langevin, Helene (NIH/NCCIH) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=27585df077174daf87a437e2b492ea2b-helene.lang>; Lowy, Douglas (NIH/NCI) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=aad7e8b13b6740959f2bec763a1a3217-douglas.low>; Keegan, Patricia (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2c9b1a0f14e84a819dcddf7a997a9999-patricia.ke>; <malik@hku.hk>; <respvirus@cdc.gov>

Sent Date:	2020/03/01 04:50:33
Delivered Date:	2020/03/01 04:50:56
Message Flags:	Unread

From:	The Alchemist <(b)(6)@gmail.com>
To:	Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd.ative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=16ecd42585564abea7003ada035df689-missiratch.>; Ibrahim, Amna (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddefd991104249dd83c6586bfc7c19e-amna.ibrahi>; Beaver, Julia (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a05286b19a7b4895a71b9d1087666b25-julia.beave>; <Norman.Sharpless@fda.hhs.gov>; Azar, Alex (OS/IOS) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cd4875f6a7414810934ed443c7f34740-Azar, Alex>; Fauci, Anthony (NIH/NIAID) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=826965b24a314ffca7eddc6e8229aa7-anthony.fau>; <michael.strong@cihr-irsc.gc.ca>; Langevin, Helene (NIH/NCCIH) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=27585df077174daf87a437e2b492ea2b-helene.lang>; Lowy, Douglas (NIH/NCI) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=aad7e8b13b6740959f2bec763a1a3217-douglas.low>; Keegan, Patricia (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2c9b1a0f14e84a819dcddf7a997a9999-patricia.ke>
CC:	<malik@hku.hk>; <respvirus@cdc.gov>
Subject:	Re: coronavirus testing
Date:	2020/03/01 04:57:43
Priority:	Normal
Type:	Note

lastly,

the sequences i provided tonight, as well as the above ones (Euro-surveillance) are valid in

<https://www.ncbi.nlm.nih.gov/nuccore/MT106053>

-

Severe acute respiratory syndrome coronavirus 2 isolate 2019-nCoV/USA-CA9/2020, complete genome

GenBank: MT118835.1

the sequences i provided tonight were also validated in this one,

the latest genome submitted from USA patients (23-Feb-2020)

ok

you are welcome.

- peace

On Sun, Mar 1, 2020 at 4:50 AM The Alchemist <conventherbal@gmail.com>wrote:
<https://protect2.fireeye.com/url?k=fea6503e-a2f3592d-fea66101-0cc47adb5650-6eb316de76c7a9a3&u=https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.3.2000045>

as for these, these are also valid all three forward primers, were also detected in

Severe acute respiratory syndrome coronavirus 2 isolate 2019-nCoV/USA-CA6/2020, complete genome

GenBank: MT044258.1

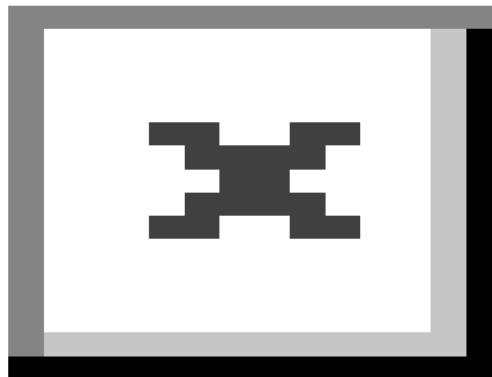


image.png

On Sun, Mar 1, 2020 at 4:29 AM The Alchemist <(b)(6)>[@gmail.com](mailto:[redacted]@gmail.com)>wrote:
I went ahead and validated the primers, I was able to generate tonight

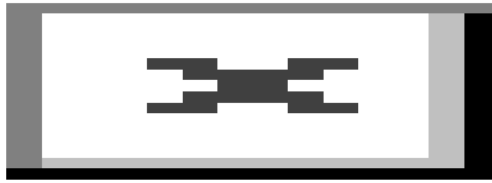


image.png

Forward primer TGTCGTTGACAGGACACGAG

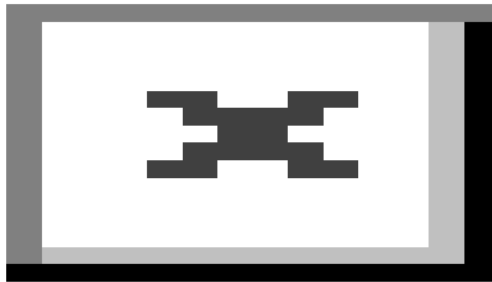


image.png

Sequence (5'->3')

Forward primer TTAGCCAGCGTGGTGGTAG

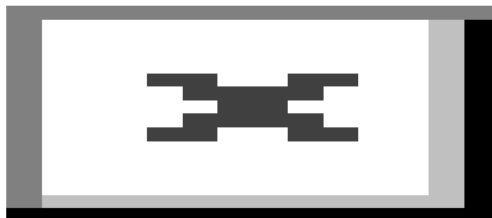


image.png

Sequence (5'→3')
Forward primer TGTGTATGCTGCTGACCCTG

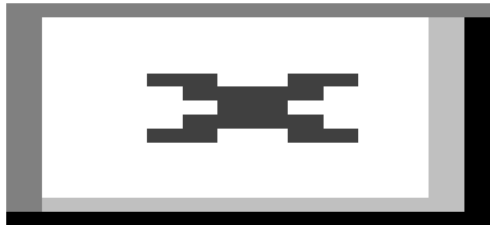


image.png

Sequence (5'→3')
Forward primer GGTTCACCGCTCTCACTCAA

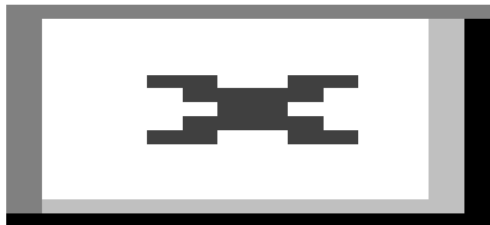


image.png

Sequence (5'→3')
Forward primer TTGGTTCACCGCTCTCACTC

-

so it seems these computationally generated results for diagnostic primers, are valid.

On Sun, Mar 1, 2020 at 4:14 AM The Alchemist <(b)(6)@gmail.com> wrote:

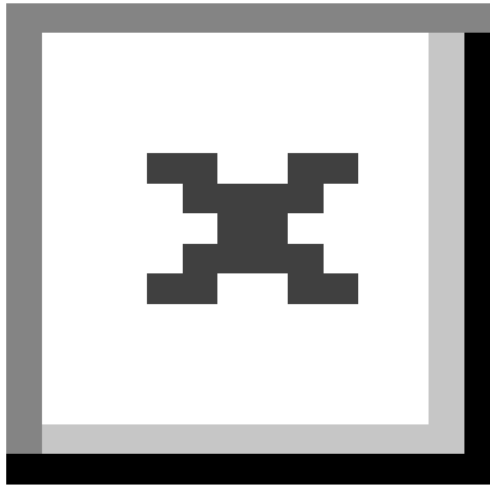


image.png

for completeness I went and checked if the chinese primers are in the genome, they are

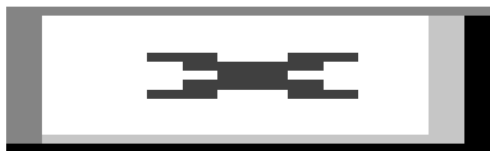


image.png

Target 1 (ORF1ab) :

正向引物 (F) : CCCTGTGGGTTTTACACTTAA

Target 2 (N) :

正向引物 (F) : GGGGAACCTTCTCCTGCTAGAAT

Wuhan seafood market pneumonia virus isolate Wuhan-Hu-1, complete genome

NCBI Reference Sequence: NC_045512.2

the forward sequence are but not the reverse,

-

the HK ones

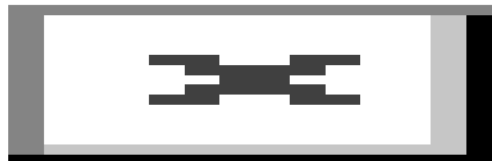


image.png

Forward primer (HKU-ORF1b-nsp14F): 5'-TGGGGYTTTACRGGTAACCT-3'

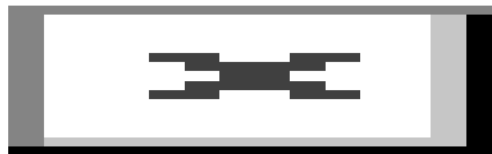


image.png

Assay 2 (Target: N) Forward primer (HKU-NF): 5'-TAATCAGACAAGGAACTGATTA-3'

-

the CDC

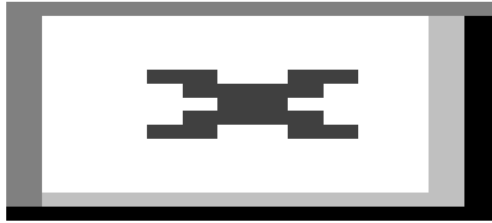


image.png

2019-nCoV_N1-F 2019-nCoV_N1
Forward Primer 5'-GAC CCC AAA ATC AGC GAA AT-3'

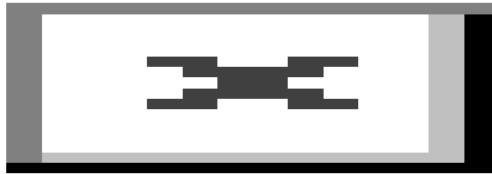


image.png

2019-nCoV_N2-F 2019-nCoV_N2
Forward Primer 5'-TTA CAA ACA TTG GCC GCA AA-3'

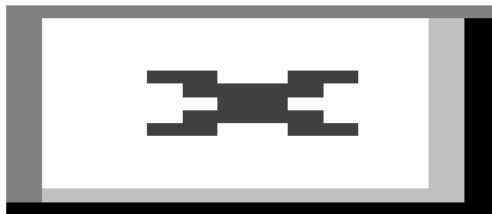


image.png

2019-nCoV_N3-F 2019-nCoV_N3
Forward Primer 5'-GGG AGC CTT GAA TAC ACC AAA A-3'

the CDC mistake was the

RNAse P Forward, this was not found, in my search.

On Sun, Mar 1, 2020 at 3:55 AM The Alchemist <(b)(6)@gmail.com> wrote:
<https://www.nytimes.com/2020/02/29/health/fda-coronavirus-testing.html>

F.D.A. Expands Coronavirus Testing in the United States

The agency announced that it would allow hundreds of labs to test for the virus, circumventing the C.D.C.'s centralized testing system and making it likely that cases will be detected faster.

anyways, to be honest, i am not so interested in diagnostics

i like making my herbal remedies though.

Maybe CDC will correct their mistakes now.

- peace

Sender:	The Alchemist <(b)(6)@gmail.com>
Recipient:	Biabe, Missiratch (Mimi) (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=16ecd42585564abea7003ada035df689-missiratch.>; Ibrahim, Amna (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddefd991104249dd83c6586bfc7c19e-amna.ibrahi>; Beaver, Julia (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a05286b19a7b4895a71b9d1087666b25-julia.beave>; <Norman.Sharpless@fda.hhs.gov>; Azar, Alex (OS/IOS) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=cd4875f6a7414810934ed443c7f34740-Azar, Alex>; Fauci, Anthony (NIH/NIAID) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=826965b24a314ffca7eddc6e8229aa7-anthony.fau>; <michael.strong@cihr-irsc.gc.ca>; Langevin, Helene (NIH/NCCIH) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=27585df077174daf87a437e2b492ea2b-helene.lang>; Lowy, Douglas (NIH/NCI) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=aad7e8b13b6740959f2bec763a1a3217-douglas.low>; Keegan, Patricia (FDA/CDER) </o=ExchangeLabs/ou=Exchange Administrative Group

	(FYDIBOHF23SPDLT)/cn=Recipients/cn=2c9b1a0f14e84a819dcddf7a997a9999-patricia.ke>; <malik@hku.hk>; <respvirus@cdc.gov>
Sent Date:	2020/03/01 04:57:24
Delivered Date:	2020/03/01 04:57:43
Message Flags:	Unread

From:	Carter Mecher <(b)(6)@charter.net>
To:	Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>
CC:	Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd. Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)@me.com>
Subject:	RE: VA Projections using Cruise Ship Data
Date:	2020/03/01 05:47:57
Priority:	Normal
Type:	Note

Trying to keep up with the cruise ship (keeping timeline).

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in IC
13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes

15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious illness
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill; asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill; asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan; US reports total of 44 cases in US	753	6	
29-Feb	Australia reports death; Israel reports (+1) 3 cases	754	7	

Country	Passengers/Crew	Cases Hospitalized in Japan	Cases Confirmed upon Repatriation	Total Confirmed Cases	ICU Admissions	Deaths	% Infected
US	434	44	44	88			20%
Hong Kong	364	55	4	59			16%
Canada	256	47		47			18%
Australia	241	47	8	55		1	23%
UK	78	6	4	10		1	13%

Italy	35						
South Korea	14						
Israel	11	3	3	6			55%
Japan						5	
Subtotal	1,433	202	63	265			
Total	3,711	691	63	754		7	20%

Sent from [Mail](#) for Windows 10

From: [Richard Hatchett](#)

Sent: Sunday, March 1, 2020 1:33 AM

To: [Lawler, James V](#)

Cc: [Carter Mecher](#); [Callahan, Michael V., M.D.](#); [Marcozzi, David](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Caneva, Duane](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: Re: VA Projections using Cruise Ship Data

1st Australia death is a Diamond Princess passenger.

Sent from my iPhone

On 1 Mar 2020, at 04:06, Lawler, James V <(b)(6)@unmc.edu> wrote:

Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>

Date: Saturday, February 29, 2020 at 6:53 PM

To: "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>

Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is $1\% \times 5\% = 0.05\%$. But it takes 2 weeks or so before a patient who is infected becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\% / 8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

Sent from [Mail \[go.microsoft.com\]](mailto:Mail[go.microsoft.com]) for Windows 10

From: Lawler, James V
Sent: Saturday, February 29, 2020 5:31 PM
To: Callahan, Michael V., M.D.
Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert
Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m:(b)(6)
(b)(6)@unmc.edu

From: "Callahan, m." <(b)(6)@mgh.harvard.edu>
Date: Saturday, February 29, 2020 at 2:39 PM
To: "Lawler, James V" <(b)(6)@unmc.edu>
Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom

Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better then poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital
Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V <(b)(6)@unmc.edu> wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Marcozzi, David" <(b)(6)@som.umaryland.edu>

Date: Saturday, February 29, 2020 at 5:11 AM

To: "Lawler, James V" <(b)(6)@unmc.edu>, Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
Associate Professor
Associate Chair of Population Health
Department of Emergency Medicine
University of Maryland School of Medicine
<https://em.umaryland.edu> [em.umaryland.edu]

Associate Professor
Department of Epidemiology and Public Health
University of Maryland School of Medicine
<https://www.medschool.umaryland.edu/epidemiology/> [medschool.umaryland.edu]

Assistant Chief Medical Officer for Acute Care
University of Maryland Medical Center
<http://www.umm.edu> [umm.edu]

Deputy Medical Director for Mobile Integrated Health/Community Paramedicine
Baltimore City Fire Department
<https://protect2.fireeye.com/url?k=8923c452-d576cd41-8923f56d-0cc47adb5650-eb324e5d7a348e8b&u=https://fire.baltimorecity.gov/mobile-integrated-health-community-paramedicine>
[fire.baltimorecity.gov]

Mailing Address:
6th floor, Suite 200
110 South Paca Street
Baltimore, Maryland 21201
(667)-214-2208 (office)

(b)(6)@som.umaryland.edu

Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson

From: James Lawler (b)(6)@unmc.edu>
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher (b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi (b)(6)@som.umaryland.edu>, "matthew. hepburn" (b)(6)@mail.mil>, Duane Caneva (b)(6)@hq.dhs.gov>, Robert Kadlec <Robert.Kadlec@hhs.gov>, (b)(6)@mgh.harvard.edu" (b)(6)@mgh.harvard.edu>, Tom Bossert (b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m: (b)(6)
(b)(6)@unmc.edu

<image001.png>

From: Carter Mecher <(b)(6)@charter.net>

Sent: Friday, February 28, 2020 3:06:10 PM

To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Tom Bossert <(b)(6)@me.com>

Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%

70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	100%	3,672	100%	19,209,704	100%

The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the cruise ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
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The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- • 600,000 acute (medical/surgical) admissions
- • 140,000 ICU admissions
- • 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in IC
13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 tes
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	

24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,89 tested; seriously ill asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134
75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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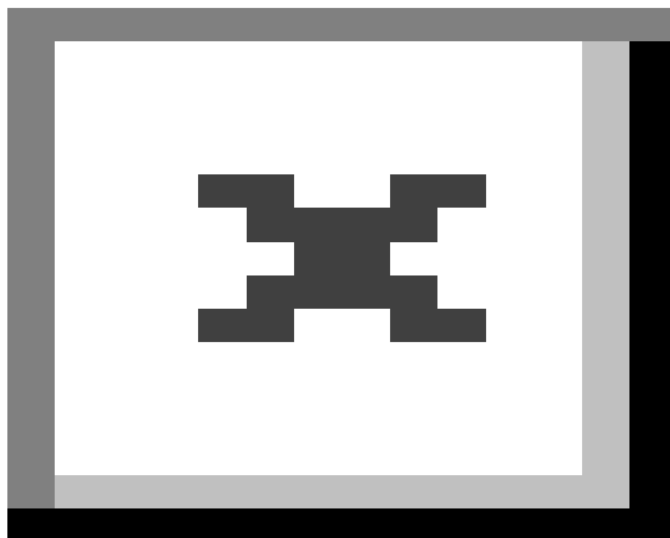
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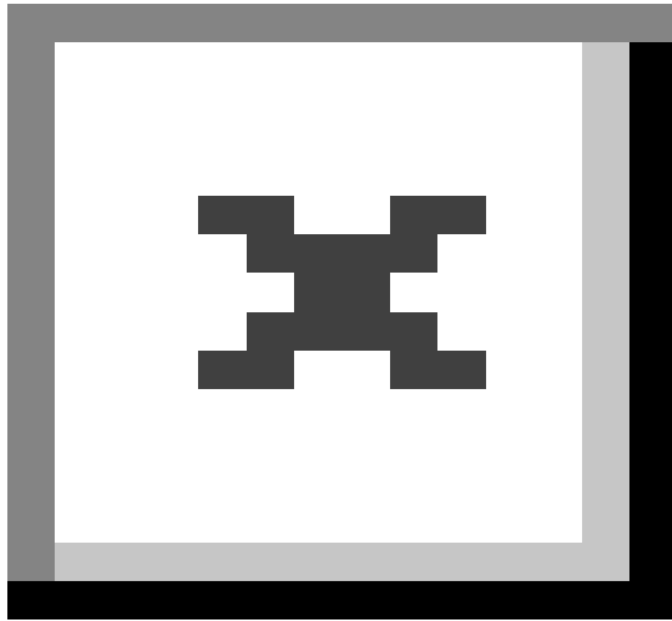
The information in this e-mail may be privileged and confidential, intended only for the use of the addressee(s) above. Any unauthorized use or disclosure of this information is prohibited. If you have received this e-mail by mistake, please delete it and immediately contact the sender.

Sender:	Carter Mecher <(b)(6)@charter.net>
Recipient:	Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)@me.com>
Sent Date:	2020/03/01 05:47:31
Delivered Date:	2020/03/01 05:47:57

From:	Carter Mecher <(b)(6)@charter.net>
To:	Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd.FYDIBOHF23SPDLT/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Lawler, James V <(b)(6)@unmc.edu>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>
CC:	Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)@me.com>
Subject:	RE: VA Projections using Cruise Ship Data
Date:	2020/03/01 06:00:19
Priority:	Normal
Type:	Note

A few things for the group. Have been interested in whether we can see anything happening with flu surveillance (especially ILI) in places with COVID outbreaks, Am interested in looking at Japan, Hong Kong, Singapore, and Italy. So far, only found Hong Kong (Eva Lee found it). I will keep looking—really interested in South Korea and Italy to get a better sense of whether looking st ILI will be of any value. https://www.chp.gov.hk/files/pdf/fluexpress_week8_27_2_2020_eng.pdf This is data thru Feb 22 (week 8). Hong Kong is really do a good job of surveillance. And what they are doing in terms of NPIs seems to be working (just like Singapore).





Sent from Mail for Windows 10

From: Caneva, Duane

Sent: Saturday, February 29, 2020 11:18 PM

To: Lawler, James V; Carter Mecher; Callahan, Michael V., M.D.; Dean, Charity A@CDPH

Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

+ Charity

CA seems first up.

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From: Lawler, James V <(b)(6)@unmc.edu>
Sent: Saturday, February 29, 2020 11:06:20 PM
To: Carter Mecher <(b)(6)@charter.net>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>
Cc: Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

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Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Date: Saturday, February 29, 2020 at 6:53 PM
To: "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>
Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is 1%*5% = 0.05%. But it takes 2 weeks or so before a patient who is infected

becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\%/8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

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From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Callahan, m." <(b)(6)@mgh.harvard.edu>

Date: Saturday, February 29, 2020 at 2:39 PM

To: "Lawler, James V" <(b)(6)@unmc.edu>

Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better than poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital

Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V <(b)(6)@unmc.edu> wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Marcozzi, David" <(b)(6)@som.umaryland.edu>
Date: Saturday, February 29, 2020 at 5:11 AM
To: "Lawler, James V" <(b)(6)@unmc.edu>, Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
Associate Professor
Associate Chair of Population Health
Department of Emergency Medicine
University of Maryland School of Medicine
<https://em.umaryland.edu> [em.umaryland.edu]

Associate Professor
Department of Epidemiology and Public Health
University of Maryland School of Medicine

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Assistant Chief Medical Officer for Acute Care
University of Maryland Medical Center
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Deputy Medical Director for Mobile Integrated Health/Community Paramedicine
Baltimore City Fire Department
<https://protect2.fireeye.com/url?k=df005b52-83555282-df006a6d-0cc47a6a52de-54db862fec7adcbf&u=https://fire.baltimorecity.gov/mobile-integrated-health-community-paramedicine>
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(667)-214-2208 (office)

(b)(6) @som.umaryland.edu

Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson

From: James Lawler (b)(6)@unmc.edu>
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher (b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi (b)(6)@som.umaryland.edu>, "matthew. hepburn" (b)(6)@mail.mil>, Duane Caneva (b)(6)@hq.dhs.gov>, Robert Kadlec <Robert.Kadlec@hhs.gov>, (b)(6)@mgh.harvard.edu" (b)(6)@mgh.harvard.edu>, Tom Bossert (b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m: (b)(6)
(b)(6)@unmc.edu

cid:image002.png@01D5EF39.EEC52710

From: Carter Mecher <(b)(6)@charter.net>

Sent: Friday, February 28, 2020 3:06:10 PM

To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Tom Bossert <(b)(6)@me.com>

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- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			

	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in IC
13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 te
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill asymptomatic

26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134
75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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Sender:	Carter Mecher <(b)(6)@charter.net>
Recipient:	Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Lawler, James V <(b)(6)@unmc.edu>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)@me.com>
Sent Date:	2020/03/01 05:58:37
Delivered Date:	2020/03/01 06:00:19

To:	Carter Mecher <(b)(6)@charter.net>; Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>; Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd.ve Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddfa6ef1131440dd8f5641b5de1a6436-richard.chi>
CC:	Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Tom Bossert <(b)(6)@me.com>
Subject:	RE: VA Projections using Cruise Ship Data
Date:	2020/03/01 06:27:20
Priority:	Normal
Type:	Note

Helpful I added Rick Childs who is JPN monitoring US patients and enrolling them in the REMDESAVIR protocol Last count and he can correct is that we have 6 patients in ICU

From: Carter Mecher <(b)(6)@charter.net>
Sent: Sunday, March 1, 2020 5:48 AM
To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>
Cc: Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane (DHS.GOV) <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Trying to keep up with the cruise ship (keeping timeline).

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
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1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
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27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan; US reports total of 44 cases in US	753	6	
29-Feb	Australia reports death; Israel reports (+1) 3 cases	754	7	

Country	Passengers/Crew	Cases Hospitalized in Japan	Cases Confirmed upon Repatriation	Total Confirmed Cases	ICU Admissions	Deaths	% Infected
US	434	44	44	88			20%
Hong Kong	364	55	4	59			16%
Canada	256	47		47			18%
Australia	241	47	8	55		1	23%
UK	78	6	4	10		1	13%
Italy	35						
South Korea	14						
Israel	11	3	3	6			55%
Japan						5	
Subtotal	1,433	202	63	265			
Total	3,711	691	63	754		7	20%

Sent from [Mail](#) for Windows 10

From: [Richard Hatchett](#)

Sent: Sunday, March 1, 2020 1:33 AM

To: [Lawler, James V](#)

Cc: [Carter Mecher](#); [Callahan, Michael V., M.D.](#); [Marcozzi, David](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Caneva, Duane](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: Re: VA Projections using Cruise Ship Data

1st Australia death is a Diamond Princess passenger.

Sent from my iPhone

On 1 Mar 2020, at 04:06, Lawler, James V <(b)(6)@unmc.edu> wrote:

Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>

Date: Saturday, February 29, 2020 at 6:53 PM

To: "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m."

<(b)(6)@mgh.harvard.edu>

Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett

<richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)"

<(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec,

Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>

Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is $1\% \times 5\% = 0.05\%$. But it takes 2 weeks or so before a patient who is infected becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\% / 8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

Sent from Mail [go.microsoft.com] for Windows 10

From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)

@unmc.edu

From: "Callahan, m." (b)(6)@mgh.harvard.edu>

Date: Saturday, February 29, 2020 at 2:39 PM

To: "Lawler, James V" (b)(6)@unmc.edu>

Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Carter Mecher (b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Caneva, Duane" (b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert (b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better then poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital
Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V (b)(6)@unmc.edu>wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Marcozzi, David" (b)(6)@som.umaryland.edu>

Date: Saturday, February 29, 2020 at 5:11 AM

To: "Lawler, James V" (b)(6)@unmc.edu>, Carter Mecher (b)(6)@charter.net>,

Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)"
(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec,
Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m."
(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
Associate Professor
Associate Chair of Population Health
Department of Emergency Medicine
University of Maryland School of Medicine
<https://em.umaryland.edu> [em.umaryland.edu]

Associate Professor
Department of Epidemiology and Public Health
University of Maryland School of Medicine
<https://www.medschool.umaryland.edu/epidemiology/> [medschool.umaryland.edu]

Assistant Chief Medical Officer for Acute Care
University of Maryland Medical Center
<http://www.umm.edu> [umm.edu]

Deputy Medical Director for Mobile Integrated Health/Community Paramedicine
Baltimore City Fire Department
[https://protect2.fireeye.com/url?k=8923c452-d576cd41-8923f56d-0cc47adb5650-
eb324e5d7a348e8b&u=https://fire.baltimorecity.gov/mobile-integrated-health-community-paramedicine](https://protect2.fireeye.com/url?k=8923c452-d576cd41-8923f56d-0cc47adb5650-eb324e5d7a348e8b&u=https://fire.baltimorecity.gov/mobile-integrated-health-community-paramedicine)
[fire.baltimorecity.gov]

Mailing Address:
6th floor, Suite 200
110 South Paca Street
Baltimore, Maryland 21201
(667)-214-2208 (office)

(b)(6)@som.umaryland.edu

Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson

From: James Lawler <(b)(6)@unmc.edu>
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi <(b)(6)@som.umaryland.edu>, "matthew. hepburn" <(b)(6)@mail.mil>, Duane Caneva <(b)(6)@hq.dhs.gov>, Robert Kadlec <Robert.Kadlec@hhs.gov>, (b)(6)@mgh.harvard.edu" <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m: (b)(6)
(b)(6)@unmc.edu

<image001.png>

From: Carter Mecher <(b)(6)@charter.net>
Sent: Friday, February 28, 2020 3:06:10 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Tom Bossert <(b)(6)@me.com>
Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	100%	3,672	100%	19,209,704	100%

The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240

Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- 600,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

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The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in IC
13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,215 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans	369		

	remained hospitalized in Japan			
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 te
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134

75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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Recipient:	Callahan, Michael V., M.D. <(b)(6)>@mgh.harvard.edu>; Marcozzi, David <(b)(6)>@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)>@mail.mil>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Tom Bossert <(b)(6)>@me.com>; Carter Mecher <(b)(6)>@charter.net>; Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)>@unmc.edu>; Childs, Richard (NIH/NHLBI) [E] </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ddfa6ef1131440dd8f5641b5de1a6436-richard.chi>
Sent Date:	2020/03/01 06:27:29
Delivered Date:	2020/03/01 06:27:20
Message Flags:	Unread Unsent

To:	Carter Mecher <(b)(6)>@charter.net>; Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)>@unmc.edu>
CC:	Callahan, Michael V., M.D. <(b)(6)>@mgh.harvard.edu>; Marcozzi, David <(b)(6)>@som.umaryland.edu>; Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd. Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Tom Bossert <(b)(6)>@me.com>
Subject:	RE: VA Projections using Cruise Ship Data
Date:	2020/03/01 06:32:26
Priority:	Normal
Type:	Note

From: Carter Mecher <(b)(6)>@charter.net>
Sent: Sunday, March 1, 2020 5:48 AM
To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)>@unmc.edu>
Cc: Callahan, Michael V., M.D. <(b)(6)>@mgh.harvard.edu>; Marcozzi, David <(b)(6)>@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)>@mail.mil>; Caneva, Duane (DHS.GOV) <(b)(6)>@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert <(b)(6)>@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Trying to keep up with the cruise ship (keeping timeline).

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27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan; US reports total of 44 cases in US	753	6	
29-Feb	Australia reports death; Israel reports (+1) 3 cases	754	7	

Country	Passengers/Crew	Cases Hospitalized in Japan	Cases Confirmed upon Repatriation	Total Confirmed Cases	ICU Admissions	Deaths	% Infect
US	434	44	44	88			20%
Hong Kong	364	55	4	59			16%
Canada	256	47		47			18%
Australia	241	47	8	55		1	23%
UK	78	6	4	10		1	13%
Italy	35						
South Korea	14						
Israel	11	3	3	6			55%
Japan						5	
Subtotal	1,433	202	63	265			
Total	3,711	691	63	754		7	20%

Sent from [Mail](#) for Windows 10

From: Richard Hatchett

Sent: Sunday, March 1, 2020 1:33 AM

To: [Lawler, James V](#)

Cc: [Carter Mecher](#); [Callahan, Michael V., M.D.](#); [Marcozzi, David](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Caneva, Duane](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: Re: VA Projections using Cruise Ship Data

1st Australia death is a Diamond Princess passenger.

Sent from my iPhone

On 1 Mar 2020, at 04:06, Lawler, James V <(b)(6)>@unmc.edu> wrote:

Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>

Date: Saturday, February 29, 2020 at 6:53 PM

To: "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m."

<(b)(6)@mgh.harvard.edu>

Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett

<richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)"

<(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec,

Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>

Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is $1\% \times 5\% = 0.05\%$. But it takes 2 weeks or so before a patient who is infected becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\% / 8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

Sent from Mail [go.microsoft.com] for Windows 10

From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Callahan, m." <(b)(6)@mgh.harvard.edu>
Date: Saturday, February 29, 2020 at 2:39 PM
To: "Lawler, James V" <(b)(6)@unmc.edu>
Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better then poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital
Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V <(b)(6)@unmc.edu> wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: "Marcozzi, David" <(b)(6)@som.umaryland.edu>
Date: Saturday, February 29, 2020 at 5:11 AM
To: "Lawler, James V" <(b)(6)@unmc.edu>, Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)"

(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
Associate Professor
Associate Chair of Population Health
Department of Emergency Medicine
University of Maryland School of Medicine
<https://em.umaryland.edu> [em.umaryland.edu]

Associate Professor
Department of Epidemiology and Public Health
University of Maryland School of Medicine
<https://www.medschool.umaryland.edu/epidemiology/> [medschool.umaryland.edu]

Assistant Chief Medical Officer for Acute Care
University of Maryland Medical Center
<http://www.umm.edu> [umm.edu]

Deputy Medical Director for Mobile Integrated Health/Community Paramedicine
Baltimore City Fire Department
<https://protect2.fireeye.com/url?k=8923c452-d576cd41-8923f56d-0cc47adb5650-eb324e5d7a348e8b&u=https://fire.baltimorecity.gov/mobile-integrated-health-community-paramedicine>
[fire.baltimorecity.gov]

Mailing Address:
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Baltimore, Maryland 21201
(667)-214-2208 (office)

(b)(6)
@som.umaryland.edu

Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson

From: James Lawler <(b)(6)@unmc.edu>
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi <(b)(6)@som.umaryland.edu>, "matthew. hepburn" <(b)(6)@mail.mil>, Duane Caneva <(b)(6)@hq.dhs.gov>, Robert Kadlec <Robert.Kadlec@hhs.gov>, "(b)(6)@mgh.harvard.edu" <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m: (b)(6)
(b)(6)@unmc.edu

<image001.png>

From: Carter Mecher <(b)(6)@charter.net>
Sent: Friday, February 28, 2020 3:06:10 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Tom Bossert <(b)(6)@me.com>
Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	100%	3,672	100%	19,209,704	100%

The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240

Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- 600,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

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20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill; asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill; asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134

75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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Recipient:	Carter Mecher <(b)(6)@charter.net>; Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Tom Bossert <(b)(6)@me.com>
Sent Date:	2020/03/01 06:33:06
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To:	OS Secretarys Operations Center </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=32b1f28d808b43b6903c00083291303e-Secretarys>
Subject:	HHS Executive Summary 01Mar20
Date:	2020/03/01 06:47:57
Priority:	Normal
Type:	Note

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HHS Executive Summary: Sunday, 01Mar20

1. HHS

Today's Noteworthy Topics:

COVID-19 (Novel Coronavirus)

CDC confirmed the death of the first U.S. positive COVID-19 case. Open source media is reporting that officials in Washington State and the CDC are tracking a possible outbreak of COVID-19 at a long-term care nursing facility in Washington State. There are currently two presumptive positive cases associated with the facility (one healthcare worker and one resident). Officials are also reporting that approximately 27 of the 108 residents and 25 of the 180 staff have some symptoms and are being tested. Governor Inslee has issued a state of emergency in Washington State due to the newly reported cases of COVID-19. The U.S. State Department has updated travel advisories for Italy and South Korea due to COVID-19. DoS – Daegu, South Korea – Level IV, Do Not Travel, due to widespread community transmission of COVID-19. DoS – Lombardy and Veneto, Italy – Level IV, Do Not Travel, due to widespread community transmission of COVID-19.

EMPortal Intermittent Outage

EMPortal experienced intermittent outages for approximately two hours. EMPortal was accessible and fully functional as of 0425ET on 01Mar20.

Daily Operational Schedule:

1400 – Resource Coordination Call

Public Health Emergency of National Significance:

Puerto Rico (Earthquake): 08Jan20
 Opioid Crisis, Nationwide: 24Jan20
 Novel Coronavirus (COVID-19): 31Jan20

HHS Response Status Summary:

HHS SOC: Level I (Full Activation)
 CDC EOC: Level III (Polio/Ebola)
 CDC EOC: COVID-19 (Agency-Wide Response)
 FDA EOC: Level II (Vape Product Response, COVID-19)

Emergency Support Function (ESF) Activation:

ESF – 8: Not Activated

ESF – 6: Not Activated

Recovery Support Function (RSF) Activation:

H&SS RSF: Activated Region II (2017 Irma/Maria, Puerto Rico projected end date of 05Mar20). Activated Region IX (2018 California Wildfires projected end date of 31Mar20).

HHS Deployments: (Total = 845)

ASPR: 555 – (8) 2020 Earthquake Puerto Rico, (534) COVID-19, (4) Irma/Maria, (1) California Wildfires, (7) FY Training Q1, (1) Recovery California Wildfires

CDC: 290 – (1) Puerto Rico, (221) COVID-19, (31) Polio, (37) Ebola

FMS Status:

- • * 32 (250 Bed) FMS sets are deployable
- • * 10 (50 Bed) FMS sets are deployable

New Mission Assignments (MA): NSTR

Active Situations (7):

- • * Influenza Season
- • * Irma/Maria, Puerto Rico, & USVI (Recovery)
- • * Ebola in Eastern Democratic Republic of the Congo
- • * California Wildfires (Recovery)
- • * Novel Coronavirus (COVID-19)
- • * Bravo Response
- • * Earthquake, Puerto Rico

U.S. International Health Regulation National Focal Point Status: NSTR

2. FEMA:

Interagency Response Status Summary:

NWC: Monitoring

NRCC: Blue

National IMATs: Red – Fully Mission Capable; Blue – Fully Mission Capable – PR; Gold – Fully Mission Capable

Regional IMATs: Region II, PR (Reconstituting); Region VI-1, PMC; Region IX-1, PMC

Significant National Weather:

Rain and thunderstorms possible for the Tennessee, Ohio, and Middle Mississippi Valleys. Heavy snow possible for higher elevations of the Sierra Nevada, Wind River, Wasatch, and Central Rocky Mountains.

3. OPDIV/STAFFDIV Overnight Reports:

CDC: NSTR

FDA: NSTR

Prepared by:

Secretary's Operations Center

U.S. Department of Health and Human Services (HHS)
Assistant Secretary for Preparedness and Response (ASPR)
200 Independence Ave., S.W.
Washington, D.C. 20201
Office: (202) 619 – 7800
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Email: hhs.soc@hhs.gov



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Prepared by:

Secretary's Operations Center

U.S. Department of Health and Human Services (HHS)
Assistant Secretary for Preparedness and Response (ASPR)
200 Independence Ave., S.W.
Washington, D.C. 20201
Office: (202) 619 – 7800
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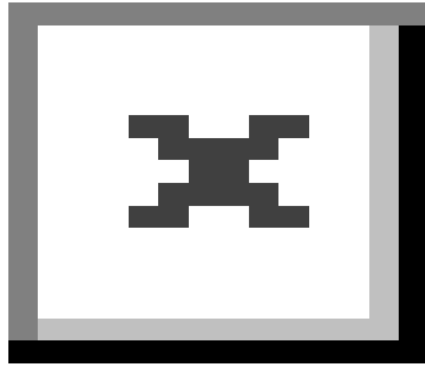
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To:	Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd.FYDIBOHF23SPDLT/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Lawler, James V <(b)(6)@unmc.edu>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>
CC:	Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <matthew.j.hepburn.civ@mail.mil>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)@me.com>
Subject:	RE: VA Projections using Cruise Ship Data
Date:	2020/03/01 07:21:39
Priority:	Normal
Type:	Note

Also have been thinking more about thresholds for pulling triggers.

I thought a but more about what James said about true prevalence—that it would be at lest twice as high as we currently think it is on the cruise ship. That would mean that true attack rate is closer to 40%, 80% of cases are asymptomatic, 6% of cases are hospitalized, 1% are critical (in ICU), and CFR is about 0.5%. But given the demographics of the cruise ship we are really the diluting effect of kids and young adults. They would be expected to have high attack rates and even higher rates of asymptomatic disease and mild disease (pushing up the % asymptomatics, reducing the overall hospitalization rate, ICU rate and CFR). So wanted to play with those estimates of thresholds again (will resend updated math).

Yesterday I was at my daughter's house helping them pull out vines that were planted as ground cover. The damn things grow everywhere, climbing up trees and smothering them (this isn't kudzu). My wife said something about these vines that made me think of what we are seeing in South Korea, Italy and now the US. When you plant these vines, they go thru 3 stages—sleep, creep, and leap. First year they don't seem to be doing much—they sleep (but they are laying down a root system that you cannot see). The next year they creep (seeing some spread above ground while the root system hidden from view continues to spread). And the next year they leap (the vines seem to explode everywhere you look).

That is exactly what Italy feels like (but speeded up). We are blind to what is "happening underground." The root system is really those dendrite transmission trees that Richard likes. I pulled out the Singapore graphic again of their contact tracing of cases (that is the root system). They have given up continuing to update that graphic and only providing linkages between cases when they provide brief summaries of individual cases. Probably getting to complex to show.



In the US we just pulled up three random roots that are far from any plants we can see above the surface. My concern is that we are at the cusp of “leap” and cases are going to start popping like popcorn wherever we look.

This gets to the timing of NPIs

I went back to the Philadelphia-St Louis comparison of 1918. The difference between Philadelphia and St. Louis in 1918 in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks. In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia, NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. A comparison of hospitalization rate looks a lot like Philadelphia and St. Louis.

Hong Kong confirmed its first case of a traveler from Wuhan on Jan 23 (symptom onset of Jan 18). They would later learn of their first case of local transmission with symptom onset on Jan 22. On Jan 25, within 1 week of the symptom onset of the first case of a traveler and within 3 days of symptom onset of the first local case, they were already taking actions like suspending the reopening of schools—they were a bit lucky because the schools were closed for the Chinese New Year. So they took aggressive actions within 1 week of first recognized case. There was a lot of activity in Hong Kong in the first 3 weeks of January (large number of suspected cases that they were monitoring but they were only had syndromic surveillance since there were no diagnostics early on. So Hong Kong had been busy isolating scores of patients during the first 3 weeks of January based only on clinical presentation.

Singapore confirmed its first case on January 23 (traveler from Wuhan). The individual had symptom onset on Jan 20 on a flight to Singapore. On Feb 3, Singapore confirmed its first case of local transmission. Symptom onset for that individual was on Jan 29. On Feb 7, Singapore identified additional cases of local transmission and declared Code Orange and intensifies response. So Singapore takes aggressive action two weeks after confirmation of 1st case in a traveler and within 4 days of first case of local transmission.

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From: Carter Mecher

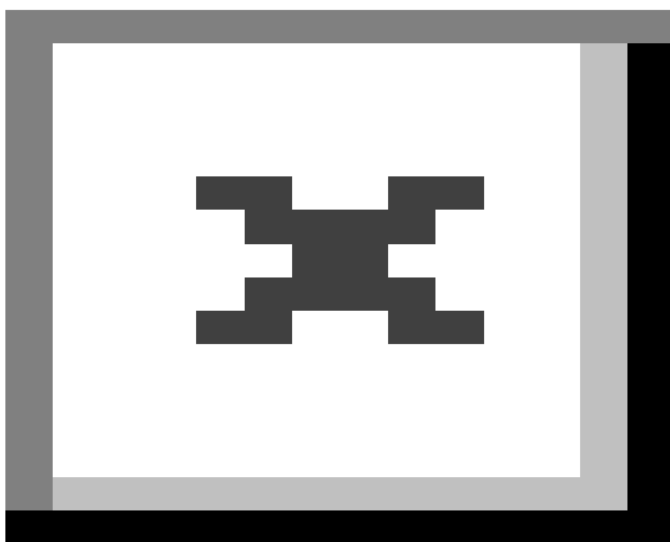
Sent: Sunday, March 1, 2020 5:58 AM

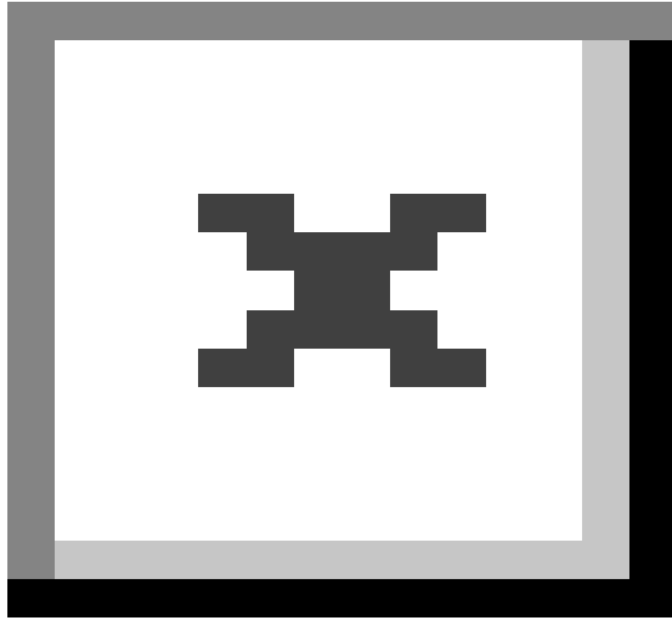
To: Caneva, Duane; Lawler, James V; Callahan, Michael V., M.D.; Dean, Charity A@CDPH

Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: RE: VA Projections using Cruise Ship Data

A few things for the group. Have been interested in whether we can see anything happening with flu surveillance (especially ILI) in places with COVID outbreaks, Am interested in looking at Japan, Hong Kong, Singapore, and Italy. So far, only found Hong Kong (Eva Lee found it). I will keep looking—really interested in South Korea and Italy to get a better sense of whether looking st ILI will be of any value. https://www.chp.gov.hk/files/pdf/fluexpress_week8_27_2_2020_eng.pdf This is data thru Feb 22 (week 8). Hong Kong is really do a good job of surveillance. And what they are doing in terms of NPIs seems to be working (just like Singapore).





Sent from [Mail](#) for Windows 10

From: [Caneva, Duane](#)

Sent: Saturday, February 29, 2020 11:18 PM

To: [Lawler, James V](#); [Carter Mecher](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: Re: VA Projections using Cruise Ship Data

+ Charity

CA seems first up.

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From: Lawler, James V <(b)(6)@unmc.edu>
Sent: Saturday, February 29, 2020 11:06:20 PM
To: Carter Mecher <(b)(6)@charter.net>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>
Cc: Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <duane.caneva@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

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Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is $1/5^{\text{th}}$ of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Date: Saturday, February 29, 2020 at 6:53 PM
To: "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>
Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is $1\% * 5\% = 0.05\%$. But it takes 2 weeks or so before a patient who is infected

becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\%/8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

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From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Callahan, m." (b)(6)@mgh.harvard.edu>

Date: Saturday, February 29, 2020 at 2:39 PM

To: "Lawler, James V" (b)(6)@unmc.edu>

Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Carter Mecher (b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Caneva, Duane" (b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better than poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital

Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V (b)(6)@unmc.edu>wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: "Marcozzi, David" (b)(6)@som.umaryland.edu>
Date: Saturday, February 29, 2020 at 5:11 AM
To: "Lawler, James V" (b)(6)@unmc.edu>, Carter Mecher (b)(6)@charter.net>,
Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)"
(b)(6)@mail.mil>, "Caneva, Duane" (b)(6)@hq.dhs.gov>, "Kadlec,
Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m."
(b)(6)@mgh.harvard.edu>, Tom Bossert (b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

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Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson

From: James Lawler <(b)(6)@unmc.edu>
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi <(b)(6)@som.umaryland.edu>, "matthew. hepburn" <(b)(6)@mail.mil>, Duane Caneva <(b)(6)@hq.dhs.gov>, Robert Kadlec <Robert.Kadlec@hhs.gov>, (b)(6)@mgh.harvard.edu" <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA
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From: Carter Mecher <(b)(6)@charter.net>
Sent: Friday, February 28, 2020 3:06:10 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Tom Bossert <(b)(6)@me.com>
Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	100%	3,672	100%	19,209,704	100%

The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported

to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- 600,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			

	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in IC
13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 te
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill asymptomatic

26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134
75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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The information in this e-mail may be privileged and confidential, intended only for the use of the addressee(s) above. Any unauthorized use or disclosure of this information is prohibited. If you have received this e-mail by mistake, please delete it and immediately contact the sender.

Sender:	Carter Mecher <(b)(6)@charter.net>
Recipient:	Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Lawler, James V <(b)(6)@unmc.edu>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)@me.com>
Sent Date:	2020/03/01 07:20:21
Delivered Date:	2020/03/01 07:21:39

From:	Lawler, James V (b)(6)@unmc.edu>
To:	Carter Mecher (b)(6)@charter.net>; Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd. (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. (b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>
CC:	Marcozzi, David (b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert (b)(6)@me.com>
Subject:	Re: VA Projections using Cruise Ship Data
Date:	2020/03/01 07:41:59
Priority:	Normal
Type:	Note

Listening to CNN “experts” this morning. They have no clue what they are talking about – saying that young people really shouldn’t worry and older/vulnerable folks are the only ones that should be changing behavior. No concept that our elders are depending on the actions of the entire community and also that once the healthcare system collapses, all of the services for which younger folks access that system will be gone as well. We have to get out in front of messaging.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: Carter Mecher (b)(6)@charter.net>
Date: Sunday, March 1, 2020 at 6:20 AM
To: "Caneva, Duane" (b)(6)@hq.dhs.gov>, "Lawler, James V" (b)(6)@unmc.edu>, "Callahan, m." (b)(6)@mgh.harvard.edu>, "Dean, Charity A@CDPH" <charity.dean@cdph.ca.gov>
Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert (b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

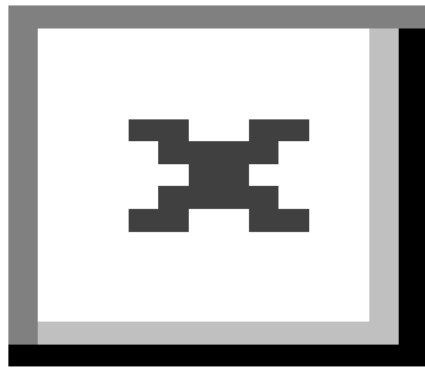
Also have been thinking more about thresholds for pulling triggers.

I thought a but more about what James said about true prevalence—that it would be at least twice as high as we currently think it is on the cruise ship. That would mean that true attack rate is closer to 40%, 80% of cases are asymptomatic, 6% of cases are hospitalized, 1% are critical (in ICU), and CFR is about 0.5%. But given the demographics of the cruise ship we are really the diluting effect of kids and young adults. They would be expected to have high attack rates and even higher rates of asymptomatic disease

and mild disease (pushing up the % asymptomatics, reducing the overall hospitalization rate, ICU rate and CFR). So wanted to play with those estimates of thresholds again (will resend updated math).

Yesterday I was at my daughter's house helping them pull out vines that were planted as ground cover. The damn things grow everywhere, climbing up trees and smothering them (this isn't kudzu). My wife said something about these vines that made me think of what we are seeing in South Korea, Italy and now the US. When you plant these vines, they go thru 3 stages—sleep, creep, and leap. First year they don't seem to be doing much—they sleep (but they are laying down a root system that you cannot see). The next year they creep (seeing some spread above ground while the root system hidden from view continues to spread). And the next year they leap (the vines seem to explode everywhere you look).

That is exactly what Italy feels like (but speeded up). We are blind to what is “happening underground.” The root system is really those dendrite transmission trees that Richard likes. I pulled out the Singapore graphic again of their contact tracing of cases (that is the root system). They have given up continuing to update that graphic and only providing linkages between cases when they provide brief summaries of individual cases. Probably getting to complex to show.



cid:image001.png@01D5EF91.940CA250

In the US we just pulled up three random roots that are far from any plants we can see above the surface. My concern is that we are at the cusp of “leap” and cases are going to start popping like popcorn wherever we look.

This gets to the timing of NPIs

I went back to the Philadelphia-St Louis comparison of 1918. The difference between Philadelphia and St. Louis in 1918 in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks. In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson

Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia, NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. A comparison of hospitalization rate looks a lot like Philadelphia and St. Louis.

Hong Kong confirmed its first case of a traveler from Wuhan on Jan 23 (symptom onset of Jan 18). They would later learn of their first case of local transmission with symptom onset on Jan 22. On Jan 25, within 1 week of the symptom onset of the first case of a traveler and within 3 days of symptom onset of the first local case, they were already taking actions like suspending the reopening of schools—they were a bit lucky because the schools were closed for the Chinese New Year. So they took aggressive actions within 1 week of first recognized case. There was a lot of activity in Hong Kong in the first 3 weeks of January (large number of suspected cases that they were monitoring but they were only had syndromic surveillance since there were no diagnostics early on. So Hong Kong had been busy isolating scores of patients during the first 3 weeks of January based only on clinical presentation.

Singapore confirmed its first case on January 23 (traveler from Wuhan). The individual had symptom onset on Jan 20 on a flight to Singapore. On Feb 3, Singapore confirmed its first case of local transmission. Symptom onset for that individual was on Jan 29. On Feb 7, Singapore identified additional cases of local transmission and declared Code Orange and intensifies response. So Singapore takes aggressive action two weeks after confirmation of 1st case in a traveler and within 4 days of first case of local transmission.

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From: Carter Mecher

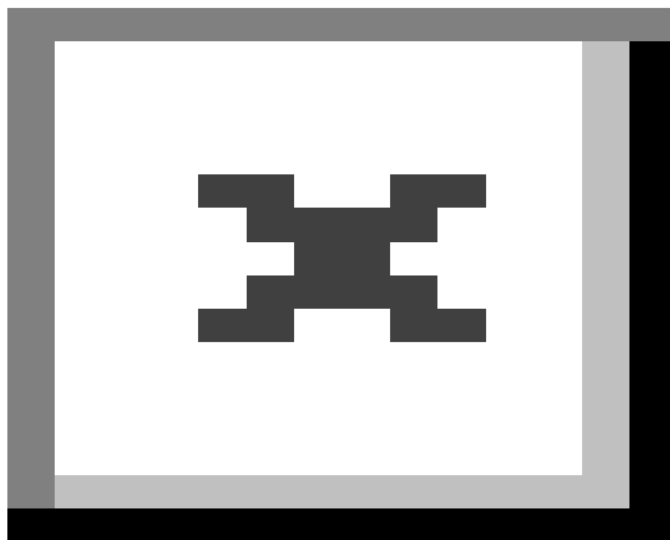
Sent: Sunday, March 1, 2020 5:58 AM

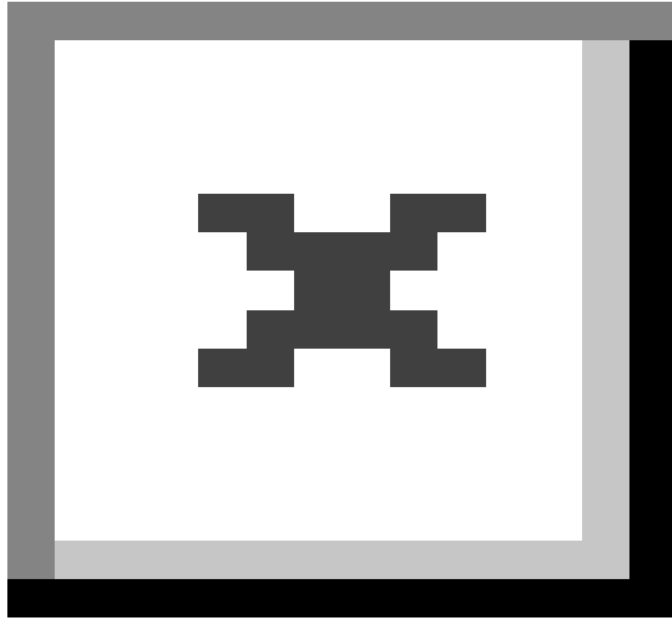
To: Caneva, Duane; Lawler, James V; Callahan, Michael V., M.D.; Dean, Charity A@CDPH

Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: RE: VA Projections using Cruise Ship Data

A few things for the group. Have been interested in whether we can see anything happening with flu surveillance (especially ILI) in places with COVID outbreaks, Am interested in looking at Japan, Hong Kong, Singapore, and Italy. So far, only found Hong Kong (Eva Lee found it). I will keep looking—really interested in South Korea and Italy to get a better sense of whether looking st ILI will be of any value. https://www.chp.gov.hk/files/pdf/fluexpress_week8_27_2_2020_eng.pdf [chp.gov.hk] This is data thru Feb 22 (week 8). Hong Kong is really do a good job of surveillance. And what they are doing in terms of NPIs seems to be working (just like Singapore).





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From: [Caneva, Duane](#)

Sent: Saturday, February 29, 2020 11:18 PM

To: [Lawler, James V](#); [Carter Mecher](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: Re: VA Projections using Cruise Ship Data

+ Charity

CA seems first up.

Get Outlook for iOS [aka.ms]

From: Lawler, James V (b)(6)@unmc.edu>
Sent: Saturday, February 29, 2020 11:06:20 PM
To: Carter Mecher (b)(6)@charter.net>; Callahan, Michael V., M.D. (b)(6)@mgh.harvard.edu>
Cc: Marcozzi, David (b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil>; Caneva, Duane (b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert (b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher (b)(6)@charter.net>
Date: Saturday, February 29, 2020 at 6:53 PM
To: "Lawler, James V" <james.lawler@unmc.edu>, "Callahan, m." (b)(6)@mgh.harvard.edu>
Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Caneva, Duane" (b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert (b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is 1%*5% = 0.05%. But it takes 2 weeks or so before a patient who is infected

becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\%/8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

Sent from Mail [go.microsoft.com] for Windows 10

From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Callahan, m." (b)(6)@mgh.harvard.edu>

Date: Saturday, February 29, 2020 at 2:39 PM

To: "Lawler, James V" (b)(6)@unmc.edu>

Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Carter Mecher

<(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Caneva, Duane"

(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert (b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better than poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital

Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V <(b)(6)>@unmc.edu>wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m:(b)(6)

(b)(6)<(b)(6)>@unmc.edu

From: "Marcozzi, David" <(b)(6)>@som.umaryland.edu>
Date: Saturday, February 29, 2020 at 5:11 AM
To: "Lawler, James V" <(b)(6)>@unmc.edu>, Carter Mecher <(b)(6)>@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)>@mail.mil>, "Caneva, Duane" <(b)(6)>@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m." <(b)(6)>@mgh.harvard.edu>, Tom Bossert <(b)(6)>@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
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Associate Chair of Population Health
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Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson

From: James Lawler (b)(6)@unmc.edu
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher (b)(6)@charter.net, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi (b)(6)@som.umaryland.edu, "matthew. hepburn" (b)(6)@mail.mil, Duane Caneva (b)(6)@hq.dhs.gov, Robert Kadlec <Robert.Kadlec@hhs.gov>, (b)(6)@mgh.harvard.edu (b)(6)@mgh.harvard.edu, Tom Bossert (b)(6)@me.com
Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Sent: Friday, February 28, 2020 3:06:10 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Tom Bossert <(b)(6)@me.com>
Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	100%	3,672	100%	19,209,704	100%

The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226

Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- 600,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in 10

13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 te
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134
75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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The information in this e-mail may be privileged and confidential, intended only for the use of the addressee(s) above. Any unauthorized use or disclosure of this information is prohibited. If you have received this e-mail by mistake, please delete it and immediately contact the sender.

Sender:	Lawler, James V <(b)(6)>@unmc.edu>
Recipient:	Carter Mecher <(b)(6)>@charter.net>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. <(b)(6)>@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>; Marcozzi, David <(b)(6)>@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)>@mail.mil>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)>@me.com>
Sent Date:	2020/03/01 07:41:20
Delivered Date:	2020/03/01 07:41:59

From:	Carter Mecher <(b)(6)@charter.net>
To:	Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd.FYDIBOHF23SPDLT/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Lawler, James V <(b)(6)@unmc.edu>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>
CC:	Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)@me.com>
Subject:	RE: VA Projections using Cruise Ship Data
Date:	2020/03/01 07:54:20
Priority:	Normal
Type:	Note

Second try with the math adjusting for true prevalence being double what we think it is on the cruise ship.

So assumptions are 80% asymptomatic, 6% hospitalized, 1% critical, 0.4% CFR. Part of this assumption is that true prevalence using serology will prove to be significantly greater than prevalence based on current diagnostics (swabs) and asymptomatic/mild disease. In the age groups under-represented on the cruise ship will dilute the numbers we are estimating from the cruise ship. [So this is a bit of SWAG.]

We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 80% asymptomatics, so the threshold is really 0.2% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 1% of those who are infected have severe disease, that means our threshold is $1\% \times 1\% = 0.01\%$. But it takes 2 weeks or so before a patient who is infected becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.01\% / 8 = 0.00125\%$. For a city of 1 M, that is 12 serious cases, 250 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 100 serious, 2,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.4%, so about 1 death. More than 1 death per million population is probably too late.

We can work backwards from the first critically ill case involving local transmission and no linkage to a known case. If our threshold is 15 cases of seriously ill individuals (really ICU cases), and cases increase by a factor of 8 over a period of about 2 weeks, the far end of the window is about 2 weeks from when you identify 2 critically ill cases. To give you a cushion, I would be ready to pull the trigger within 2 weeks of the first critically ill patient. If we look at the case in CA, that patient had been critically ill for at least a week. That means they had about a week from recognition until the windows starts to close. I would have pulled the trigger in Fairview.

So think of time to act.

1. • By the time you identify the first death per million population in someone with local transmission (no linkage to a known case), you need to pull the trigger on NPIs. Looking at Seattle (population of city of Seattle of 740K and population of metro Seattle of 3.5M), I would pull the trigger very soon—the window is very close to closing.
2. • No later than 2 weeks from the confirmation of the first critically ill patient per million population. The window is very close to closing for Fairview CA.

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Sunday, March 1, 2020 7:20 AM

To: [Caneva, Duane](#); [Lawler, James V](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

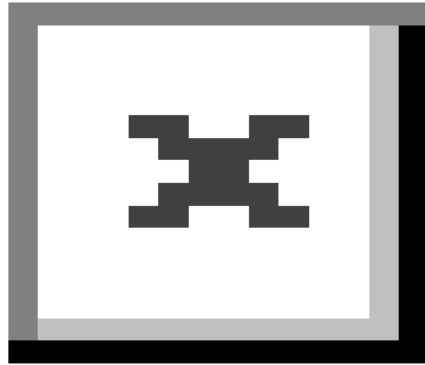
Subject: RE: VA Projections using Cruise Ship Data

Also have been thinking more about thresholds for pulling triggers.

I thought a but more about what James said about true prevalence—that it would be at least twice as high as we currently think it is on the cruise ship. That would mean that true attack rate is closer to 40%, 80% of cases are asymptomatic, 6% of cases are hospitalized, 1% are critical (in ICU), and CFR is about 0.5%. But given the demographics of the cruise ship we are really the diluting effect of kids and young adults. They would be expected to have high attack rates and even higher rates of asymptomatic disease and mild disease (pushing up the % asymptomatics, reducing the overall hospitalization rate, ICU rate and CFR). So wanted to play with those estimates of thresholds again (will resend updated math).

Yesterday I was at my daughter's house helping them pull out vines that were planted as ground cover. The damn things grow everywhere, climbing up trees and smothering them (this isn't kudzu). My wife said something about these vines that made me think of what we are seeing in South Korea, Italy and now the US. When you plant these vines, they go thru 3 stages—sleep, creep, and leap. First year they don't seem to be doing much—they sleep (but they are laying down a root system that you cannot see). The next year they creep (seeing some spread above ground while the root system hidden from view continues to spread). And the next year they leap (the vines seem to explode everywhere you look).

That is exactly what Italy feels like (but speeded up). We are blind to what is “happening underground.” The root system is really those dendrite transmission trees that Richard likes. I pulled out the Singapore graphic again of their contact tracing of cases (that is the root system). They have given up continuing to update that graphic and only providing linkages between cases when they provide brief summaries of individual cases. Probably getting to complex to show.



In the US we just pulled up three random roots that are far from any plants we can see above the surface. My concern is that we are at the cusp of “leap” and cases are going to start popping like popcorn wherever we look.

This gets to the timing of NPIs

I went back to the Philadelphia-St Louis comparison of 1918. The difference between Philadelphia and St. Louis in 1918 in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks. In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia, NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. A comparison of hospitalization rate looks a lot like Philadelphia and St. Louis.

Hong Kong confirmed its first case of a traveler from Wuhan on Jan 23 (symptom onset of Jan 18). They would later learn of their first case of local transmission with symptom onset on Jan 22. On Jan 25, within 1 week of the symptom onset of the first case of a traveler and within 3 days of symptom onset of the first local case, they were already taking actions like suspending the reopening of schools—they were a bit lucky because the schools were closed for the Chinese New Year. So they took aggressive actions within 1 week of first recognized case. There was a lot of activity in Hong Kong in the first 3 weeks of January (large number of suspected cases that they were monitoring but they were only had syndromic surveillance since there were no diagnostics early on. So Hong Kong had been busy isolating scores of patients during the first 3 weeks of January based only on clinical presentation.

Singapore confirmed its first case on January 23 (traveler from Wuhan). The individual had symptom onset on Jan 20 on a flight to Singapore. On Feb 3, Singapore confirmed its first case of local transmission. Symptom onset for that individual was on Jan 29. On Feb 7, Singapore identified additional cases of local transmission and declared Code Orange and intensifies response. So Singapore takes aggressive action two weeks after confirmation of 1st case in a traveler and within 4 days of first case of local transmission.

Sent from Mail for Windows 10

From: Carter Mecher

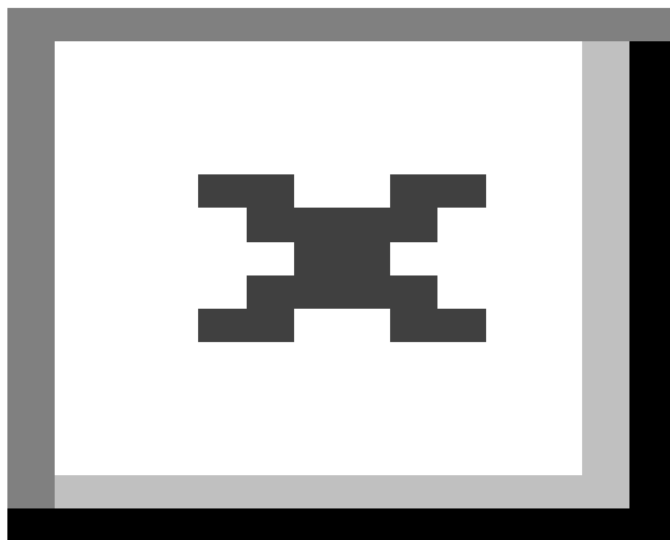
Sent: Sunday, March 1, 2020 5:58 AM

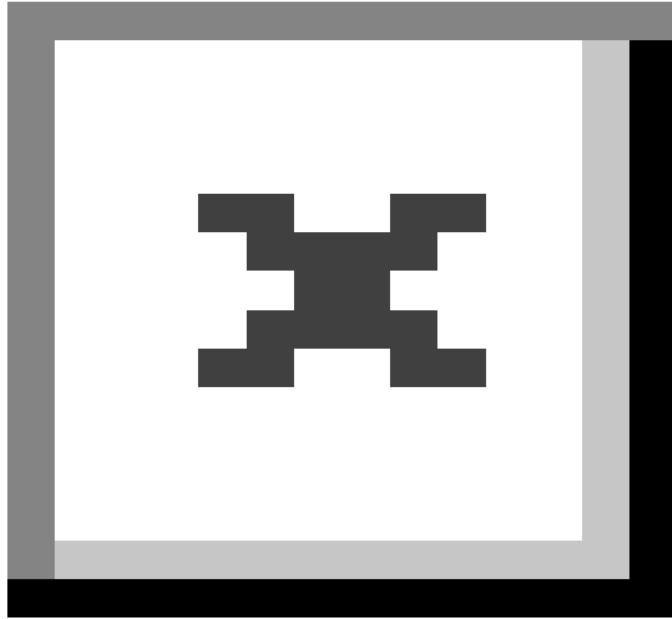
To: Caneva, Duane; Lawler, James V; Callahan, Michael V., M.D.; Dean, Charity A@CDPH

Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: RE: VA Projections using Cruise Ship Data

A few things for the group. Have been interested in whether we can see anything happening with flu surveillance (especially ILI) in places with COVID outbreaks, Am interested in looking at Japan, Hong Kong, Singapore, and Italy. So far, only found Hong Kong (Eva Lee found it). I will keep looking—really interested in South Korea and Italy to get a better sense of whether looking st ILI will be of any value. https://www.chp.gov.hk/files/pdf/fluexpress_week8_27_2_2020_eng.pdf This is data thru Feb 22 (week 8). Hong Kong is really do a good job of surveillance. And what they are doing in terms of NPIs seems to be working (just like Singapore).





Sent from [Mail](#) for Windows 10

From: [Caneva, Duane](#)

Sent: Saturday, February 29, 2020 11:18 PM

To: [Lawler, James V](#); [Carter Mecher](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: Re: VA Projections using Cruise Ship Data

+ Charity

CA seems first up.

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From: Lawler, James V (b)(6)@unmc.edu
Sent: Saturday, February 29, 2020 11:06:20 PM
To: Carter Mecher (b)(6)@charter.net; Callahan, Michael V., M.D. (b)(6)@mgh.harvard.edu
Cc: Marcozzi, David (b)(6)@som.umaryland.edu; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil; Caneva, Duane (b)(6)@hq.dhs.gov; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert (b)(6)@me.com
Subject: Re: VA Projections using Cruise Ship Data

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Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher (b)(6)@charter.net
Date: Saturday, February 29, 2020 at 6:53 PM
To: "Lawler, James V" (b)(6)@unmc.edu, "Callahan, m." (b)(6)@mgh.harvard.edu
Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil, "Caneva, Duane" (b)(6)@hq.dhs.gov, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert (b)(6)@me.com
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is 1%*5% = 0.05%. But it takes 2 weeks or so before a patient who is infected

becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\%/8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

Sent from Mail [go.microsoft.com] for Windows 10

From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Callahan, m." (b)(6)@mgh.harvard.edu>

Date: Saturday, February 29, 2020 at 2:39 PM

To: "Lawler, James V" (b)(6)@unmc.edu>

Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Carter Mecher

(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Caneva, Duane"

(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert (b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better than poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital

Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V <(b)(6)>@unmc.edu> wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)<(b)(6)>@unmc.edu

From: "Marcozzi, David" <(b)(6)>@som.umaryland.edu>
Date: Saturday, February 29, 2020 at 5:11 AM
To: "Lawler, James V" <(b)(6)>@unmc.edu>, Carter Mecher <(b)(6)>@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)>@mail.mil>, "Caneva, Duane" <(b)(6)>@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m." <(b)(6)>@mgh.harvard.edu>, Tom Bossert <(b)(6)>@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
Associate Professor
Associate Chair of Population Health
Department of Emergency Medicine
University of Maryland School of Medicine
<https://em.umaryland.edu> [em.umaryland.edu]

Associate Professor
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Deputy Medical Director for Mobile Integrated Health/Community Paramedicine
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<https://protect2.fireeye.com/url?k=ba8fa4cb-e6dbbdb7-ba8f95f4-0cc47adc5fa2-2d70178bfdbfbac7&u=https://fire.baltimorecity.gov/mobile-integrated-health-community-paramedicine>
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Baltimore, Maryland 21201
(667)-214-2208 (office)

(b)(6) @som.umaryland.edu

Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson

From: James Lawler (b)(6) @unmc.edu
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher (b)(6) @charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi (b)(6) @som.umaryland.edu>, "matthew. hepburn" (b)(6) @mail.mil>, Duane Caneva <(b)(6) @hq.dhs.gov>, Robert Kadlec <Robert.Kadlec@hhs.gov>, (b)(6) @mgh.harvard.edu" (b)(6) @mgh.harvard.edu>, Tom Bossert <(b)(6) @me.com>
Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m: (b)(6)
(b)(6) @unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Sent: Friday, February 28, 2020 3:06:10 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Tom Bossert <(b)(6)@me.com>
Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	100%	3,672	100%	19,209,704	100%

The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported

to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- 600,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			

	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in IC
13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 te
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill asymptomatic

26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134
75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

Sent from [Mail \[go.microsoft.com\]](mailto:Mail [go.microsoft.com]) for Windows 10

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Sender:	Carter Mecher <(b)(6)@charter.net>
Recipient:	Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Lawler, James V <(b)(6)@unmc.edu>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)@me.com>
Sent Date:	2020/03/01 07:54:04
Delivered Date:	2020/03/01 07:54:20

From:	Mike Allen <mike@axios.com>
To:	Harrison, Brian (HHS/IOS) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d145efc9c35c4865aca6e9d47786b204-Harrison, B>
Subject:	Axios AM: Mike's Great 8 — Super Tuesday suddenly looks different — Virus preppers
Date:	2020/03/01 08:17:30
Priority:	Normal
Type:	Note

AXIOS Axios

Axi

By Mike

☐ **Happy Sunday**, and welcome to March!

• • **Today's Smart Brevity™ count:** 1,384 words ... 5 minutes.

☐ **"Axios on HBO"** Season 3 premieres tonight at 6 ET/PT.

- • **See a clip** from Alexi McCammond's interview with Harvey Weinstein prosecutor Cy V
- • **See a clip** from my interview with Roger Stone.
- • **We also take** a wild look inside a Trump rally.

1 big thing: Super Tuesday suddenly looks different



Joe and Jill Biden celebrate last night in Columbia, S.C. Photo: Spencer Platt

Joe Biden's landslide in the South Carolina primary (won every county, and took 48% to Ben Carson, 20% to Mike Bloomberg and could slow Sanders' runaway train.

- • **The first-in-the-South** blowout could give new life to Biden's withering electability and momentum, McCammond and Stef Kight write.

Between the lines: It's not at all clear Biden can carry this win beyond a state where he has lost.

- • **With Super Tuesday** just two days away, Biden is almost out of time to raise the momentum.
- • **There's no sign** Biden's moderate rivals will drop out beforehand. That could help Sanders.

Bloomberg campaign manager Kevin Sheekey said Bloomberg still fully intends to compete.

- • **The Bloomberg campaign's** internal data suggests if he dropped out now, it actually would hurt Biden.
- • **The explanation:** Bloomberg draws votes away from Sanders as well as Biden. And in

1 fun thing: "Move On Up," Curtis Mayfield's 1970s soul hit with black-pride appeal and a reggae

• • *Share this story.*

Total pledged delegates for 2020 Democratic candidates

Updated March 19, 11:20 am EDT

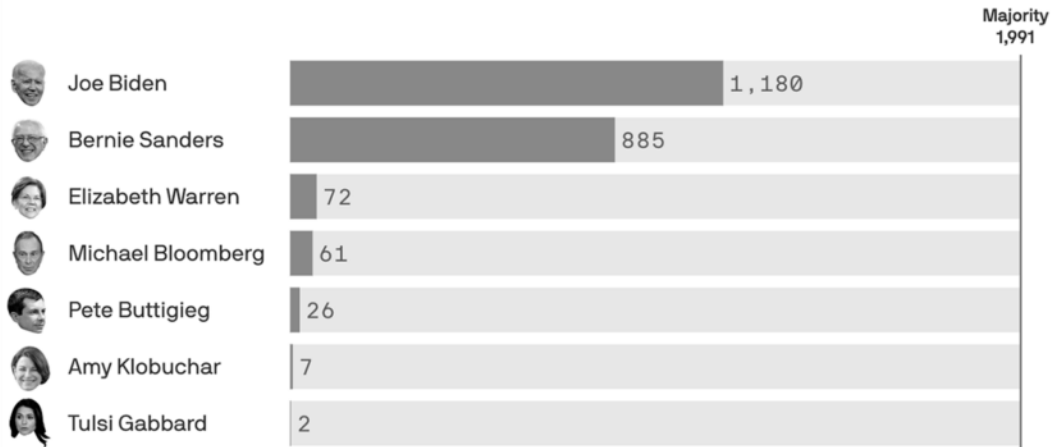


Chart: Naema Ahmed/Axios



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2. Peter Hamby: Inside Biden's big win



Biden's bash at the University of South Carolina's volleyball center. Photo: Scott Olson/Getty Images

Snapchat's Peter Hamby, host of "Good Luck America," sends Axios this dispatch from Biden's victory event:

Joe Biden can now make the case he's got a coalition: black voters, older voters and the type of voters who won in 2018.

- • **7 p.m. ET**, when the race was called, was the Biden campaign's biggest hour of online traffic.
- • **The campaign's digital director**, Rob Flaherty, tweeted that the campaign's "No More Biden" strategy was working.

Why it matters: Biden desperately needs the money and earned-media bump before Super Tuesday in Arkansas, Georgia, North Carolina, Tennessee, Texas and Virginia — targeting majority-black counties.

- • **A week of TV ads** in L.A. alone can cost \$3 million.

The intrigue: One buzzy question flying around the room at Biden's victory event was whether he'll keep Biden on the sidelines for his vice president?

- • **Between the lines:** Plenty of Democrats here told Hamby that last week's news coverage was a

their choice.

By the numbers: The South Carolina electorate was 5% *whiter* than it was 2016 — something

- • **They were swing-y** suburban moderates — affluent college-educated whites — who li since Trump's election.
- • **Independents** made up 10% more of the electorate than in 2016, and moderate/conservative
- • **There were more** first-time primary voters than in 2016, and Biden won them by 7 p
- • **Exit polling** put 61% of the African-American vote with Biden, with Sanders at 16%, p

As in Iowa, with precincts outside Des Moines, the surge in the Democratic primary was from

- • **Absentee ballot data** showed white, Democratic turnout in South Carolina more than

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3. Why the U.S. doesn't have a coronavirus shutdown — y



A Shanghai taxi isolates the back seat with a plastic sheet. Photo: Yifan Ding/Getty Images

We still don't know a lot about the coronavirus, making contingency planning a lot harder, and

- • **We don't know** how widely the virus is spreading undetected, which makes it more in
 - • **But experts say** we're also not at a place where closing schools, requiring telecommut
 - • **"There's a lot of panic and concern,** but there's no indication that these more dran
- Chicago.

The latest: President Trump increased travel restrictions to Iran and authorized "do not travel" for U.S. citizens to the southern border with Mexico.

- • **Washington Gov. Jay Inslee** declared a state of emergency after a man died there of coronavirus, with the man being tested for the virus. (AP)
- • **A source in yesterday's** Trump's coronavirus task force meeting in the Situation Room said that the political options that the politicians were bouncing off each other.

The bottom line: The flu is infecting and killing more people, but the coronavirus has a higher

- • **That mortality rate** could be incorrect, though, because we don't know how many pe

China's restrictions helped slow the spread, but would be tough to enforce in the U.S. for ma

- • *Share this story.*



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A MESSAGE FROM MIKE BLOOMBERG 2020

Mike Bloomberg routinely takes on the gun lobby



Like most Americans, Mike Bloomberg supports common sense gun laws that:

- • Make going to school safe again.
- • Take on gun violence in the hard-hit communities.
- • Keep guns out of the wrong hands.

And he wants to do all this while upholding the Second Amendment. Learn how.

Paid for by Mike Bloomberg 2020.

4. This is what democracy looks like

South Carolina votes ...



Photos (clockwise from upper left): Eric Thayer/Reuters, Joshua Lott/AFP via Getty Images, Patrick Semansky/AP, Sean R

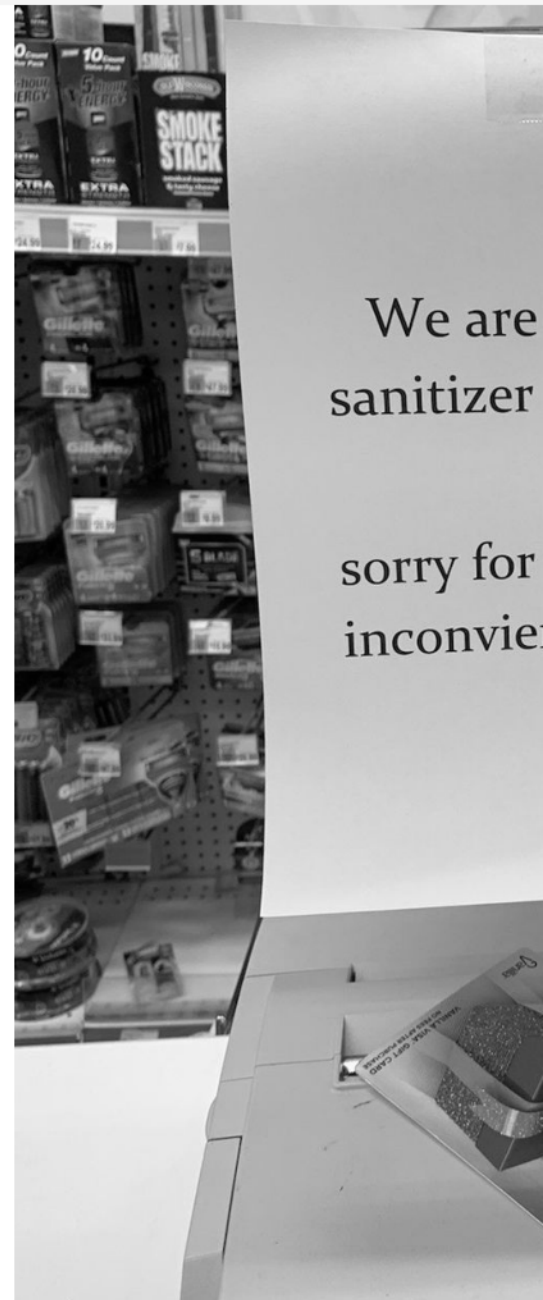


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5. Nation on edge: Virus preppers



Duane Reade on Upper East Side. Axios AM reader photo by Rob Saliterman

Shoppers nationwide are buying out Clorox wipes, sprays and bleach.

- • **Shortages of** hand sanitizer and fitted N95 face masks began in early February, CVS s

The N.Y. Times added this editors' note to an opinion piece, "How to Be a Smart Coronavirus

An earlier version of this essay suggested people buy face masks to prepare for a coronavirus qu

to stop buying masks.

That refers to this tweet:



U.S. Surgeon General ✓
@Surgeon_General

Seriously people- STOP

They are NOT effective
from catching #Corona
providers can't get them
puts them and our com



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6. World on edge: Fanless games



Start of Tokyo Marathon in 2019 (left) and today (right). Photos: Kyodo via Reuters, Charly Triballeau/Pool via Reuters

Pro sports leagues in Italy (soccer) and South Korea (basketball) are playing televised games coronavirus. (AP)

• • **Here's a list** of sporting events that have been disrupted around the world, from arche

🔗 **"Friendly kissing** poses European dilemma as virus spreads."



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7. Laurene Powell Jobs: "I'm not interested in legacy wealth"



Photo: Michael Cohen/Getty Images

Laurene Powell Jobs, founder and president of the Emerson Collective (an investor in Axios, Washington's Wizards, Mystics and Capitals), and is funding efforts on immigration, education

She says in a "Corner Office" interview in today's New York Times that she has philanthropic p

She is a Silicon Valley billionaire, pushing back against the wealthy occupant of the White House

"It's not right for individuals to accumulate a massive amount of wealth that's equivalent to mill

"I inherited my wealth from my husband, who didn't care about the accumulation of wealth," sh

"I'm not interested in legacy wealth buildings, and my children know that," she added. "Steve w

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8.  1 fun thing



Photo: Will Heath/NBC via Getty Images

The "Saturday Night Live" cold open was a coronavirus press conference with a dash of a D

- • **"Vice President Pence":** "We've assembled a very experienced team of some of the b
- • **"Elizabeth Warren"** to Mike Bloomberg: "I might be fifth in the polls, but I'm Numb
- • **"Joe Biden":** "Guess who just kicked butt in South Cracker Barrel?"

YouTube.



Photo: Will Heath/NBC via Getty Images



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A MESSAGE FROM MIKE BLOOMBERG 2020

The one Democrat scaring President Trump



Mike Bloomberg is getting high marks in the polls, leaving President Trump in the dust

The reason: Bloomberg has a proven track record of steady leadership, both in business and a

Paid for by Mike Bloomberg 2020.

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Sender:	Mike Allen <mike@axios.com>
Recipient:	Harrison, Brian (HHS/IOS) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d145efc9c35c4865aca6e9d47786b204-Harrison, B>
Sent Date:	2020/03/01 08:17:23
Delivered Date:	2020/03/01 08:17:30

From:	Carter Mecher <(b)(6)@charter.net>
To:	Lawler, James V <(b)(6)@unmc.edu>; Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd. (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>
CC:	Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)@me.com>
Subject:	RE: VA Projections using Cruise Ship Data
Date:	2020/03/01 08:18:05
Priority:	Normal
Type:	Note

Lisa did a great job pulling together guidance for healthcare facilities. I did share a lot of the things you all were thinking about.

<https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/index.html>

Look thru it—you will even find burst and coast in there.

Sent from Mail for Windows 10

From: Lawler, James V
Sent: Sunday, March 1, 2020 7:41 AM
To: Carter Mecher; Caneva, Duane; Callahan, Michael V., M.D.; Dean, Charity A@CDPH
Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Kadlec, Robert (OS/ASPR/IO); Tom Bossert
Subject: Re: VA Projections using Cruise Ship Data

Listening to CNN “experts” this morning. They have no clue what they are talking about – saying that young people really shouldn’t worry and older/vulnerable folks are the only ones that should be changing behavior. No concept that our elders are depending on the actions of the entire community and also that once the healthcare system collapses, all of the services for which younger folks access that system will be gone as well. We have to get out in front of messaging.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Date: Sunday, March 1, 2020 at 6:20 AM
To: "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, "Dean, Charity

A@CDPH" <charity.dean@cdph.ca.gov>

Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Richard Hatchett
<richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)"

(b)(6)@mail.mil>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>,
Tom Bossert (b)(6)@me.com>

Subject: RE: VA Projections using Cruise Ship Data

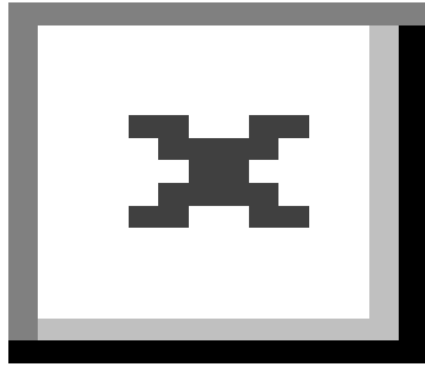
Non-UNMC email

Also have been thinking more about thresholds for pulling triggers.

I thought a but more about what James said about true prevalence—that it would be at least twice as high as we currently think it is on the cruise ship. That would mean that true attack rate is closer to 40%, 80% of cases are asymptomatic, 6% of cases are hospitalized, 1% are critical (in ICU), and CFR is about 0.5%. But given the demographics of the cruise ship we are really the diluting effect of kids and young adults. They would be expected to have high attack rates and even higher rates of asymptomatic disease and mild disease (pushing up the % asymptomatics, reducing the overall hospitalization rate, ICU rate and CFR). So wanted to play with those estimates of thresholds again (will resend updated math).

Yesterday I was at my daughter's house helping them pull out vines that were planted as ground cover. The damn things grow everywhere, climbing up trees and smothering them (this isn't kudzu). My wife said something about these vines that made me think of what we are seeing in South Korea, Italy and now the US. When you plant these vines, they go thru 3 stages—sleep, creep, and leap. First year they don't seem to be doing much—they sleep (but they are laying down a root system that you cannot see). The next year they creep (seeing some spread above ground while the root system hidden from view continues to spread). And the next year they leap (the vines seem to explode everywhere you look).

That is exactly what Italy feels like (but speeded up). We are blind to what is "happening underground." The root system is really those dendrite transmission trees that Richard likes. I pulled out the Singapore graphic again of their contact tracing of cases (that is the root system). They have given up continuing to update that graphic and only providing linkages between cases when they provide brief summaries of individual cases. Probably getting to complex to show.



cid:image001.png@01D5EF91.940CA250

In the US we just pulled up three random roots that are far from any plants we can see above the surface. My concern is that we are at the cusp of “leap” and cases are going to start popping like popcorn wherever we look.

This gets to the timing of NPIs

I went back to the Philadelphia-St Louis comparison of 1918. The difference between Philadelphia and St. Louis in 1918 in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks. In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia, NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. A comparison of hospitalization rate looks a lot like Philadelphia and St. Louis.

Hong Kong confirmed its first case of a traveler from Wuhan on Jan 23 (symptom onset of Jan 18). They would later learn of their first case of local transmission with symptom onset on Jan 22. On Jan 25, within 1 week of the symptom onset of the first case of a traveler and within 3 days of symptom onset of the first local case, they were already taking actions like suspending the reopening of schools—they were a bit lucky because the schools were closed for the Chinese New Year. So they took aggressive actions within 1 week of first recognized case. There was a lot of activity in Hong Kong in the first 3 weeks of January (large number of suspected cases that they were monitoring but they were only had

syndromic surveillance since there were no diagnostics early on. So Hong Kong had been busy isolating scores of patients during the first 3 weeks of January based only on clinical presentation.

Singapore confirmed its first case on January 23 (traveler from Wuhan). The individual had symptom onset on Jan 20 on a flight to Singapore. On Feb 3, Singapore confirmed its first case of local transmission. Symptom onset for that individual was on Jan 29. On Feb 7, Singapore identified additional cases of local transmission and declared Code Orange and intensifies response. So Singapore takes aggressive action two weeks after confirmation of 1st case in a traveler and within 4 days of first case of local transmission.

Sent from [Mail \[go.microsoft.com\]](mailto:Mail [go.microsoft.com]) for Windows 10

From: [Carter Mecher](#)

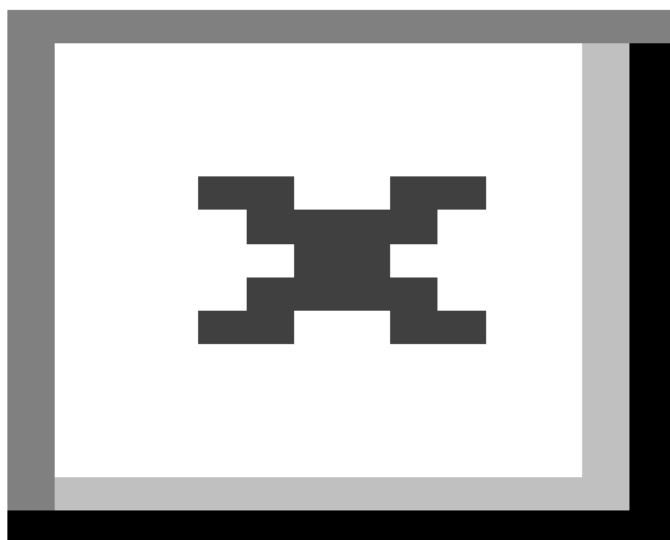
Sent: Sunday, March 1, 2020 5:58 AM

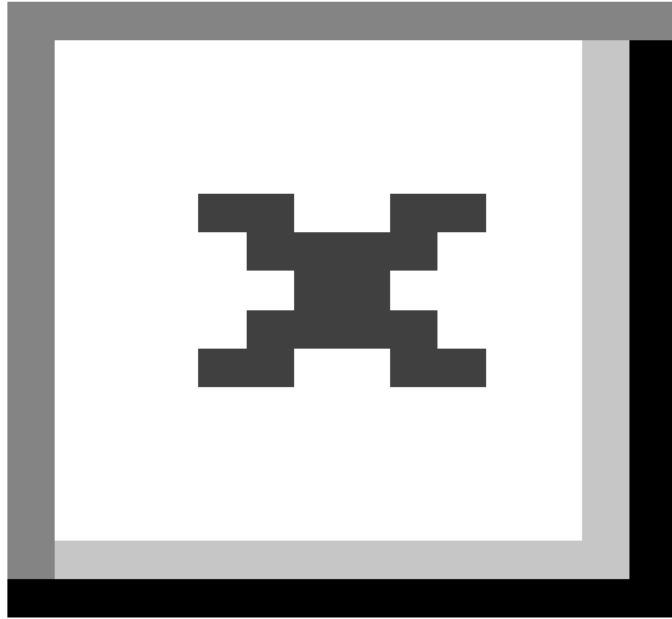
To: [Caneva, Duane](#); [Lawler, James V](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: RE: VA Projections using Cruise Ship Data

A few things for the group. Have been interested in whether we can see anything happening with flu surveillance (especially ILI) in places with COVID outbreaks, Am interested in looking at Japan, Hong Kong, Singapore, and Italy. So far, only found Hong Kong (Eva Lee found it). I will keep looking—really interested in South Korea and Italy to get a better sense of whether looking st ILI will be of any value. https://www.chp.gov.hk/files/pdf/fluexpress_week8_27_2_2020_eng.pdf [chp.gov.hk] This is data thru Feb 22 (week 8). Hong Kong is really do a good job of surveillance. And what they are doing in terms of NPIs seems to be working (just like Singapore).





Sent from [Mail \[go.microsoft.com\]](mailto:Mail [go.microsoft.com]) for Windows 10

From: [Caneva, Duane](#)

Sent: Saturday, February 29, 2020 11:18 PM

To: [Lawler, James V](#); [Carter Mecher](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: Re: VA Projections using Cruise Ship Data

+ Charity

CA seems first up.

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From: Lawler, James V <(b)(6)@unmc.edu>
Sent: Saturday, February 29, 2020 11:06:20 PM
To: Carter Mecher <(b)(6)@charter.net>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>
Cc: Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Date: Saturday, February 29, 2020 at 6:53 PM
To: "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>
Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is 1%*5% = 0.05%. But it takes 2 weeks or so before a patient who is infected

becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\%/8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

Sent from Mail [go.microsoft.com] for Windows 10

From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Callahan, m." <(b)(6)@mgh.harvard.edu>

Date: Saturday, February 29, 2020 at 2:39 PM

To: "Lawler, James V" <(b)(6)@unmc.edu>

Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Carter Mecher

<(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane"

<(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better than poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital

Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V <(b)(6)@unmc.edu> wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: "Marcozzi, David" <(b)(6)@som.umaryland.edu>
Date: Saturday, February 29, 2020 at 5:11 AM
To: "Lawler, James V" <(b)(6)@unmc.edu>, Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
Associate Professor
Associate Chair of Population Health
Department of Emergency Medicine
University of Maryland School of Medicine
<https://em.umaryland.edu> [em.umaryland.edu]

Associate Professor
Department of Epidemiology and Public Health
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Assistant Chief Medical Officer for Acute Care
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Deputy Medical Director for Mobile Integrated Health/Community Paramedicine
Baltimore City Fire Department
<https://protect2.fireeye.com/url?k=c7bed4d9-9bebdd09-c7bee5e6-0cc47a6a52de-f441107fdf28ff22&u=https://fire.baltimorecity.gov/mobile-integrated-health-community-paramedicine>
[fire.baltimorecity.gov]

Mailing Address:
6th floor, Suite 200
110 South Paca Street
Baltimore, Maryland 21201
(667)-214-2208 (office)

(b)(6) @som.umaryland.edu

Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson

From: James Lawler (b)(6)@unmc.edu
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher (b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi (b)(6)@som.umaryland.edu>, "matthew. hepburn" (b)(6)@mail.mil>, Duane Caneva (b)(6)@hq.dhs.gov>, Robert Kadlec <Robert.Kadlec@hhs.gov>, (b)(6)@mgh.harvard.edu" (b)(6)@mgh.harvard.edu>, Tom Bossert (b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m: (b)(6)
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From: Carter Mecher <(b)(6)@charter.net>
Sent: Friday, February 28, 2020 3:06:10 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Tom Bossert <(b)(6)@me.com>
Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	100%	3,672	100%	19,209,704	100%

The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported

to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- 600,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			

	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in IC
13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 te
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill asymptomatic

26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134
75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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Sender:	Carter Mecher <(b)(6)@charter.net>
Recipient:	Lawler, James V <(b)(6)@unmc.edu>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)@me.com>
Sent Date:	2020/03/01 08:17:44
Delivered Date:	2020/03/01 08:18:05

From:	Kadlec, Robert (OS/ASPR/IO) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A182EDA693D040D3832BAE6EFCF7A255-KADLEC, ROB>
To:	OS ASPR IHR Program </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f1decbf12bcf4166892021d2533c739c-ASPRIHRProg>
CC:	Phillips, Sally (OS/ASPR/SPPR) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5d6ce8134846423cb83b5b28464edb60-Phillips, S>; DeBord, Kristin (OS/ASPR/SPPR) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d2cce28859884c1c835a9404885d6534-DeBord, Kri>; Moudy, Robin (OS/ASPR/SPPR) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d421d3e0f6474bc3857583cfc5870d69-Moudy, Robi>; Shuy, Bryan (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fdeb5ca04b6b4ed19fec2209b5f571e7-Shuy, Bryan>
Subject:	RE: Dr. Kadlec's APPROVAL REQUIRED: Notifying WHO of Updated Temporary Health Measures
Date:	2020/03/01 08:18:00
Priority:	Normal
Type:	Note

Approved Kadlec Sends

From: OS ASPR IHR Program <hhs.ihrp@hhs.gov>
Sent: Sunday, March 1, 2020 7:53 AM
To: Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>
Cc: Phillips, Sally (OS/ASPR/SPPR) <Sally.Phillips@hhs.gov>; DeBord, Kristin (OS/ASPR/SPPR) <Kristin.DeBord@hhs.gov>; Moudy, Robin (OS/ASPR/SPPR) <Robin.Moudy@hhs.gov>; OS ASPR IHR Program <hhs.ihrp@hhs.gov>; Shuy, Bryan (OS/ASPR/IO) <Bryan.Shuy@hhs.gov>
Subject: Dr. Kadlec's APPROVAL REQUIRED: Notifying WHO of Updated Temporary Health Measures

Good Morning Dr. Kadlec –

The U.S. IHR National Focal Point Program is writing to you as the message authorizing official for all official IHR communications with the World Health Organization (WHO) for approval of the below message to WHO informing them of the updated temporary health measures the United States has implemented in response to the ongoing COVID-19 outbreak. This message is consistent to the previous approved message sent February 1st, 2020 notifying WHO of the original temporary health measures.

On Behalf of the ASPR IHR Program,

Adam Tewell

PROPOSED MESSAGE TO WHO:

SUBJECT: NOTIFICATION - United States – Temporary Health Measures - Update

Dear WHO Colleagues:

Pursuant to the International Health Regulations, Article 43, the U.S. IHR National Focal Point is notifying the World Health Organization of an update to the previous temporary health measures the United States implemented in response to the ongoing COVID-19 outbreak. These updated measures become effective at 5:00 p.m. (EST) on March 2, 2020.

Presidential Proclamation:

<https://www.whitehouse.gov/presidential-actions/proclamation-suspension-entry-immigrants-nonimmigrants-certain-additional-persons-pose-risk-transmitting-coronavirus/>

Very respectfully,

U.S. IHR National Focal Point

U.S. Department of Health and Human Services (HHS)
Assistant Secretary for Preparedness and Response (ASPR)
Secretary's Operations Center (SOC)
200 Independence Ave S.W.
Washington D.C. 20201
Office: (202) 619 – 7800
Email: hhs.soc@hhs.gov

Sender:	Kadlec, Robert (OS/ASPR/IO) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A182EDA693D040D3832BAE6EFCF7A255-KADLEC, ROB>
Recipient:	OS ASPR IHR Program </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f1decfb12bcf4166892021d2533c739c-ASPRIHRProg>; Phillips, Sally (OS/ASPR/SPPR) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5d6ce8134846423cb83b5b28464edb60-Phillips, S>; DeBord, Kristin (OS/ASPR/SPPR) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d2cce28859884c1c835a9404885d6534-DeBord, Kri>; Moudy, Robin (OS/ASPR/SPPR) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d421d3e0f6474bc3857583cfc5870d69-Moudy, Robi>; Shuy, Bryan (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fdeb5ca04b6b4ed19fec2209b5f571e7-Shuy, Bryan>
Sent Date:	2020/03/01 08:18:37
Delivered Date:	2020/03/01 08:18:00

From:	Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd.P (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=96D2C1602DFA45E5A5E21452A098B96D-HAMEL, JOSE>
To:	Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>
Subject:	Re: latest versions
Date:	2020/03/01 08:27:08
Priority:	Normal
Type:	Note

(b)(5)

Strategic Innovation and Emerging Technology Manager
Assistant Secretary for Preparedness and Response
Office: 202-969-3852
Cell: (b)(6)

On Mar 1, 2020, at 8:24 AM, Hamel, Joseph (OS/ASPR/IO) <Joseph.Hamel@hhs.gov>wrote:

Strategic Innovation and Emerging Technology Manager
Assistant Secretary for Preparedness and Response
Office: 202-969-3852
Cell: (b)(6)

<Therapeutics Memo COVID19 v3.docx>
<API Memo COVID19 v2.docx>
<Supplies Memo COVID19.docx>
<Diagnostics Memo COVID19 v3.docx>

Sender:	Hamel, Joseph (OS/ASPR/IO) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=96D2C1602DFA45E5A5E21452A098B96D-HAMEL, JOSE>
Recipient:	Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>
Sent Date:	2020/03/01 08:27:07
Delivered Date:	2020/03/01 08:27:08
Message Flags:	Unread

From:	Lawler, James V <(b)(6)>@unmc.edu>
To:	Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd. (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Carter Mecher <(b)(6)>@charter.net>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. <(b)(6)>@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>
CC:	Marcozzi, David <(b)(6)>@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)>@mail.mil>; Tom Bossert <(b)(6)>@me.com>
Subject:	Re: VA Projections using Cruise Ship Data
Date:	2020/03/01 08:43:40
Priority:	Normal
Type:	Note

As Carter points out, Wuhan and other cities started way too late.

James Lawler, MD, MPH, FIDSA
 Director, International Programs & Innovation
 Global Center for Health Security, and
 Associate Professor of Medicine
 Division of Infectious Diseases
 University of Nebraska Medical Center
 m: (b)(6)

(b)(6)>@unmc.edu

From: Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>

Sent: Sunday, March 1, 2020 7:25:22 AM

To: Carter Mecher <(b)(6)>@charter.net>; Lawler, James V <(b)(6)>@unmc.edu>; Caneva, Duane (DHS.GOV) <(b)(6)>@hq.dhs.gov>; Callahan, Michael V., M.D. <(b)(6)>@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>

Cc: Marcozzi, David <(b)(6)>@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)>@mail.mil>; Tom Bossert <(b)(6)>@me.com>

Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Here is something to ponder from the China CDC report from a couple of days ago.

“A main finding of this characterization and exploratory analysis of the first 72,314 cases of COVID-19 found in China in the 40 days between first recognition of the outbreak of pneumonia with unknown etiology on December 31, 2019 to the end of the study period on February 11, 2020 is that this novel coronavirus is highly contagious. It has spread extremely rapidly from a single city to the entire country within only about 30 days. Moreover, it has

achieved such far-reaching effects even in the face of extreme response measures including the complete shutdown and isolation of whole cities, cancellation of Chinese New Year celebrations, prohibition of attendance at school and work, massive mobilization of health and public health personnel as well as military medical units, and rapid construction of entire hospitals.”

From: Carter Mecher <(b)(6)@charter.net>
Sent: Sunday, March 1, 2020 7:58 AM
To: Lawler, James V <(b)(6)@unmc.edu>; Caneva, Duane (DHS.GOV) <(b)(6)@hq.dhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>
Cc: Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

James said something to me that I do want to frame on the good wall (not the bad wall of understatements).

He gave a presentation to education leaders and I’m paraphrasing: With pandemic flu we would close the schools to protect the kids and reduce community transmission. With COVID we would close the schools (not so much to protect the kids), but to reduce community transmission and protect their grandparents.

James can phrase it better than I can—but that is the message. Tom are you listening?

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From: Lawler, James V
Sent: Sunday, March 1, 2020 7:41 AM
To: Carter Mecher; Caneva, Duane; Callahan, Michael V., M.D.; Dean, Charity A@CDPH
Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Kadlec, Robert (OS/ASPR/IO); Tom Bossert
Subject: Re: VA Projections using Cruise Ship Data

Listening to CNN “experts” this morning. They have no clue what they are talking about – saying that young people really shouldn’t worry and older/vulnerable folks are the only ones that should be changing behavior. No concept that our elders are depending on the actions of the entire community and also that once the healthcare system collapses, all of the services for which younger folks access that system will be gone as well. We have to get out in front of messaging.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Date: Sunday, March 1, 2020 at 6:20 AM
To: "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, "Dean, Charity A@CDPH" <charity.dean@cdph.ca.gov>
Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

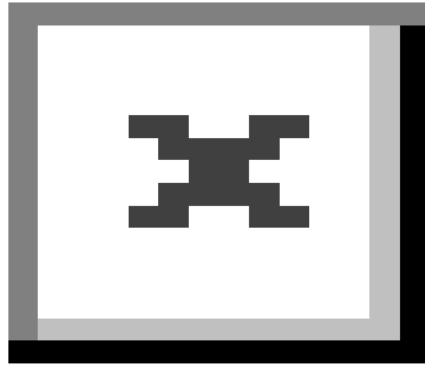
Non-UNMC email

Also have been thinking more about thresholds for pulling triggers.

I thought a but more about what James said about true prevalence—that it would be at least twice as high as we currently think it is on the cruise ship. That would mean that true attack rate is closer to 40%, 80% of cases are asymptomatic, 6% of cases are hospitalized, 1% are critical (in ICU), and CFR is about 0.5%. But given the demographics of the cruise ship we are really the diluting effect of kids and young adults. They would be expected to have high attack rates and even higher rates of asymptomatic disease and mild disease (pushing up the % asymptomatics, reducing the overall hospitalization rate, ICU rate and CFR). So wanted to play with those estimates of thresholds again (will resend updated math).

Yesterday I was at my daughter's house helping them pull out vines that were planted as ground cover. The damn things grow everywhere, climbing up trees and smothering them (this isn't kudzu). My wife said something about these vines that made me think of what we are seeing in South Korea, Italy and now the US. When you plant these vines, they go thru 3 stages—sleep, creep, and leap. First year they don't seem to be doing much—they sleep (but they are laying down a root system that you cannot see). The next year they creep (seeing some spread above ground while the root system hidden from view continues to spread). And the next year they leap (the vines seem to explode everywhere you look).

That is exactly what Italy feels like (but speeded up). We are blind to what is "happening underground." The root system is really those dendrite transmission trees that Richard likes. I pulled out the Singapore graphic again of their contact tracing of cases (that is the root system). They have given up continuing to update that graphic and only providing linkages between cases when they provide brief summaries of individual cases. Probably getting to complex to show.



cid:image001.png@01D5EF91.940CA250

In the US we just pulled up three random roots that are far from any plants we can see above the surface. My concern is that we are at the cusp of “leap” and cases are going to start popping like popcorn wherever we look.

This gets to the timing of NPIs

I went back to the Philadelphia-St Louis comparison of 1918. The difference between Philadelphia and St. Louis in 1918 in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks. In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia, NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. A comparison of hospitalization rate looks a lot like Philadelphia and St. Louis.

Hong Kong confirmed its first case of a traveler from Wuhan on Jan 23 (symptom onset of Jan 18). They would later learn of their first case of local transmission with symptom onset on Jan 22. On Jan 25, within 1 week of the symptom onset of the first case of a traveler and within 3 days of symptom onset of the first local case, they were already taking actions like suspending the reopening of schools—they were a bit lucky because the schools were closed for the Chinese New Year. So they took aggressive actions within 1 week of first recognized case. There was a lot of activity in Hong Kong in the first 3 weeks of January (large number of suspected cases that they were monitoring but they were only had

syndromic surveillance since there were no diagnostics early on. So Hong Kong had been busy isolating scores of patients during the first 3 weeks of January based only on clinical presentation.

Singapore confirmed its first case on January 23 (traveler from Wuhan). The individual had symptom onset on Jan 20 on a flight to Singapore. On Feb 3, Singapore confirmed its first case of local transmission. Symptom onset for that individual was on Jan 29. On Feb 7, Singapore identified additional cases of local transmission and declared Code Orange and intensifies response. So Singapore takes aggressive action two weeks after confirmation of 1st case in a traveler and within 4 days of first case of local transmission.

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From: [Carter Mecher](#)

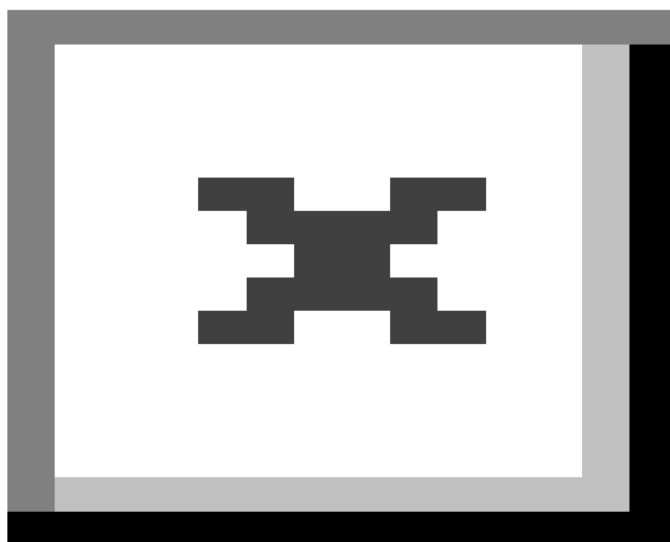
Sent: Sunday, March 1, 2020 5:58 AM

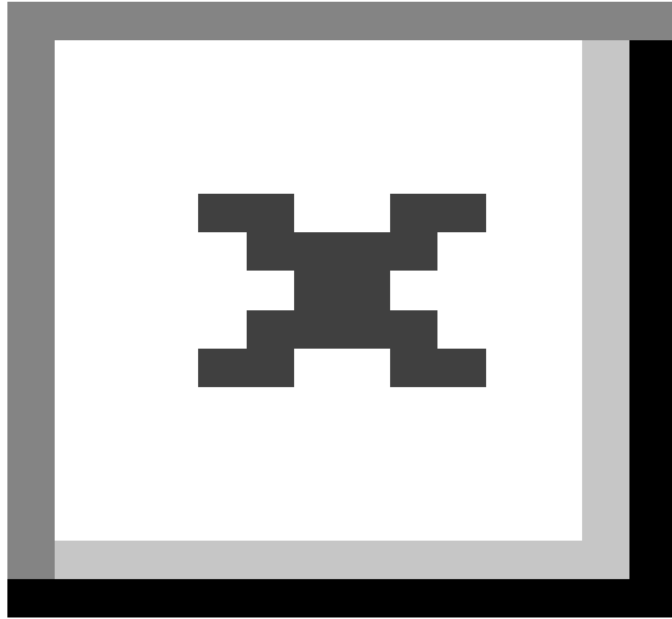
To: [Caneva, Duane](#); [Lawler, James V](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: RE: VA Projections using Cruise Ship Data

A few things for the group. Have been interested in whether we can see anything happening with flu surveillance (especially ILI) in places with COVID outbreaks, Am interested in looking at Japan, Hong Kong, Singapore, and Italy. So far, only found Hong Kong (Eva Lee found it). I will keep looking—really interested in South Korea and Italy to get a better sense of whether looking st ILI will be of any value. https://www.chp.gov.hk/files/pdf/fluexpress_week8_27_2_2020_eng.pdf [chp.gov.hk] [protect2.fireeye.com] This is data thru Feb 22 (week 8). Hong Kong is really do a good job of surveillance. And what they are doing in terms of NPIs seems to be working (just like Singapore).





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From: [Caneva, Duane](#)

Sent: Saturday, February 29, 2020 11:18 PM

To: [Lawler, James V](#); [Carter Mecher](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: Re: VA Projections using Cruise Ship Data

+ Charity

CA seems first up.

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From: Lawler, James V <(b)(6)@unmc.edu>
Sent: Saturday, February 29, 2020 11:06:20 PM
To: Carter Mecher <(b)(6)@charter.net>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>
Cc: Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

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Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m.(b)(6)
(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Date: Saturday, February 29, 2020 at 6:53 PM
To: "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>
Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is 1%*5% = 0.05%. But it takes 2 weeks or so before a patient who is infected

becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\%/8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

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From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Callahan, m." <(b)(6)@mgh.harvard.edu>

Date: Saturday, February 29, 2020 at 2:39 PM

To: "Lawler, James V" <(b)(6)@unmc.edu>

Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Carter Mecher

<(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane"

<(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better than poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)

Director, Mass-Casualty Infection Operations

Vaccine & Immunotherapy Center

Massachusetts General Hospital

Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V <(b)(6)>@unmc.edu>wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)<(b)(6)>@unmc.edu

From: "Marcozzi, David" <(b)(6)>@som.umaryland.edu>

Date: Saturday, February 29, 2020 at 5:11 AM

To: "Lawler, James V" <(b)(6)>@unmc.edu>, Carter Mecher <(b)(6)>@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)>@mail.mil>, "Caneva, Duane" <(b)(6)>@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m." <(b)(6)>@mgh.harvard.edu>, Tom Bossert <(b)(6)>@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
Associate Professor
Associate Chair of Population Health
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(667)-214-2208 (office)

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Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson

From: James Lawler <(b)(6)@unmc.edu>
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi <(b)(6)@som.umaryland.edu>, "matthew. hepburn" <(b)(6)@mail.mil>, Duane Caneva <(b)(6)@hq.dhs.gov>, Robert Kadlec <Robert.Kadlec@hhs.gov>, (b)(6)@mgh.harvard.edu" <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher (b)(6)@charter.net>
Sent: Friday, February 28, 2020 3:06:10 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V (b)(6)@unmc.edu>; Marcozzi, David (b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil>; Caneva, Duane (b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D. (b)(6)@mgh.harvard.edu>; Tom Bossert (b)(6)@me.com>
Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	100%	3,672	100%	19,209,704	100%

The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226

Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- 600,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in 10

13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 te
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134
75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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The information in this e-mail may be privileged and confidential, intended only for the use of the addressee(s) above. Any unauthorized use or disclosure of this information is prohibited. If you have received this e-mail by mistake, please delete it and immediately contact the sender.

Sender:	Lawler, James V <(b)(6)>@unmc.edu>
Recipient:	Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Carter Mecher <(b)(6)>@charter.net>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. <(b)(6)>@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>; Marcozzi, David <(b)(6)>@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)>@mail.mil>; Tom Bossert <(b)(6)>@me.com>
Sent Date:	2020/03/01 08:43:08
Delivered Date:	2020/03/01 08:43:40

From:	Lawler, James V (b)(6)@unmc.edu>
To:	Carter Mecher (b)(6)@charter.net>; Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd. (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. (b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>
CC:	Marcozzi, David (b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert (b)(6)@me.com>
Subject:	Re: VA Projections using Cruise Ship Data
Date:	2020/03/01 09:46:15
Priority:	Normal
Type:	Note

Carter – your Chicago prediction may be coming true.

<https://www.nbcchicago.com/news/local/cook-county-state-health-officials-confirm-coronavirus-case/2228843/>

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher (b)(6)@charter.net>
Date: Sunday, March 1, 2020 at 7:17 AM
To: "Lawler, James V" (b)(6)@unmc.edu>, "Caneva, Duane" (b)(6)@hq.dhs.gov>, "Callahan, m." (b)(6)@mgh.harvard.edu>, "Dean, Charity A@CDPH" <Charity.Dean@cdph.ca.gov>
Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert (b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Lisa did a great job pulling together guidance for healthcare facilities. I did share a lot of the things you all were thinking about.

<https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/index.html> [cdc.gov]

Look thru it—you will even find burst and coast in there.

Sent from Mail [go.microsoft.com] for Windows 10

From: Lawler, James V

Sent: Sunday, March 1, 2020 7:41 AM

To: Carter Mecher; Caneva, Duane; Callahan, Michael V., M.D.; Dean, Charity A@CDPH

Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Listening to CNN "experts" this morning. They have no clue what they are talking about – saying that young people really shouldn't worry and older/vulnerable folks are the only ones that should be changing behavior. No concept that our elders are depending on the actions of the entire community and also that once the healthcare system collapses, all of the services for which younger folks access that system will be gone as well. We have to get out in front of messaging.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>

Date: Sunday, March 1, 2020 at 6:20 AM

To: "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Lawler, James V"

<(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, "Dean, Charity A@CDPH" <charity.dean@cdph.ca.gov>

Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)"

<(b)(6)@mail.mil>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>

Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

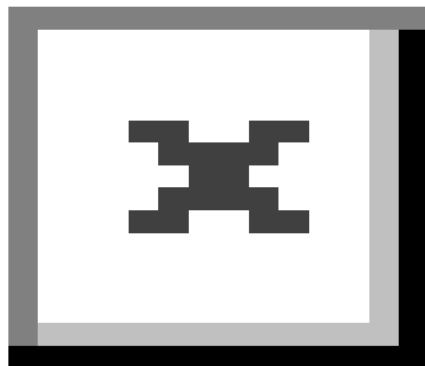
Also have been thinking more about thresholds for pulling triggers.

I thought a but more about what James said about true prevalence—that it would be at least twice as high as we currently think it is on the cruise ship. That would mean that true attack rate is closer to 40%, 80% of cases are asymptomatic, 6% of cases are hospitalized, 1% are critical (in ICU), and CFR is about 0.5%. But given the demographics of the cruise ship we are really the diluting effect of kids and young adults. They would be expected to have high attack rates and even higher rates of asymptomatic disease and mild disease (pushing up the % asymptomatics, reducing the overall hospitalization rate, ICU rate and CFR). So wanted to play with those estimates of thresholds again (will resend updated math).

Yesterday I was at my daughter's house helping them pull out vines that were planted as ground cover. The damn things grow everywhere, climbing up trees and smothering them (this isn't kudzu). My wife said something about these vines that made me think of what we are seeing in South Korea, Italy and now the US. When you plant these vines, they go thru 3 stages—sleep, creep, and leap. First year they don't seem to be doing much—they sleep (but they are laying down a root system that you cannot

see). The next year they creep (seeing some spread above ground while the root system hidden from view continues to spread). And the next year they leap (the vines seem to explode everywhere you look).

That is exactly what Italy feels like (but speeded up). We are blind to what is “happening underground.” The root system is really those dendrite transmission trees that Richard likes. I pulled out the Singapore graphic again of their contact tracing of cases (that is the root system). They have given up continuing to update that graphic and only providing linkages between cases when they provide brief summaries of individual cases. Probably getting too complex to show.



cid:image001.png@01D5EF91.940CA250

In the US we just pulled up three random roots that are far from any plants we can see above the surface. My concern is that we are at the cusp of “leap” and cases are going to start popping like popcorn wherever we look.

This gets to the timing of NPIs

I went back to the Philadelphia-St Louis comparison of 1918. The difference between Philadelphia and St. Louis in 1918 in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks. In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia, NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. A comparison of hospitalization rate looks a lot like Philadelphia and St. Louis.

Hong Kong confirmed its first case of a traveler from Wuhan on Jan 23 (symptom onset of Jan 18). They would later learn of their first case of local transmission with symptom onset on Jan 22. On Jan 25, within 1 week of the symptom onset of the first case of a traveler and within 3 days of symptom onset of the first local case, they were already taking actions like suspending the reopening of schools—they were a bit lucky because the schools were closed for the Chinese New Year. So they took aggressive actions within 1 week of first recognized case. There was a lot of activity in Hong Kong in the first 3 weeks of January (large number of suspected cases that they were monitoring but they were only had syndromic surveillance since there were no diagnostics early on. So Hong Kong had been busy isolating scores of patients during the first 3 weeks of January based only on clinical presentation.

Singapore confirmed its first case on January 23 (traveler from Wuhan). The individual had symptom onset on Jan 20 on a flight to Singapore. On Feb 3, Singapore confirmed its first case of local transmission. Symptom onset for that individual was on Jan 29. On Feb 7, Singapore identified additional cases of local transmission and declared Code Orange and intensifies response. So Singapore takes aggressive action two weeks after confirmation of 1st case in a traveler and within 4 days of first case of local transmission.

Sent from [Mail \[go.microsoft.com\]](mailto:go.microsoft.com) for Windows 10

From: [Carter Mecher](#)

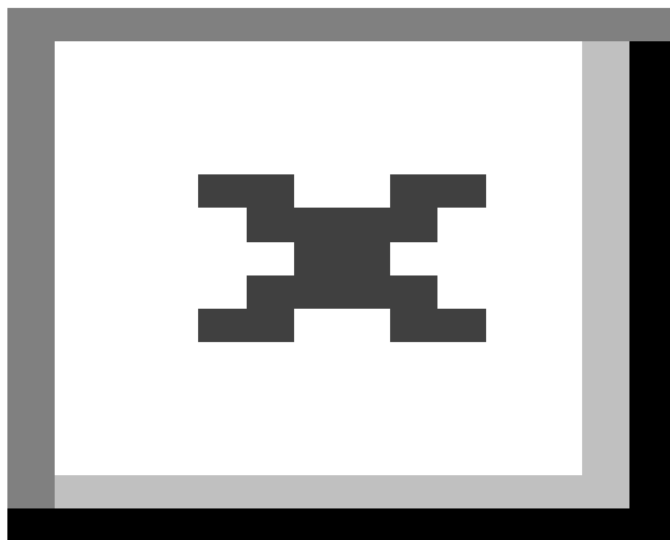
Sent: Sunday, March 1, 2020 5:58 AM

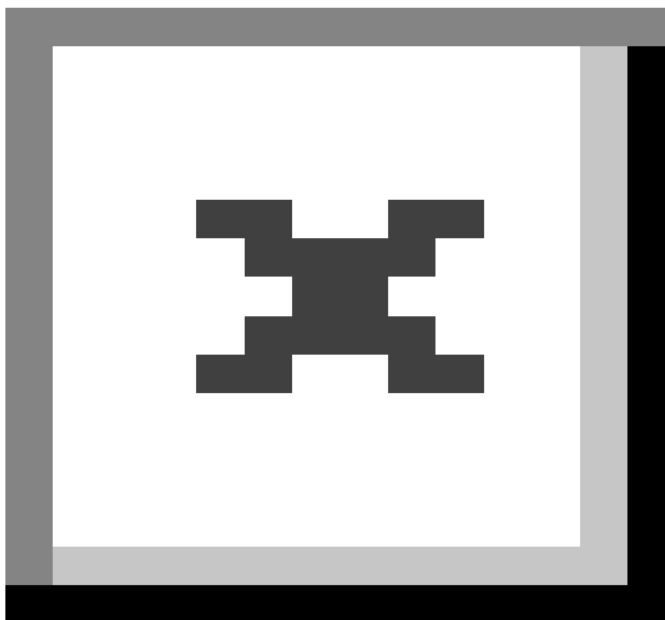
To: [Caneva, Duane](#); [Lawler, James V](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: RE: VA Projections using Cruise Ship Data

A few things for the group. Have been interested in whether we can see anything happening with flu surveillance (especially ILI) in places with COVID outbreaks, Am interested in looking at Japan, Hong Kong, Singapore, and Italy. So far, only found Hong Kong (Eva Lee found it). I will keep looking—really interested in South Korea and Italy to get a better sense of whether looking st ILI will be of any value. https://www.chp.gov.hk/files/pdf/fluexpress_week8_27_2_2020_eng.pdf [chp.gov.hk] This is data thru Feb 22 (week 8). Hong Kong is really do a good job of surveillance. And what they are doing in terms of NPIs seems to be working (just like Singapore).





Sent from [Mail \[go.microsoft.com\]](mailto:Mail [go.microsoft.com]) for Windows 10

From: [Caneva, Duane](#)

Sent: Saturday, February 29, 2020 11:18 PM

To: [Lawler, James V](#); [Carter Mecher](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: Re: VA Projections using Cruise Ship Data

+ Charity

CA seems first up.

Get Outlook for iOS [aka.ms]

From: Lawler, James V (b)(6)@unmc.edu
Sent: Saturday, February 29, 2020 11:06:20 PM
To: Carter Mecher (b)(6)@charter.net>; Callahan, Michael V., M.D. (b)(6)@mgh.harvard.edu>
Cc: Marcozzi, David (b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil>; Caneva, Duane (b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert (b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Date: Saturday, February 29, 2020 at 6:53 PM
To: "Lawler, James V" (b)(6)@unmc.edu>, "Callahan, m." (b)(6)@mgh.harvard.edu>
Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Caneva, Duane" (b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is 1%*5% = 0.05%. But it takes 2 weeks or so before a patient who is infected

becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\%/8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

Sent from Mail [go.microsoft.com] for Windows 10

From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Callahan, m." (b)(6)@mgh.harvard.edu>

Date: Saturday, February 29, 2020 at 2:39 PM

To: "Lawler, James V" (b)(6)@unmc.edu>

Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Carter Mecher (b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Caneva, Duane" (b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert (b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better than poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital

Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V <(b)(6)>@unmc.edu>wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m:(b)(6)

(b)(6)<(b)(6)>@unmc.edu

From: "Marcozzi, David" <(b)(6)>@som.umaryland.edu>
Date: Saturday, February 29, 2020 at 5:11 AM
To: "Lawler, James V" <(b)(6)>@unmc.edu>, Carter Mecher <(b)(6)>@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)>@mail.mil>, "Caneva, Duane" <(b)(6)>@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m." <(b)(6)>@mgh.harvard.edu>, Tom Bossert <(b)(6)>@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
Associate Professor
Associate Chair of Population Health
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Deputy Medical Director for Mobile Integrated Health/Community Paramedicine
Baltimore City Fire Department
<https://protect2.fireeye.com/url?k=3f6cdc84-6338c5f8-3f6cedbb-0cc47adc5fa2-11c3da109bef7a17&u=https://fire.baltimorecity.gov/mobile-integrated-health-community-paramedicine>
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Baltimore, Maryland 21201
(667)-214-2208 (office)

(b)(6) @som.umaryland.edu

Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson

From: James Lawler <(b)(6)@unmc.edu>
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi <(b)(6)@som.umaryland.edu>, "matthew. hepburn" <(b)(6)@mail.mil>, Duane Caneva <(b)(6)@hq.dhs.gov>, Robert Kadlec <Robert.Kadlec@hhs.gov>, "(b)(6)@mgh.harvard.edu" <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Sent: Friday, February 28, 2020 3:06:10 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Tom Bossert <(b)(6)@me.com>
Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	100%	3,672	100%	19,209,704	100%

The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226

Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- 600,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in 10

13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 te
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134
75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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The information in this e-mail may be privileged and confidential, intended only for the use of the addressee(s) above. Any unauthorized use or disclosure of this information is prohibited. If you have received this e-mail by mistake, please delete it and immediately contact the sender.

Sender:	Lawler, James V <(b)(6)>@unmc.edu>
Recipient:	Carter Mecher <(b)(6)>@charter.net>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. <(b)(6)>@mgh.harvard.edu>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>; Marcozzi, David <(b)(6)>@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)>@mail.mil>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Tom Bossert <(b)(6)>@me.com>
Sent Date:	2020/03/01 09:45:44
Delivered Date:	2020/03/01 09:46:15

From:	Sherman, Jennifer (HHS/OASH) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F30FE7FAE664419FA654B20EDCCB1E78-SHERMAN, JE>
To:	Adams, Jerome (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=184fe51f7350400b8a99dabd65ac0db5-Adams, Jero>; Wright, Janet (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=41f672e2527b4f44891fb4f4be08cdfd-Wright, Jan>; Schwartz, Erica (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=603e84a0e3744a5d8dcdb759f5dcad91-Schwartz, E>; Dulaigh, Joel (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=02b15e96dc484db29682c1d336e63441-Dulaigh, Jo>
Subject:	FW: Pence: 15,000 coronavirus testing kits released over weekend
Date:	2020/03/01 09:54:31
Priority:	Normal
Type:	Note

Sharing 2 pieces from VPOTUS on the Sunday show circuit –

Pence: It's OK for local schools to shut down over the coronavirus

By David Cohen

03/01/2020 08:33 AM EST

Vice President Mike Pence said the Trump administration will defer to local officials on their decisions on the coronavirus.

“I think the president would respect any decisions that are made at the state and local level,” he said in an interview airing today on NBC’s “Meet the Press.”

Pence made it clear the administration is trying to walk a fine line, by allowing local officials and businesses to deal with the coronavirus as they see fit, but also encouraging everyone not to overreact.

“Those are decisions that governors in consultation with local health officials will make as they deem that necessary,” he said in response to host Chuck Todd asking about the closing of schools in some locales. “But other than in areas where there are individuals that have been infected with the coronavirus, people need to understand that for the average American, the risk does remain low.”

President Donald Trump on Wednesday placed Pence in charge of the nation’s response to the coronavirus.

“It’s a good time to use common sense this time of the year, even if the coronavirus wasn’t a reality,” Pence told Todd.

Pence offered sympathies on the first recorded coronavirus death in the United States, which occurred in Washington state.

"It's a tragic loss, and the man passed away. He was an individual we believe in his late 50s that, that also had some other high-risk factors, but it doesn't take away from the tragedy. The encouraging news is that, of the now 22 Americans, including the man who sadly lost his life, the majority of them are recovering well," he said.

From: POLITICO Pro Health Care <politicoemail@politicopro.com>
Sent: Sunday, March 1, 2020 9:46 AM
To: Sherman, Jennifer (HHS/OASH) <Jennifer.Sherman@hhs.gov>
Subject: Pence: 15,000 coronavirus testing kits released over weekend

Pence: 15,000 coronavirus testing kits released over weekend

By Matthew Choi

03/01/2020 09:45 AM EST

Vice President Mike Pence announced Sunday the release of 15,000 testing kits for the novel coronavirus and said the administration plans to release an additional 50,000 in response to the growing threat of a major outbreak in the United States.

Speaking with CNN's Jake Tapper on "State of the Union," Pence acknowledged the United States has lagged behind other countries in the manufacturing and distribution of coronavirus testing kits. Pence, whom President Donald Trump appointed to lead the administration's coronavirus efforts, added that several governors had raised the issue with him and that it was a "fair question."

"We're addressing it; we're leaning into it," Pence said. "And more importantly, we've established a process in a number of cities across the country where if somebody presents at the local hospital with a respiratory ailment, we want them also tested for coronavirus."

Pence's remarks came shortly after the first reported death from coronavirus in the United States, which occurred in Washington state on Saturday. It was a rare acknowledgment of the challenges of combating the disease from the administration, which is led by a president who has tried to downplay the risk of the virus. Trump has frequently said his administration was the best equipped in the world to tackle an outbreak.

Pence has also tried not to be too alarmist over the outbreak, saying Sunday that the risk remains low. Still, he also said the president would probably be OK with closing schools and other disruptive actions by local officials to keep the virus from spreading.

To view online:

<https://protect2.fireeye.com/url?k=9cd5854c-c0808c9c-9cd5b473-0cc47a6a52de-18195f32af388785&u=https://subscriber.politicopro.com/health-care/article/2020/03/pence-15-000-coronavirus-testing-kits-released-over-weekend-1886482>

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Sent Date:	2020/03/01 09:54:29
Delivered Date:	2020/03/01 09:54:31

From:	Sherman, Jennifer (HHS/OASH) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F30FE7FAE664419FA654B20EDCCB1E78-SHERMAN, JE>
To:	Adams, Jerome (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=184fe51f7350400b8a99dabd65ac0db5-Adams, Jero>
CC:	Schwartz, Erica (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=603e84a0e3744a5d8dcdb759f5dcad91-Schwartz, E>; Dulaigh, Joel (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=02b15e96dc484db29682c1d336e63441-Dulaigh, Jo>; Wright, Janet (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=41f672e2527b4f44891fb4f4be08cdfd-Wright, Jan>
Subject:	FW: Axios AM: Mike's Great 8 — Super Tuesday suddenly looks different — Virus preppers
Date:	2020/03/01 09:58:48
Priority:	Normal
Type:	Note

FYI - mention at bottom of #5

----- Forwarded message -----

From: **Mike Allen** <mike@axios.com>

Date: Sun, Mar 1, 2020, 8:18 AM

Subject: Axios AM: Mike's Great 8 — Super Tuesday suddenly looks different — Virus preppers

AXIOS Axios

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Axios AM

By Mike Allen · Mar 01, 2020

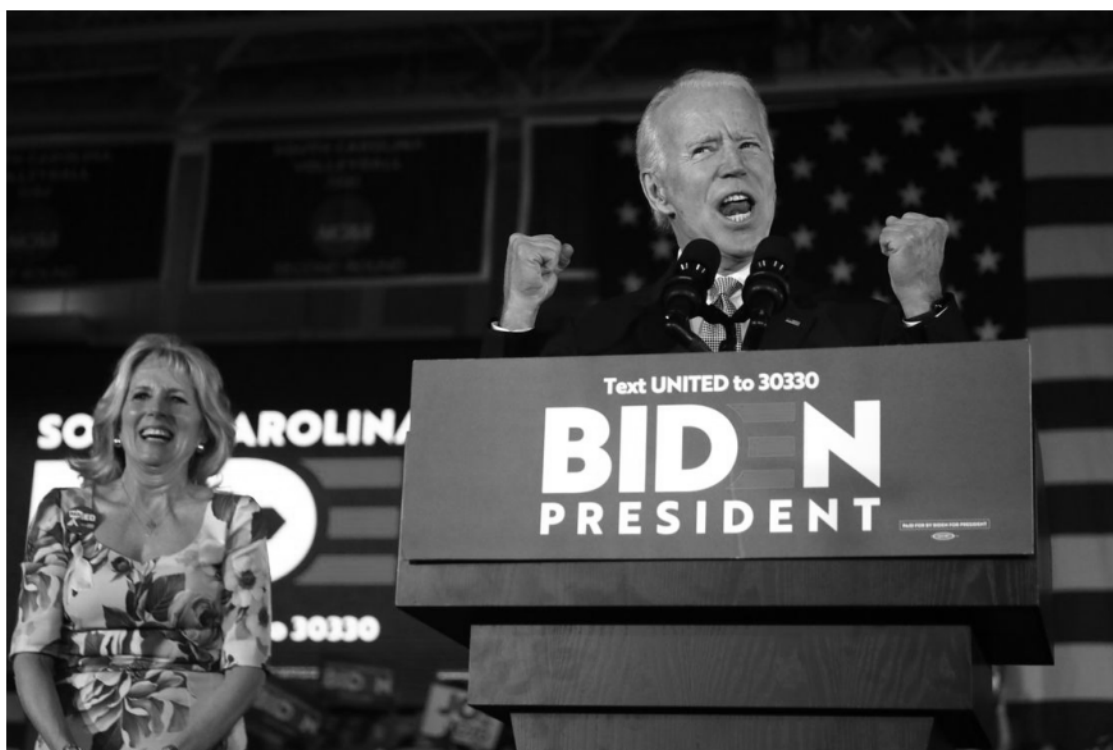
☐ **Happy Sunday**, and welcome to March!

• • **Today's Smart Brevity™ count:** 1,384 words ... 5 minutes.

☐ **"Axios on HBO"** Season 3 premieres tonight at 6 ET/PT.

- • **See a clip** from Alexi McCammond's interview with Harvey Weinstein prosecutor Cy Vance.
- • **See a clip** from my interview with Roger Stone.
- • **We also take** a wild look inside a Trump rally.

1 big thing: Super Tuesday suddenly looks different



Joe and Jill Biden celebrate last night in Columbia, S.C. Photo: Spencer Platt

Joe Biden's landslide in the South Carolina primary (won every county, and took 48% to Bernie Sanders' 20%, Pete Buttigieg's 8% and Elizabeth Warren's 7%) raises existential questions for Mike Bloomberg and could slow Sanders' runaway train.

- • **The first-in-the-South** blowout could give new life to Biden's withering electability argument — and ramp up pressure on other moderates to drop out, Axios' Margaret Talev, Alexi McCammond and Stef Kight [write](#).

Between the lines: It's not at all clear Biden can carry this win beyond a state where he has longstanding relationships and the benefit of a majority black Democratic electorate.

- • **With Super Tuesday** just two days away, Biden is almost out of time to raise the money, air the ads and regain the momentum that's lagged until now.

- • **There's no sign** Biden's moderate rivals will drop out beforehand. That could help Sanders keep amassing delegates, and make him hard to catch.

Bloomberg campaign manager Kevin Sheekey said Bloomberg still fully intends to compete on Super Tuesday, the first contests in which he's on the ballot.

- • **The Bloomberg campaign's** internal data suggests if he dropped out now, it actually would improve Sanders' delegate path, one adviser told Axios.
- • **The explanation:** Bloomberg draws votes away from Sanders as well as Biden. And in places where Biden polls too low to be eligible for delegates, Bloomberg only hurts Sanders.

1 fun thing: "Move On Up," Curtis Mayfield's 1970s soul hit with black-pride appeal and a regular part of Barack Obama's 2008 campaign playlist, blared as Biden took the stage.

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Total pledged delegates for 2020 Democratic candidates

Updated March 19, 11:20 am EDT

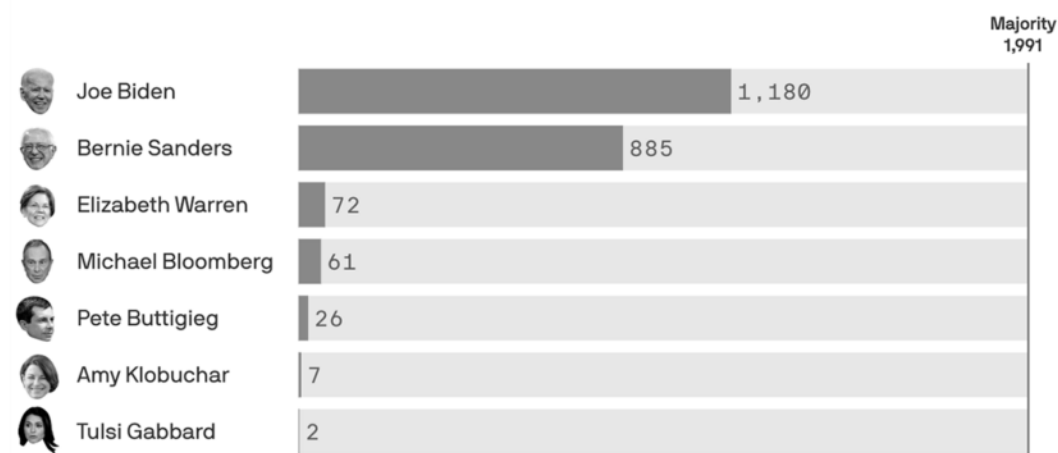


Chart: Naema Ahmed/Axios



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2. Peter Hamby: Inside Biden's big win



Biden's bash at the University of South Carolina's volleyball center. Photo: Scott Olson/Getty Images

Snapchat's Peter Hamby, host of "Good Luck America," sends Axios this dispatch from Biden's victory party in Columbia, S.C.:

Joe Biden can now make the case he's got a coalition: black voters, older voters and the type of Never-Trump, Romney-Clinton suburban independents who were so crucial to Democratic House wins in 2018.

- • **7 p.m. ET**, when the race was called, was the Biden campaign's biggest hour of online fundraising to date.
- • **The campaign's digital director, Rob Flaherty, tweeted** that the campaign's "No Malarkey" mugs sold out in two hours.

Why it matters: Biden desperately needs the money and earned-media bump before Super Tuesday. He's up with only \$2 million in TV advertising in eight Super Tuesday states — Alabama, Arkansas, Georgia, North Carolina, Tennessee, Texas and Virginia — targeting majority-black congressional districts where he can bank delegates.

- • **A week of TV ads** in L.A. alone can cost \$3 million.

The intrigue: One buzzy question flying around the room at Biden's victory event was whether, if this becomes a two-man race between Biden and Bernie Sanders, would Barack Obama get off the sidelines for his vice president?

- **Between the lines:** Plenty of Democrats here told Hamby that last week's news coverage of Sanders' history of warm comments about communist regimes spooked moderates and clarified their choice.

By the numbers: The South Carolina electorate was 5% *whiter* than it was 2016 — something Hamby had predicted — but these weren't Bernie voters.

- **They were swing-y** suburban moderates — affluent college-educated whites — who live across the border from Charlotte and along the coast, and who've flocked to the Democratic Party since Trump's election.
- **Independents** made up 10% more of the electorate than in 2016, and moderate/conservative turnout was 5% higher.
- **There were more** first-time primary voters than in 2016, and Biden won them by 7 points, undercutting Sanders' argument he's the one who can expand the electorate.
- **Exit polling** put 61% of the African-American vote with Biden, with Sanders at 16%, per the WashPost.

As in Iowa, with precincts outside Des Moines, the surge in the Democratic primary was from suburban whites, much like the 2018 midterms.

- **Absentee ballot data** showed white, Democratic turnout in South Carolina more than doubled from 2016, while African-American turnout stayed flat.

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3. Why the U.S. doesn't have a coronavirus shutdown — yet



A Shanghai taxi isolates the back seat with a plastic sheet. Photo: Yifan Ding/Getty Images

We still don't know a lot about the coronavirus, making contingency planning a lot harder, Axios health care business reporter Bob Herman writes.

- • **We don't know** how widely the virus is spreading undetected, which makes it more important for leaders to map out worst-case scenarios.
- • **But experts say** we're also not at a place where closing schools, requiring telecommuting, or canceling public events are imminent or practical.
- • **"There's a lot of panic and concern,** but there's no indication that these more dramatic measures are necessary," said Allison Bartlett, an infectious disease physician at the University of Chicago.

The latest: President Trump increased travel restrictions to Iran and authorized "do not travel" warnings for areas in Italy and South Korea — and said he's looking "very strongly" at closing the southern border with Mexico.

- • **Washington Gov. Jay Inslee** declared a state of emergency after a man died there of COVID-19, the first reported death in the U.S. More than 50 people in a nursing facility are sick and being tested for the virus. (AP)
- • **A source in yesterday's** Trump's coronavirus task force meeting in the Situation Room tells me Vice President Pence repeatedly turned to doctors and medical experts to weigh in on options that the politicals

were bouncing off each other.

The bottom line: The flu is infecting and killing more people, but the coronavirus has a higher preliminary mortality rate.

- • **That mortality rate** could be incorrect, though, because we don't know how many people are infected but not showing symptoms.

China's restrictions helped slow the spread, but would be tough to enforce in the U.S. for many reasons, including the lack of guaranteed paid sick leave.

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A MESSAGE FROM MIKE BLOOMBERG 2020

Mike Bloomberg routinely takes on the gun lobby



Like most Americans, Mike Bloomberg supports common sense gun laws

that:

- • Make going to school safe again.
- • Take on gun violence in the hard-hit communities.
- • Keep guns out of the wrong hands.

And he wants to do all this while upholding the Second Amendment. [Learn how.](#)

Paid for by Mike Bloomberg 2020.

4. This is what democracy looks like

South Carolina votes ...



Photos (clockwise from upper left): Eric Thayer/Reuters, Joshua Lott/AFP via Getty Images, Patrick Semansky/AP, Sean Rayford/Getty Images



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5. Nation on edge: Virus preppers



Duane Reade on Upper East Side. Axios AM reader photo by Rob Saliterman

Shoppers nationwide are buying out Clorox wipes, sprays and bleach.

- • **Shortages** of hand sanitizer and fitted N95 face masks began in early February, CVS spokesman Joe Goode told Axios' Orion Rummler. Details.

The N.Y. Times added this editors' note to an opinion piece, "How to Be a Smart Coronavirus Prepper" ([subscription](#)):

An earlier version of this essay suggested people buy face masks to prepare for a coronavirus quarantine. We have removed that suggestion because the surgeon general on Saturday urged the public to stop buying masks.

That refers to this [tweet](#):



U.S. Surgeon General ✓
@Surgeon_General

Seriously people- STOP BUYING MASKS!

They are NOT effective in preventing general public from catching #Coronavirus, but if healthcare providers can't get them to care for sick patients, it puts them and our communities at risk!



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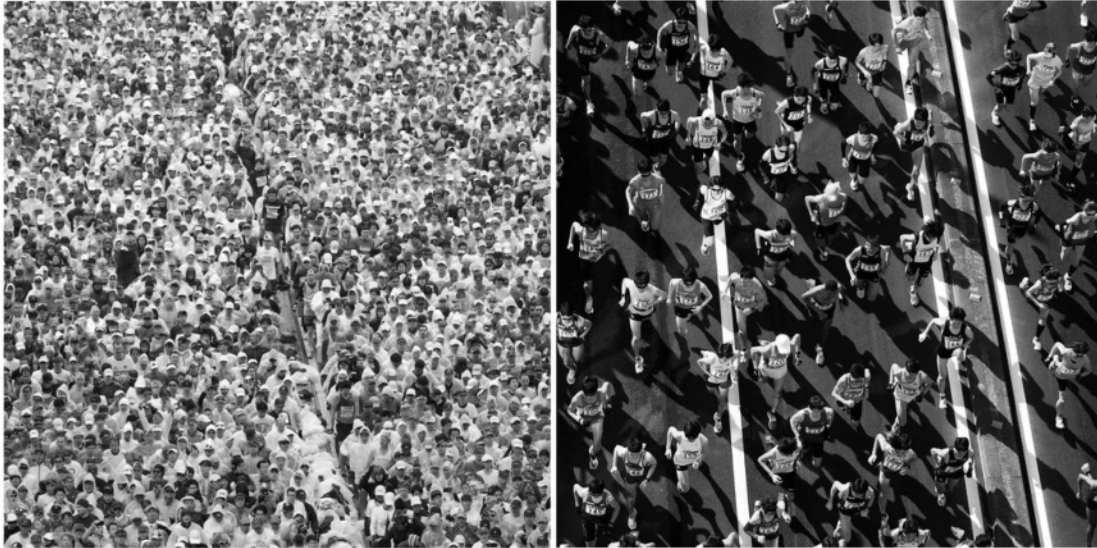


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6. World on edge: Fanless games



Start of Tokyo Marathon in 2019 (left) and today (right). Photos: Kyodo via Reuters, Charly Triballeau/Pool via Reuters

Pro sports leagues in Italy (soccer) and South Korea (basketball) are playing televised games in empty stadiums and arenas, rather than postponing or canceling them in response to the coronavirus. *(AP)*

- • **Here's a list** of sporting events that have been disrupted around the world, from archery to wrestling.

🔪 **"Friendly kissing** poses European dilemma as virus spreads."



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7. Laurene Powell Jobs: "I'm not interested in legacy wealth"



Photo: Michael Cohen/Getty Images

Laurene Powell Jobs, founder and president of the Emerson Collective (an investor in Axios), is exerting new influence with major stakes in The Atlantic and Monumental Sports (owner of Washington's Wizards, Mystics and Capitals), and is funding efforts on immigration, education and independent media.

She says in a "Corner Office" interview in today's New York Times that she has philanthropic plans for her entire fortune, some \$27.5 billion:

She is a Silicon Valley billionaire, pushing back against the wealthy occupant of the White House. The very fact that such fortunes exist while others struggle to get by strikes her as unjust.

"It's not right for individuals to accumulate a massive amount of wealth that's equivalent to millions and millions of other people combined," she said. "There's nothing fair about that." ...

"I inherited my wealth from my husband, who didn't care about the accumulation of wealth," she said. ...

"I'm not interested in legacy wealth buildings, and my children know that," she added. "Steve wasn't interested in that. If I live long enough, it ends with me."

Keep reading (*subscription*).



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8. 🖥️ 1 fun thing



Photo: Will Heath/NBC via Getty Images

The "**Saturday Night Live**" cold open was a coronavirus press conference with a dash of a Democratic debate:

- • "**Vice President Pence**": "We've assembled a very experienced team of some of the best people left in government."
- • "**Elizabeth Warren**" to Mike Bloomberg: "I might be fifth in the polls, but I'm Number 1 in your nightmares."
- • "**Joe Biden**": "Guess who just kicked butt in South Cracker Barrel?"

YouTube.



Photo: Will Heath/NBC via Getty Images



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A MESSAGE FROM MIKE BLOOMBERG 2020

The one Democrat scaring President Trump



Mike Bloomberg is getting high marks in the polls, leaving President Trump in the dust.

The reason: Bloomberg has a proven track record of steady leadership, both in business and as mayor of New York. [Join Mike in the race to win back America.](#)

Paid for by Mike Bloomberg 2020.

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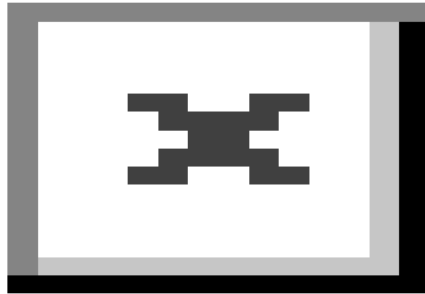
From:	Carter Mecher <(b)(6)@charter.net>
To:	Lawler, James V <(b)(6)@unmc.edu>; Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd.roup (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>
CC:	Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Tom Bossert <(b)(6)@me.com>
Subject:	RE: VA Projections using Cruise Ship Data
Date:	2020/03/01 10:08:51
Priority:	Normal
Type:	Note

Was able to find South Korea flu surveillance.

<https://www.cdc.go.kr/board/board.es?mid=a30504000000&bid=0033>

I pulled the data for weeks 49-8 (it doesn't look like ILI is much help).

Week	ILI Rate	%Positive Samples for Influenza
49	19.5%	18.6%
50	28.5%	16.2%
51	37.8%	25.9%
52	49.8%	35.1%
1	49.1%	43.4%
2	47.8%	40.6%
3	42.4%	37.6%
4	40.9%	43.4%
5	28.0%	40.9%
6	16.4%	16.7%
7	11.6%	15.8%
8	8.5%	3.9%



Sent from Mail for Windows 10

From: Lawler, James V

Sent: Sunday, March 1, 2020 8:43 AM

To: Kadlec, Robert (OS/ASPR/IO); Carter Mecher; Caneva, Duane (DHS.GOV); Callahan, Michael V., M.D.; Dean, Charity A@CDPH

Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

As Carter points out, Wuhan and other cities started way too late.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center

m: (b)(6)

(b)(6)@unmc.edu

From: Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>

Sent: Sunday, March 1, 2020 7:25:22 AM

To: Carter Mecher (b)(6)@charter.net; Lawler, James V (b)(6)@unmc.edu; Caneva, Duane (DHS.GOV) (b)(6)@hq.dhs.gov; Callahan, Michael V., M.D.

(b)(6)@mgh.harvard.edu; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>

Cc: Marcozzi, David (b)(6)@som.umaryland.edu; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil; Tom Bossert

(b)(6)@me.com>

Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Here is something to ponder from the China CDC report from a couple of days ago.

“A main finding of this characterization and exploratory analysis of the first 72,314 cases of COVID-19 found in China in the 40 days between first recognition of the outbreak of pneumonia with unknown etiology on December 31, 2019 to the end of the study period on February 11, 2020 is that this novel coronavirus is highly contagious. It has spread extremely rapidly from a single city to the entire country within only about 30 days. Moreover, it has achieved such far-reaching effects even in the face of extreme response measures including the complete shutdown and isolation of whole cities, cancellation of Chinese New Year celebrations, prohibition of attendance at school and work, massive mobilization of health and public health personnel as well as military medical units, and rapid construction of entire hospitals.”

From: Carter Mecher (b)(6)@charter.net>
Sent: Sunday, March 1, 2020 7:58 AM
To: Lawler, James V (b)(6)@unmc.edu>; Caneva, Duane (DHS.GOV) (b)(6)@hq.dhs.gov>; Callahan, Michael V., M.D. (b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>
Cc: Marcozzi, David (b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert (b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

James said something to me that I do want to frame on the good wall (not the bad wall of understatements).

He gave a presentation to education leaders and I'm paraphrasing: With pandemic flu we would close the schools to protect the kids and reduce community transmission. With COVID we would close the schools (not so much to protect the kids), but to reduce community transmission and protect their grandparents.

James can phrase it better than I can—but that is the message. Tom are you listening?

Sent from [Mail \[protect2.fireeye.com\]](mailto:protect2.fireeye.com) for Windows 10

From: [Lawler, James V](#)
Sent: Sunday, March 1, 2020 7:41 AM
To: [Carter Mecher](#); [Caneva, Duane](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)
Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert](#)

(OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Listening to CNN “experts” this morning. They have no clue what they are talking about – saying that young people really shouldn’t worry and older/vulnerable folks are the only ones that should be changing behavior. No concept that our elders are depending on the actions of the entire community and also that once the healthcare system collapses, all of the services for which younger folks access that system will be gone as well. We have to get out in front of messaging.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: Carter Mecher (b)(6)@charter.net>

Date: Sunday, March 1, 2020 at 6:20 AM

To: "Caneva, Duane" (b)(6)@hq.dhs.gov>, "Lawler, James V" (b)(6)@unmc.edu>, "Callahan, m." (b)(6)@mgh.harvard.edu>, "Dean, Charity A@CDPH" <charity.dean@cdph.ca.gov>

Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert (b)(6)@me.com>

Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

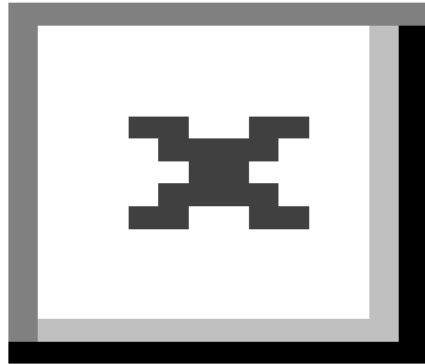
Also have been thinking more about thresholds for pulling triggers.

I thought a but more about what James said about true prevalence—that it would be at least twice as high as we currently think it is on the cruise ship. That would mean that true attack rate is closer to 40%, 80% of cases are asymptomatic, 6% of cases are hospitalized, 1% are critical (in ICU), and CFR is about 0.5%. But given the demographics of the cruise ship we are really the diluting effect of kids and young adults. They would be expected to have high attack rates and even higher rates of asymptomatic disease and mild disease (pushing up the % asymptomatics, reducing the overall hospitalization rate, ICU rate and CFR). So wanted to play with those estimates of thresholds again (will resend updated math).

Yesterday I was at my daughter’s house helping them pull out vines that were planted as ground cover. The damn things grow everywhere, climbing up trees and smothering them (this isn’t kudzu). My wife said something about these vines that made me think of what we are seeing in South Korea, Italy and now the US. When you plant these vines, they go thru 3 stages—sleep, creep, and leap. First year they don’t seem to be doing much—they sleep (but they are laying down a root system that you cannot see). The next year they creep (seeing some spread above ground while the root system hidden from view continues to spread). And the next year they leap (the vines seem to explode everywhere you look).

That is exactly what Italy feels like (but speeded up). We are blind to what is “happening underground.” The root system is really those dendrite transmission trees that Richard likes. I pulled out

the Singapore graphic again of their contact tracing of cases (that is the root system). They have given up continuing to update that graphic and only providing linkages between cases when they provide brief summaries of individual cases. Probably getting to complex to show.



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In the US we just pulled up three random roots that are far from any plants we can see above the surface. My concern is that we are at the cusp of “leap” and cases are going to start popping like popcorn wherever we look.

This gets to the timing of NPIs

I went back to the Philadelphia-St Louis comparison of 1918. The difference between Philadelphia and St. Louis in 1918 in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks. In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia, NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. A comparison of hospitalization rate looks a lot like Philadelphia and St. Louis.

Hong Kong confirmed its first case of a traveler from Wuhan on Jan 23 (symptom onset of Jan 18). They would later learn of their first case of local transmission with symptom onset on Jan 22. On Jan 25, within 1 week of the symptom onset of the first case of a traveler and within 3 days of symptom onset of the first local case, they were already taking actions like suspending the reopening of schools—they were a bit lucky because the schools were closed for the Chinese New Year. So they took aggressive

actions within 1 week of first recognized case. There was a lot of activity in Hong Kong in the first 3 weeks of January (large number of suspected cases that they were monitoring but they were only had syndromic surveillance since there were no diagnostics early on. So Hong Kong had been busy isolating scores of patients during the first 3 weeks of January based only on clinical presentation.

Singapore confirmed its first case on January 23 (traveler from Wuhan). The individual had symptom onset on Jan 20 on a flight to Singapore. On Feb 3, Singapore confirmed its first case of local transmission. Symptom onset for that individual was on Jan 29. On Feb 7, Singapore identified additional cases of local transmission and declared Code Orange and intensifies response. So Singapore takes aggressive action two weeks after confirmation of 1st case in a traveler and within 4 days of first case of local transmission.

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From: [Carter Mecher](#)

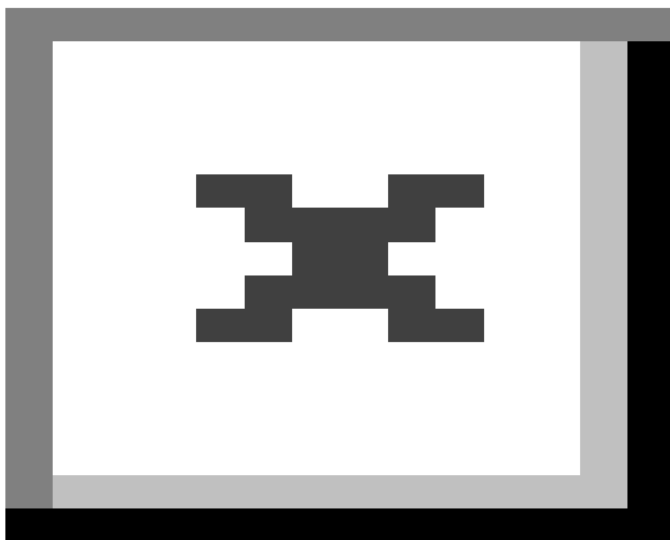
Sent: Sunday, March 1, 2020 5:58 AM

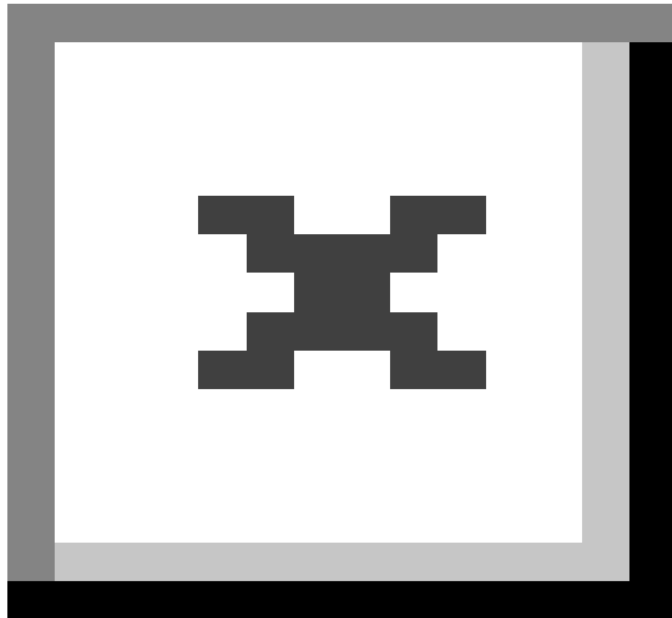
To: [Caneva, Duane](#); [Lawler, James V](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: RE: VA Projections using Cruise Ship Data

A few things for the group. Have been interested in whether we can see anything happening with flu surveillance (especially ILI) in places with COVID outbreaks, Am interested in looking at Japan, Hong Kong, Singapore, and Italy. So far, only found Hong Kong (Eva Lee found it). I will keep looking—really interested in South Korea and Italy to get a better sense of whether looking st ILI will be of any value. https://www.chp.gov.hk/files/pdf/fluexpress_week8_27_2_2020_eng.pdf [[chp.gov.hk](#)] [protect2.fireeye.com] This is data thru Feb 22 (week 8). Hong Kong is really do a good job of surveillance. And what they are doing in terms of NPIs seems to be working (just like Singapore).





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From: [Caneva, Duane](#)

Sent: Saturday, February 29, 2020 11:18 PM

To: [Lawler, James V](#); [Carter Mecher](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: Re: VA Projections using Cruise Ship Data

+ Charity

CA seems first up.

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From: Lawler, James V <(b)(6)@unmc.edu>
Sent: Saturday, February 29, 2020 11:06:20 PM
To: Carter Mecher <(b)(6)@charter.net>; Callahan, Michael V., M.D.
<(b)(6)@mgh.harvard.edu>
Cc: Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

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Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Date: Saturday, February 29, 2020 at 6:53 PM
To: "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>
Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is 1%*5% = 0.05%. But it takes 2 weeks or so before a patient who is infected

becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\%/8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

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From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Callahan, m." (b)(6)@mgh.harvard.edu>

Date: Saturday, February 29, 2020 at 2:39 PM

To: "Lawler, James V" (b)(6)@unmc.edu>

Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Carter Mecher

(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Caneva, Duane"

<(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better than poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital

Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V <(b)(6)@unmc.edu> wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Marcozzi, David" <(b)(6)@som.umaryland.edu>
Date: Saturday, February 29, 2020 at 5:11 AM
To: "Lawler, James V" <(b)(6)@unmc.edu>, Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
Associate Professor
Associate Chair of Population Health
Department of Emergency Medicine
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Deputy Medical Director for Mobile Integrated Health/Community Paramedicine
Baltimore City Fire Department
<https://protect2.fireeye.com/url?k=917477bf-cd217eac-91744680-0cc47adb5650-a870777d1b77d0d4&u=https://protect2.fireeye.com/url?k=09aa77d0-55fe5efb-09aa46ef-0cc47a6d17cc-688ea8ebe48d26b6&u=https://fire.baltimorecity.gov/mobile-integrated-health-community-paramedicine>
[fire.baltimorecity.gov] [protect2.fireeye.com]

Mailing Address:
6th floor, Suite 200
110 South Paca Street
Baltimore, Maryland 21201
(667)-214-2208 (office)

(b)(6)
[redacted]@som.umaryland.edu

Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson

From: James Lawler (b)(6) [redacted]@unmc.edu>
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher <cmecher@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi (b)(6) [redacted]@som.umaryland.edu>, "matthew. hepburn" <matthew.j.hepburn.civ@mail.mil>, Duane Caneva <duane.caneva@hq.dhs.gov>, Robert Kadlec <Robert.Kadlec@hhs.gov>, (b)(6) [redacted]@mgh.harvard.edu" <MVCALLAHAN@mgh.harvard.edu>, Tom Bossert <(b)(6) [redacted]@me.com>
Subject: Re: VA Projections using Cruise Ship Data

(b)(5)
[redacted]

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center

m: (b)(6) [redacted]
(b)(6) [redacted]@unmc.edu

From: Carter Mecher (b)(6)@charter.net>
Sent: Friday, February 28, 2020 3:06:10 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V (b)(6)@unmc.edu>; Marcozzi, David (b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil>; Caneva, Duane (b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D. (b)(6)@mgh.harvard.edu>; Tom Bossert (b)(6)@me.com>
Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	100%	3,672	100%	19,209,704	100%

The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported

to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- 600,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			

	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in IC
13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 te
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill asymptomatic

26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134
75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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Sender:	Carter Mecher (b)(6)@charter.net>
Recipient:	Lawler, James V (b)(6)@unmc.edu>; Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. (b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>; Marcozzi, David (b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil>; Tom Bossert (b)(6)@me.com>
Sent Date:	2020/03/01 10:06:58
Delivered Date:	2020/03/01 10:08:51

From:	Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd.OUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=E5EE4C35534C4AF9BDAC46789C034790-OAKLEY, CAI>
To:	Stecker, Judy (OS/IOS) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=0280b227911b40b6b30a81b8574ede6b-Stecker, Ju>; Murphy, Ryan (OS/ASPA) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=314e69c69a844b47bdd9f74bc60a8d44-Murphy, Rya>; Harrison, Brian (HHS/IOS) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d145efc9c35c4865aca6e9d47786b204-Harrison, B>
Subject:	Fwd: Pence: 15,000 coronavirus testing kits released over weekend
Date:	2020/03/01 10:21:02
Priority:	Normal
Type:	Note

Sent from my iPhone

Begin forwarded message:

From: "POLITICO Pro Health Care" <politicoemail@politicopro.com>
Date: March 1, 2020 at 9:45:36 AM EST
To: <caitlin.oakley@hhs.gov>
Subject: Pence: 15,000 coronavirus testing kits released over weekend
Reply-To: "POLITICO subscriptions" <reply-fe971c727160017c75-553241_HTML-783024725-1376319-271458@politicoemail.com>

Pence: 15,000 coronavirus testing kits released over weekend

By Matthew Choi

03/01/2020 09:45 AM EST

Vice President Mike Pence announced Sunday the release of 15,000 testing kits for the novel coronavirus and said the administration plans to release an additional 50,000 in response to the growing threat of a major outbreak in the United States.

Speaking with CNN's Jake Tapper on "State of the Union," Pence acknowledged the United States has lagged behind other countries in the manufacturing and distribution of coronavirus testing kits. Pence, whom President Donald Trump appointed to lead the administration's coronavirus efforts, added that several governors had raised the issue with him and that it was a "fair question."

"We're addressing it; we're leaning into it," Pence said. "And more importantly, we've established a process in a number of cities across the country where if somebody presents at the local hospital with a respiratory ailment, we want them also tested for coronavirus."

Pence's remarks came shortly after the first reported death from coronavirus in the United States,

which occurred in Washington state on Saturday. It was a rare acknowledgment of the challenges of combating the disease from the administration, which is led by a president who has tried to downplay the risk of the virus. Trump has frequently said his administration was the best equipped in the world to tackle an outbreak.

Pence has also tried not to be too alarmist over the outbreak, saying Sunday that the risk remains low. Still, he also said the president would probably be OK with closing schools and other disruptive actions by local officials to keep the virus from spreading.

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Date:	2020/03/01 10:34:16
Priority:	Normal
Type:	Note

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By Dan Goldberg

03/01/2020 10:32 AM EST

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Subject: Pence warns that more coronavirus cases are coming

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03/01/2020 10:32 AM EST

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Date:	2020/03/01 11:09:46
Priority:	Normal
Type:	Note

Azar: War powers on the table to increase medical supplies

By Matthew Choi

03/01/2020 11:08 AM EST

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Azar and Pence also said the administration was ready to heighten travel restrictions to contain the virus. Already, China and Iran have high travel barriers, with additional travel advisories in place for South Korea and Italy. Azar said he is not ruling out increasing restrictions for South Korea and Italy, but cited those countries' robust health care systems and close cooperation with the United States as why they have not been subjected to a more severe barrier.

Trump has come under fire for downplaying the severity of the outbreak, telling reporters that the risk is low for most Americans and using it as a political chip to castigate his Democratic rivals.

Azar said wider spread of the disease was an inevitability but that it was important to have an honest understanding of the crisis.

"The president is also trying to keep balance and messaging, so that the American people don't

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Azar and Pence also said the administration was ready to heighten travel restrictions to contain the virus. Already, China and Iran have high travel barriers, with additional travel advisories in

place for South Korea and Italy. Azar said he is not ruling out increasing restrictions for South Korea and Italy, but cited those countries' robust health care systems and close cooperation with the United States as why they have not been subjected to a more severe barrier.

Trump has come under fire for downplaying the severity of the outbreak, telling reporters that the risk is low for most Americans and using it as a political chip to castigate his Democratic rivals.

Azar said wider spread of the disease was an inevitability but that it was important to have an honest understanding of the crisis.

"The president is also trying to keep balance and messaging, so that the American people don't engage in unwarranted panic," Azar said.

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Recipient:	Adams, Jerome (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=184fe51f7350400b8a99dabd65acd65-Adams, Jero>; Schwartz, Erica (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=603e84a0e3744a5d8dcbd759f5dcad91-Schwartz, E>; Dulaigh, Joel (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group

	(FYDIBOHF23SPDLT)/cn=Recipients/cn=02b15e96dc484db29682c1d336e63441-Dulaigh, Jo>; Wright, Janet (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=41f672e2527b4f44891fb4fbe08cdfd-Wright, Jan>
Sent Date:	2020/03/01 11:18:06
Delivered Date:	2020/03/01 11:18:08

From:	POLITICO Pro Health Care <politicoemail@politicopro.com>
To:	AMA2 (OS/IOS) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c145629cc8ac4858bf1f0ce5dd0461dc-AMA2!>
Subject:	Azar: Need to treat Americans as 'adults' on coronavirus
Date:	2020/03/01 11:30:50
Priority:	Normal
Type:	Note

Azar: Need to treat Americans as 'adults' on coronavirus

By Rishika Dugyala

03/01/2020 11:28 AM EST

HHS Secretary Alex Azar said Sunday that, when it comes to coronavirus, it's important to "treat the American people like adults."

"It's very important that we treat the American people like adults and explain to them that we don't know where this will go, that we will see more cases, that we will see continued community spreading in the United States, as we're seeing around the world," Azar said on ABC's "This Week."

"How big that gets, we do not know," he continued. "But we have the most advanced public health system and surveillance system in the world ... And we're going to work to protect the American people with every tool that we've got."

Azar wouldn't classify the coronavirus as a pandemic: "I'm going to leave it for the World Health Organization to decide if we're there." But he said "we have the capability in the field to test 75,000 people," and that number would expand dramatically over the next week. Azar also hopes to expand surveillance testing of flu-like symptoms across the country.

This announcement comes amid criticism from Democrats that the administration has been slow to respond to the coronavirus.

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Azar defended the administration's response, saying more than 3,600 people in the U.S. have been tested and the CDC developed a lab test "with historic speed." He also defended President Donald Trump's demonizing of Democrats on their "hoax" reactions to Trump's handling of the situation.

"He's talking about the partisan sniping that we're seeing. And that's just — it's unnecessary. We

don't need to have this made a political issue. We're in a public health crisis here.”

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Sent Date:	2020/03/01 11:30:37
Delivered Date:	2020/03/01 11:30:50

From:	POLITICO Pro Health Care <politicoemail@politicopro.com>
To:	Harrison, Brian (HHS/IOS) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d145efc9c35c4865aca6e9d47786b204-Harrison, B>
Subject:	Azar: Need to treat Americans as 'adults' on coronavirus
Date:	2020/03/01 11:31:22
Priority:	Normal
Type:	Note

Azar: Need to treat Americans as 'adults' on coronavirus

By Rishika Dugyala

03/01/2020 11:28 AM EST

HHS Secretary Alex Azar said Sunday that, when it comes to coronavirus, it's important to "treat the American people like adults."

"It's very important that we treat the American people like adults and explain to them that we don't know where this will go, that we will see more cases, that we will see continued community spreading in the United States, as we're seeing around the world," Azar said on ABC's "This Week."

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"He's talking about the partisan sniping that we're seeing. And that's just — it's unnecessary. We

don't need to have this made a political issue. We're in a public health crisis here.”

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Sent Date:	2020/03/01 11:31:15
Delivered Date:	2020/03/01 11:31:22

From:	Sherman, Jennifer (HHS/OASH) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F30FE7FAE664419FA654B20EDCCB1E78-SHERMAN, JE>
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Subject:	FW: Azar: Need to treat Americans as 'adults' on coronavirus
Date:	2020/03/01 11:41:14
Priority:	Normal
Type:	Note

From: POLITICO Pro Health Care <politicoemail@politicopro.com>
Sent: Sunday, March 1, 2020 11:31 AM
To: Sherman, Jennifer (HHS/OASH) <Jennifer.Sherman@hhs.gov>
Subject: Azar: Need to treat Americans as 'adults' on coronavirus

Azar: Need to treat Americans as 'adults' on coronavirus

By Rishika Dugyala

03/01/2020 11:28 AM EST

HHS Secretary Alex Azar said Sunday that, when it comes to coronavirus, it's important to "treat the American people like adults."

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Recipient:	Adams, Jerome (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=184fe51f7350400b8a99dabd65ac0db5-Adams, Jero>; Schwartz, Erica (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=603e84a0e3744a5d8dcdb759f5dcad91-Schwartz, E>; Wright, Janet (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=41f672e2527b4f44891fb4fbe08cdfd-Wright, Jan>; Dulaigh, Joel (HHS/OASH) </o=ExchangeLabs/ou=Exchange Administrative Group

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Sent Date:	2020/03/01 11:41:14

From:	Weir, Charles (OS/ASPR/IO) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=USER24F49DA6>
To:	SOC ASPR SLT </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=462b691cb8a743c6870dbb5626596c94-SOC ASPR SL>; Field Operations and Response Division </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c982b5811dce4a9ca3e4c454ece0d74a-ASPR.DFOR>; OS - ASPR - PDAS - EMMO - Readiness - HPP </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f60f5b3f68f241d3b60300245eaf8b3-OS-ASPR-PDA>; Levine, Cheryl (OS/ASPR/EMMO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8c496822c9fb482cb961da78416ff7ef-Levine, Che>; OS Secretarys Operations Center </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=32b1f28d808b43b6903c00083291303e-Secretarys>
Subject:	New CDC Guidance
Date:	2020/03/01 11:41:34
Priority:	Normal
Type:	Note

With so many new guidance documents being produced in the last few days, many of these are not located in the What's New Section of the CDC Web Site so wanted to make sure you had easy access to them. This list also contains a document aimed at LTCs.

From: Burton, Tessa (CDC/DDNID/NCIPC/OD) <hrg6@cdc.gov>

Sent: Sunday, March 1, 2020 11:36 AM

To: ASPR Info Liaison (OS/ASPR) <IM.LNO@hhs.gov>; Weir, Charles (OS/ASPR/IO) <Charles.Weir@hhs.gov>

Subject: FW: In case you were wondering what we did today

Healthcare Supply of Personal Protective Equipment

- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/healthcare-supply-ppe-index.html>
- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/checklist-n95-strategy.html>
- <https://www.cdc.gov/coronavirus/2019-ncov/release-stockpiled-N95.html>

Resources for Healthcare Facilities

- <https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/index.html>
- <https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/steps-to-prepare.html>
- <https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/guidance-hcf.html>
- <https://wwwdev.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/prevent-spread-in-long-term-care-facilities.html>

Optimizing N95 Strategies

- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/index.html>
- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/conventional-capacity-strategies.html>
- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/contingency-capacity-strategies.html>
- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/crisis-alternate-strategies.html>

Also pushed Lab pages

- <https://www.cdc.gov/coronavirus/2019-nCoV/lab/index.html>
- <https://www.cdc.gov/coronavirus/2019-ncov/lab/tool-virus-requests.html>
- <https://www.cdc.gov/coronavirus/2019-ncov/lab/rt-pcr-detection-instructions.html>
- <https://www.cdc.gov/coronavirus/2019-ncov/lab/rt-pcr-panel-primer-probes.html>

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Delivered Date:	2020/03/01 11:41:34
Message Flags:	Unread

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CC:	Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Tom Bossert <(b)(6)@me.com>
Subject:	RE: VA Projections using Cruise Ship Data
Date:	2020/03/01 11:43:55
Priority:	Normal
Type:	Note

We are pondering this- thanks for the reminder. The challenge with creating epi curves is what R0 to use, and asking if the spread in California will actually reflect what happened in Wuhan (absent NPIs) versus the rest of China. I carry the 1918 Epi curves in my notebook to keep it in the front of my mind every day – to keep my eye on the ball and not forget the long game in light of all the activity each day.

What R naught is being used for epi curves in other states or cities in the US? I know California is unique, but there has been a lot of dialogue about which numbers to use for our modeling. I fear the estimates being used in the US are too low because its hard for some to accept the math doesn't lie. Carter's pontifications have been incredibly value to check my thinking and keep my eye on the ball.

Charity

Charity Dean MD, MPH
Assistant Director
California Department of Public Health



cid:image001.jpg@01D41445.FC500AB0

From: Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>
Sent: Sunday, March 1, 2020 5:25 AM
To: Carter Mecher <(b)(6)@charter.net>; Lawler, James V <(b)(6)@unmc.edu>; Caneva, Duane (DHS.GOV) <(b)(6)@hq.dhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>
Cc: Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Tom Bossert

(b)(6)@me.com>

Subject: RE: VA Projections using Cruise Ship Data

****[EXTERNAL MESSAGE]** FROM: Robert.Kadlec@hhs.gov**

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Here is something to ponder from the China CDC report from a couple of days ago.

"A main finding of this characterization and exploratory analysis of the first 72,314 cases of COVID-19 found in China in the 40 days between first recognition of the outbreak of pneumonia with unknown etiology on December 31, 2019 to the end of the study period on February 11, 2020 is that this novel coronavirus is highly contagious. It has spread extremely rapidly from a single city to the entire country within only about 30 days. Moreover, it has achieved such far-reaching effects even in the face of extreme response measures including the complete shutdown and isolation of whole cities, cancellation of Chinese New Year celebrations, prohibition of attendance at school and work, massive mobilization of health and public health personnel as well as military medical units, and rapid construction of entire hospitals."

From: Carter Mecher (b)(6)@charter.net>

Sent: Sunday, March 1, 2020 7:58 AM

To: Lawler, James V (b)(6)@unmc.edu>; Caneva, Duane (DHS.GOV) (b)(6)@hq.dhs.gov>; Callahan, Michael V., M.D. (b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>

Cc: Marcozzi, David (b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert (b)(6)@me.com>

Subject: RE: VA Projections using Cruise Ship Data

James said something to me that I do want to frame on the good wall (not the bad wall of understatements).

He gave a presentation to education leaders and I'm paraphrasing: With pandemic flu we would close the schools to protect the kids and reduce community transmission. With COVID we would close the

schools (not so much to protect the kids), but to reduce community transmission and protect their grandparents.

James can phrase it better than I can—but that is the message. Tom are you listening?

Sent from Mail for Windows 10

From: Lawler, James V

Sent: Sunday, March 1, 2020 7:41 AM

To: Carter Mecher; Caneva, Duane; Callahan, Michael V., M.D.; Dean, Charity A@CDPH

Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Listening to CNN “experts” this morning. They have no clue what they are talking about – saying that young people really shouldn’t worry and older/vulnerable folks are the only ones that should be changing behavior. No concept that our elders are depending on the actions of the entire community and also that once the healthcare system collapses, all of the services for which younger folks access that system will be gone as well. We have to get out in front of messaging.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>

Date: Sunday, March 1, 2020 at 6:20 AM

To: "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Lawler, James V"

<(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, "Dean, Charity A@CDPH" <charity.dean@cdph.ca.gov>

Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)"

<(b)(6)@mail.mil>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>

Subject: RE: VA Projections using Cruise Ship Data

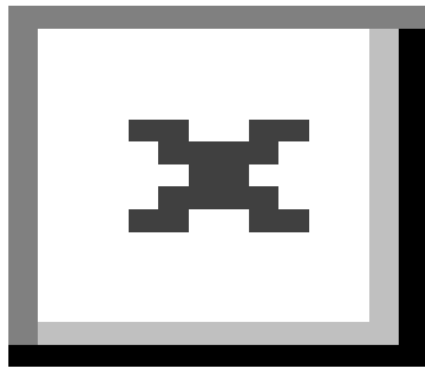
Non-UNMC email

Also have been thinking more about thresholds for pulling triggers.

I thought a but more about what James said about true prevalence—that it would be at lest twice as high as we currently think it is on the cruise ship. That would mean that true attack rate is closer to 40%, 80% of cases are asymptomatic, 6% of cases are hospitalized, 1% are critical (in ICU), and CFR is about 0.5%. But given the demographics of the cruise ship we are really the diluting effect of kids and young adults. They would be expected to have high attack rates and even higher rates of asymptomatic disease and mild disease (pushing up the % asymptomatics, reducing the overall hospitalization rate, ICU rate and CFR). So wanted to play with those estimates of thresholds again (will resend updated math).

Yesterday I was at my daughter's house helping them pull out vines that were planted as ground cover. The damn things grow everywhere, climbing up trees and smothering them (this isn't kudzu). My wife said something about these vines that made me think of what we are seeing in South Korea, Italy and now the US. When you plant these vines, they go thru 3 stages—sleep, creep, and leap. First year they don't seem to be doing much—they sleep (but they are laying down a root system that you cannot see). The next year they creep (seeing some spread above ground while the root system hidden from view continues to spread). And the next year they leap (the vines seem to explode everywhere you look).

That is exactly what Italy feels like (but speeded up). We are blind to what is “happening underground.” The root system is really those dendrite transmission trees that Richard likes. I pulled out the Singapore graphic again of their contact tracing of cases (that is the root system). They have given up continuing to update that graphic and only providing linkages between cases when they provide brief summaries of individual cases. Probably getting to complex to show.



cid:image001.png@01D5EF91.940CA250

In the US we just pulled up three random roots that are far from any plants we can see above the surface. My concern is that we are at the cusp of “leap” and cases are going to start popping like popcorn wherever we look.

This gets to the timing of NPIs

I went back to the Philadelphia-St Louis comparison of 1918. The difference between Philadelphia and St. Louis in 1918 in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks. In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia,

NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. A comparison of hospitalization rate looks a lot like Philadelphia and St. Louis.

Hong Kong confirmed its first case of a traveler from Wuhan on Jan 23 (symptom onset of Jan 18). They would later learn of their first case of local transmission with symptom onset on Jan 22. On Jan 25, within 1 week of the symptom onset of the first case of a traveler and within 3 days of symptom onset of the first local case, they were already taking actions like suspending the reopening of schools—they were a bit lucky because the schools were closed for the Chinese New Year. So they took aggressive actions within 1 week of first recognized case. There was a lot of activity in Hong Kong in the first 3 weeks of January (large number of suspected cases that they were monitoring but they were only had syndromic surveillance since there were no diagnostics early on. So Hong Kong had been busy isolating scores of patients during the first 3 weeks of January based only on clinical presentation.

Singapore confirmed its first case on January 23 (traveler from Wuhan). The individual had symptom onset on Jan 20 on a flight to Singapore. On Feb 3, Singapore confirmed its first case of local transmission. Symptom onset for that individual was on Jan 29. On Feb 7, Singapore identified additional cases of local transmission and declared Code Orange and intensifies response. So Singapore takes aggressive action two weeks after confirmation of 1st case in a traveler and within 4 days of first case of local transmission.

Sent from [Mail \[go.microsoft.com\]](mailto:go.microsoft.com) for Windows 10

From: Carter Mecher

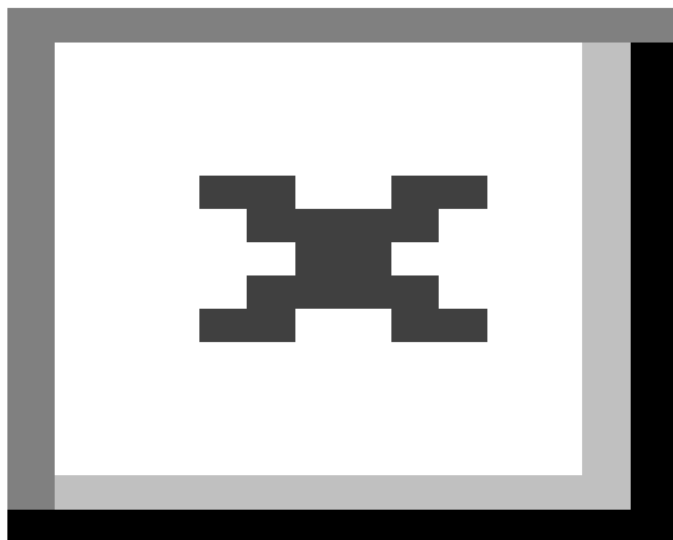
Sent: Sunday, March 1, 2020 5:58 AM

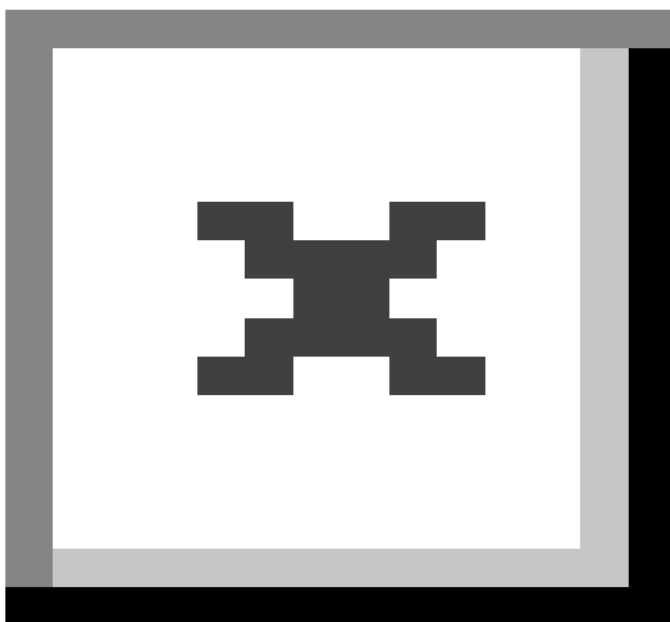
To: [Caneva, Duane](#); [Lawler, James V](#); [Callahan, Michael V.,M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: RE: VA Projections using Cruise Ship Data

A few things for the group. Have been interested in whether we can see anything happening with flu surveillance (especially ILI) in places with COVID outbreaks, Am interested in looking at Japan, Hong Kong, Singapore, and Italy. So far, only found Hong Kong (Eva Lee found it). I will keep looking—really interested in South Korea and Italy to get a better sense of whether looking st ILI will be of any value. https://www.chp.gov.hk/files/pdf/fluexpress_week8_27_2_2020_eng.pdf [chp.gov.hk] This is data thru Feb 22 (week 8). Hong Kong is really do a good job of surveillance. And what they are doing in terms of NPIs seems to be working (just like Singapore).





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From: [Caneva, Duane](#)

Sent: Saturday, February 29, 2020 11:18 PM

To: [Lawler, James V](#); [Carter Mecher](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: Re: VA Projections using Cruise Ship Data

+ Charity

CA seems first up.

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From: Lawler, James V <(b)(6)@unmc.edu>
Sent: Saturday, February 29, 2020 11:06:20 PM
To: Carter Mecher <(b)(6)@charter.net>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>
Cc: Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Date: Saturday, February 29, 2020 at 6:53 PM
To: "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>
Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is 1%*5% = 0.05%. But it takes 2 weeks or so before a patient who is infected

becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\%/8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

Sent from Mail [go.microsoft.com] for Windows 10

From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Callahan, m." <(b)(6)@mgh.harvard.edu>

Date: Saturday, February 29, 2020 at 2:39 PM

To: "Lawler, James V" <(b)(6)@unmc.edu>

Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Carter Mecher

<(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane"

<(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better than poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital

Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V <(b)(6)@unmc.edu> wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: "Marcozzi, David" <(b)(6)som.umaryland.edu>
Date: Saturday, February 29, 2020 at 5:11 AM
To: "Lawler, James V" <(b)(6)@unmc.edu>, Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m." <(b)(6)mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
Associate Professor
Associate Chair of Population Health
Department of Emergency Medicine
University of Maryland School of Medicine
[https://protect2.fireeye.com/url?k=eaf011e2-b6a518f1-eaf020dd-0cc47adb5650-d053ef9c2ac812ee&u=https://em.umaryland.edu/\[em.umaryland.edu\]](https://protect2.fireeye.com/url?k=eaf011e2-b6a518f1-eaf020dd-0cc47adb5650-d053ef9c2ac812ee&u=https://em.umaryland.edu/[em.umaryland.edu])

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Assistant Chief Medical Officer for Acute Care

University of Maryland Medical Center

<https://protect2.fireeye.com/url?k=2d4107cf-71140edc-2d4136f0-0cc47adb5650-c76b39076378dbd6&u=http://www.umm.edu/> [umm.edu]

Deputy Medical Director for Mobile Integrated Health/Community Paramedicine

Baltimore City Fire Department

<https://protect2.fireeye.com/url?k=c29449eb-9ec140f8-c29478d4-0cc47adb5650-a9eb97ddb8f1b62e&u=https://protect2.fireeye.com/url?k=09aa77d0-55fe5efb-09aa46ef-0cc47a6d17cc-688ea8ebe48d26b6&u=https://fire.baltimorecity.gov/mobile-integrated-health-community-paramedicine> [fire.baltimorecity.gov]

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*Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson*

From: James Lawler

(b)(6)

@unmc.edu>

Date: Friday, February 28, 2020 at 19:57

To: Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>,

David Marcozzi <(b)(6)@som.umaryland.edu>, "matthew. hepburn"

<(b)(6)@mail.mil>, Duane Caneva <(b)(6)@hq.dhs.gov>, Robert

Kadlec <Robert.Kadlec@hhs.gov>, "(b)(6)@mgh.harvard.edu"

<(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA

Director, International Programs & Innovation

Global Center for Health Security, and

Associate Professor of Medicine

Division of Infectious Diseases

University of Nebraska Medical Center

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher (b)(6)@charter.net>

Sent: Friday, February 28, 2020 3:06:10 PM

To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V (b)(6)@unmc.edu>; Marcozzi, David (b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil>; Caneva, Duane (b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D. (b)(6)@mgh.harvard.edu>; Tom Bossert (b)(6)@me.com>

Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%

Total population	243,565,966	100%	3,672	100%	19,209,704	100%
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The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240

Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- 600,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tes

11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in IC
13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 tes
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill asymptomatic
26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	

27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134
75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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Sender:	Dean, Charity A@CDPH <Charity.Dean@cdph.ca.gov>
Recipient:	Kadlec, Robert (OS/ASPR/IO) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Carter Mecher <(b)(6)@charter.net>; Lawler, James V <(b)(6)@unmc.edu>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Tom Bossert <(b)(6)@me.com>
Sent Date:	2020/03/01 11:43:19
Delivered Date:	2020/03/01 11:43:55

From:	Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd.UP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A182EDA693D040D3832BAE6EFCF7A255-KADLEC, ROB>
To:	Carter Mecher <(b)(6)>@charter.net>
CC:	Lawler, James V <(b)(6)>@unmc.edu>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. <(b)(6)>@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>; Marcozzi, David <(b)(6)>@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)>@mail.mil>; Tom Bossert <(b)(6)>@me.com>
Subject:	Re: VA Projections using Cruise Ship Data
Date:	2020/03/01 12:03:42
Priority:	Normal
Type:	Note

Is it your judgement that COVID is pushingcrowding Influenza out?

Sent from my iPhone

On Mar 1, 2020, at 10:08 AM, Carter Mecher <(b)(6)>@charter.net>wrote:

Was able to find South Korea flu surveillance.

<https://www.cdc.go.kr/board/board.es?mid=a30504000000&bid=0033>

I pulled the data for weeks 49-8 (it doesn't look like ILI is much help).

Week	ILI Rate	%Positive Samples for Influenza
49	19.5%	18.6%
50	28.5%	16.2%
51	37.8%	25.9%
52	49.8%	35.1%
1	49.1%	43.4%
2	47.8%	40.6%
3	42.4%	37.6%
4	40.9%	43.4%
5	28.0%	40.9%
6	16.4%	16.7%
7	11.6%	15.8%
8	8.5%	3.9%

<6ECD810E8CEE448097E96CCC06727521.png>

Sent from Mail for Windows 10

From: Lawler, James V

Sent: Sunday, March 1, 2020 8:43 AM

To: Kadlec, Robert (OS/ASPR/IO); Carter Mecher; Caneva, Duane (DHS.GOV); Callahan, Michael V.,M.D.; Dean, Charity A@CDPH

Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

As Carter points out, Wuhan and other cities started way too late.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m: (b)(6)

(b)(6)@unmc.edu

<8652377C655D4CE6946BE0A9C3B0144B.png>

From: Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>

Sent: Sunday, March 1, 2020 7:25:22 AM

To: Carter Mecher (b)(6)@charter.net>; Lawler, James V (b)(6)@unmc.edu>; Caneva, Duane (DHS.GOV) (b)(6)@hq.dhs.gov>; Callahan, Michael V.,M.D. (b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>

Cc: Marcozzi, David (b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil>; Tom Bossert (b)(6)@me.com>

Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Here is something to ponder from the China CDC report from a couple of days ago.

“A main finding of this characterization and exploratory analysis of the first 72,314 cases of COVID-19 found in China in the 40 days between first recognition of the outbreak of pneumonia with unknown etiology on December 31, 2019 to the end of the study period on February 11, 2020 is that this novel coronavirus is highly contagious. It has spread extremely rapidly from a single city to the entire country within only about 30 days. Moreover, it has achieved such far-reaching effects even in the face of extreme response measures including the complete shutdown and isolation of whole cities, cancellation of Chinese New Year celebrations, prohibition of attendance at school and work, massive mobilization of health and public health personnel as well as military

medical units, and rapid construction of entire hospitals.”

From: Carter Mecher <(b)(6)@charter.net>
Sent: Sunday, March 1, 2020 7:58 AM
To: Lawler, James V <(b)(6)@unmc.edu>; Caneva, Duane (DHS.GOV) <(b)(6)@hq.dhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>
Cc: Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

James said something to me that I do want to frame on the good wall (not the bad wall of understatements).

He gave a presentation to education leaders and I’m paraphrasing: With pandemic flu we would close the schools to protect the kids and reduce community transmission. With COVID we would close the schools (not so much to protect the kids), but to reduce community transmission and protect their grandparents.

James can phrase it better than I can—but that is the message. Tom are you listening?

Sent from Mail [protect2.fireeye.com] for Windows 10

From: Lawler, James V
Sent: Sunday, March 1, 2020 7:41 AM
To: Carter Mecher; Caneva, Duane; Callahan, Michael V., M.D.; Dean, Charity A@CDPH
Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Kadlec, Robert (OS/ASPR/IO); Tom Bossert
Subject: Re: VA Projections using Cruise Ship Data

Listening to CNN “experts” this morning. They have no clue what they are talking about – saying that young people really shouldn’t worry and older/vulnerable folks are the only ones that should be changing behavior. No concept that our elders are depending on the actions of the entire community and also that once the healthcare system collapses, all of the services for which younger folks access that system will be gone as well. We have to get out in front of messaging.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Date: Sunday, March 1, 2020 at 6:20 AM
To: "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, "Dean, Charity

A@CDPH" <charity.dean@cdph.ca.gov>

Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Richard Hatchett

<richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)"

(b)(6)@mail.mil>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>,

Tom Bossert (b)(6)@me.com>

Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Also have been thinking more about thresholds for pulling triggers.

I thought a but more about what James said about true prevalence—that it would be at least twice as high as we currently think it is on the cruise ship. That would mean that true attack rate is closer to 40%, 80% of cases are asymptomatic, 6% of cases are hospitalized, 1% are critical (in ICU), and CFR is about 0.5%. But given the demographics of the cruise ship we are really the diluting effect of kids and young adults. They would be expected to have high attack rates and even higher rates of asymptomatic disease and mild disease (pushing up the % asymptomatics, reducing the overall hospitalization rate, ICU rate and CFR). So wanted to play with those estimates of thresholds again (will resend updated math).

Yesterday I was at my daughter's house helping them pull out vines that were planted as ground cover. The damn things grow everywhere, climbing up trees and smothering them (this isn't kudzu). My wife said something about these vines that made me think of what we are seeing in South Korea, Italy and now the US. When you plant these vines, they go thru 3 stages—sleep, creep, and leap. First year they don't seem to be doing much—they sleep (but they are laying down a root system that you cannot see). The next year they creep (seeing some spread above ground while the root system hidden from view continues to spread). And the next year they leap (the vines seem to explode everywhere you look).

That is exactly what Italy feels like (but speeded up). We are blind to what is "happening underground." The root system is really those dendrite transmission trees that Richard likes. I pulled out the Singapore graphic again of their contact tracing of cases (that is the root system). They have given up continuing to update that graphic and only providing linkages between cases when they provide brief summaries of individual cases. Probably getting to complex to show.

<image001.png>

In the US we just pulled up three random roots that are far from any plants we can see above the surface. My concern is that we are at the cusp of "leap" and cases are going to start popping like popcorn wherever we look.

This gets to the timing of NPIs

I went back to the Philadelphia-St Louis comparison of 1918. The difference between Philadelphia and St. Louis in 1918 in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks. In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia, NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. A comparison of hospitalization rate looks a lot like Philadelphia and St. Louis.

Hong Kong confirmed its first case of a traveler from Wuhan on Jan 23 (symptom onset of Jan 18). They would later learn of their first case of local transmission with symptom onset on Jan 22. On Jan 25, within 1 week of the symptom onset of the first case of a traveler and within 3 days of symptom onset of the first local case, they were already taking actions like suspending the reopening of schools—they were a bit lucky because the schools were closed for the Chinese New Year. So they took aggressive actions within 1 week of first recognized case. There was a lot of activity in Hong Kong in the first 3 weeks of January (large number of suspected cases that they were monitoring but they were only had syndromic surveillance since there were no diagnostics early on. So Hong Kong had been busy isolating scores of patients during the first 3 weeks of January based only on clinical presentation.

Singapore confirmed its first case on January 23 (traveler from Wuhan). The individual had symptom onset on Jan 20 on a flight to Singapore. On Feb 3, Singapore confirmed its first case of local transmission. Symptom onset for that individual was on Jan 29. On Feb 7, Singapore identified additional cases of local transmission and declared Code Orange and intensifies response. So Singapore takes aggressive action two weeks after confirmation of 1st case in a traveler and within 4 days of first case of local transmission.

Sent from [Mail \[go.microsoft.com\]](mailto:go.microsoft.com) [protect2.fireeye.com] for Windows 10

From: Carter Mecher

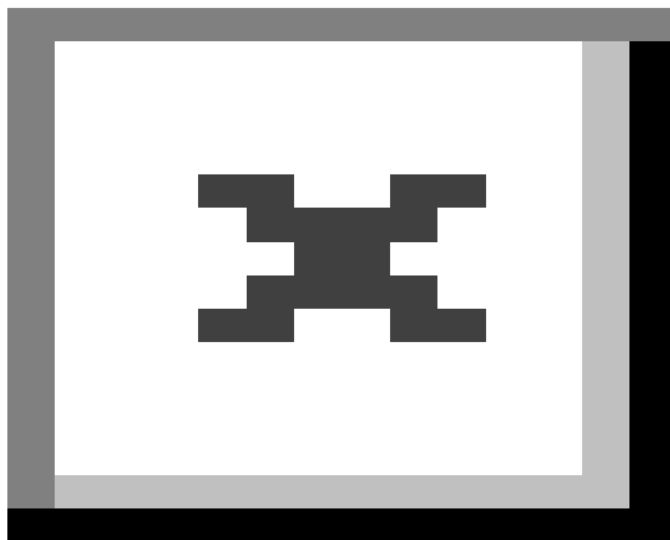
Sent: Sunday, March 1, 2020 5:58 AM

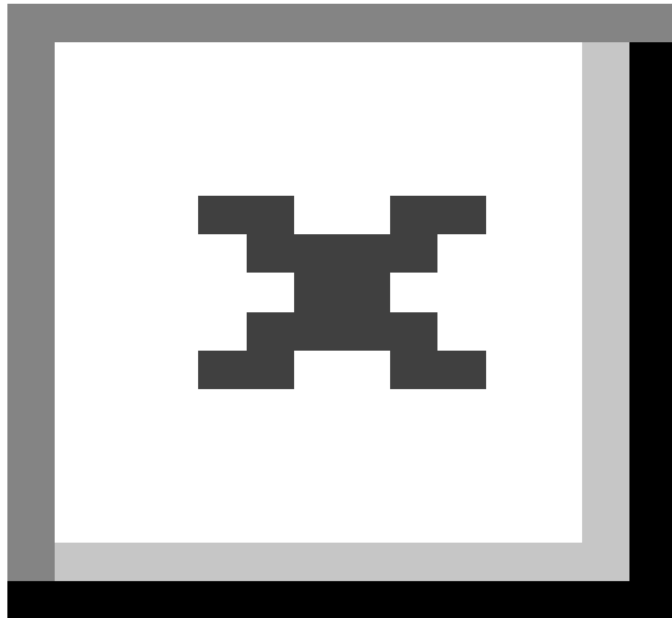
To: Caneva, Duane; Lawler, James V; Callahan, Michael V., M.D.; Dean, Charity A@CDPH

Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: RE: VA Projections using Cruise Ship Data

A few things for the group. Have been interested in whether we can see anything happening with flu surveillance (especially ILI) in places with COVID outbreaks, Am interested in looking at Japan, Hong Kong, Singapore, and Italy. So far, only found Hong Kong (Eva Lee found it). I will keep looking—really interested in South Korea and Italy to get a better sense of whether looking st ILI will be of any value. https://www.chp.gov.hk/files/pdf/fluexpress_week8_27_2_2020_eng.pdf [chp.gov.hk] [protect2.fireeye.com] This is data thru Feb 22 (week 8). Hong Kong is really do a good job of surveillance. And what they are doing in terms of NPIs seems to be working (just like Singapore).





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From: [Caneva, Duane](#)

Sent: Saturday, February 29, 2020 11:18 PM

To: [Lawler, James V](#); [Carter Mecher](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: Re: VA Projections using Cruise Ship Data

+ Charity

CA seems first up.

Get Outlook for iOS [aka.ms] [protect2.fireeye.com]

From: Lawler, James V <(b)(6)@unmc.edu>

Sent: Saturday, February 29, 2020 11:06:20 PM

To: Carter Mecher <(b)(6)@charter.net>; Callahan, Michael V., M.D.

<(b)(6)@mgh.harvard.edu>

Cc: Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>;

Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane

<(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert

<(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

CAUTION: This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact your component SOC with questions or concerns.

Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>

Date: Saturday, February 29, 2020 at 6:53 PM

To: "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m."

<(b)(6)@mgh.harvard.edu>

Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett

<richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)"

<(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec,

Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>

Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is 1%*5% = 0.05%. But it takes 2 weeks or so before a patient who is infected

becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\%/8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

Sent from Mail [go.microsoft.com] [protect2.fireeye.com] for Windows 10

From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Callahan, m." (b)(6)@mgh.harvard.edu>

Date: Saturday, February 29, 2020 at 2:39 PM

To: "Lawler, James V" (b)(6)@unmc.edu>

Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Carter Mecher (b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Caneva, Duane" (b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert (b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better than poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital

Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
U.S Dept of Health and Human Services
O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V. (b)(6)@unmc.edu wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: "Marcozzi, David" (b)(6)@som.umaryland.edu
Date: Saturday, February 29, 2020 at 5:11 AM
To: "Lawler, James V" (b)(6)@unmc.edu, Carter Mecher <cmecher@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil, "Caneva, Duane" (b)(6)@hq.dhs.gov, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m." (b)(6)@mgh.harvard.edu, Tom Bossert (b)(6)@me.com
Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
Associate Professor
Associate Chair of Population Health
Department of Emergency Medicine
University of Maryland School of Medicine
<https://em.umaryland.edu> [em.umaryland.edu] [protect2.fireeye.com]

Associate Professor
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<https://www.medschool.umaryland.edu/epidemiology/> [[medschool.umaryland.edu](https://www.medschool.umaryland.edu/)] [protect2.fireeye.com]

Assistant Chief Medical Officer for Acute Care
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Deputy Medical Director for Mobile Integrated Health/Community Paramedicine
Baltimore City Fire Department
<https://protect2.fireeye.com/url?k=917477bf-cd217eac-91744680-0cc47adb5650-a870777d1b77d0d4&u=https://protect2.fireeye.com/url?k=09aa77d0-55fe5efb-09aa46ef-0cc47a6d17cc-688ea8ebe48d26b6&u=https://fire.baltimorecity.gov/mobile-integrated-health-community-paramedicine>
[fire.baltimorecity.gov] [protect2.fireeye.com]

Mailing Address:
6th floor, Suite 200
110 South Paca Street
Baltimore, Maryland 21201
(667)-214-2208 (office)

(b)(6) [@som.umaryland.edu](mailto:(b)(6)@som.umaryland.edu)

Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson

From: James Lawler <(b)(6)@unmc.edu>
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi <(b)(6)@som.umaryland.edu>, "matthew. hepburn" <(b)(6)@mail.mil>, Duane Caneva <(b)(6)@hq.dhs.gov>, Robert Kadlec <Robert.Kadlec@hhs.gov>, (b)(6)@mgh.harvard.edu" <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m: (b)(6)

(b)(6) [@unmc.edu](mailto:(b)(6)@unmc.edu)

From: Carter Mecher <(b)(6)@charter.net>
Sent: Friday, February 28, 2020 3:06:10 PM
To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Tom Bossert <(b)(6)@me.com>
Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%
70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	100%	3,672	100%	19,209,704	100%

The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported

to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101
ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- 600,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			

	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in IC
13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 te
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill asymptomatic

26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134
75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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<8652377C655D4CE6946BE0A9C3B0144B.png>

<image001.png>

Sender:	Kadlec, Robert (OS/ASPR/IO) </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=A182EDA693D040D3832BAE6EFCF7A255-KADLEC, ROB>
Recipient:	Carter Mecher <(b)(6)@charter.net>; Lawler, James V <(b)(6)@unmc.edu>; Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Tom Bossert <(b)(6)@me.com>
Sent Date:	2020/03/01 12:03:42

From:	Lawler, James V <(b)(6)@unmc.edu>
To:	Evaluation Only. Created with Aspose.HTML. Copyright 2013-2020 Aspose Pty Ltd. (FYDIBOHF23SPDLT)/cn=Recipients/cn=a182eda693d040d3832bae6efcf7a255-Kadlec, Rob>; Carter Mecher <(b)(6)@charter.net>
CC:	Caneva, Duane (DHS.GOV) </o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b6ba3c00c7944e1b99ed3eecab996186-Duane.Canev>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>; Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Tom Bossert <(b)(6)@me.com>
Subject:	Re: VA Projections using Cruise Ship Data
Date:	2020/03/01 12:10:02
Priority:	Normal
Type:	Note

Interesting question. I think that flu is on downturn by itself. The more dramatic differential in week 8 could reflect –

1. • Normal variation that occurs outside peak flu times, that lots of other resp viruses circulate
2. • COVID predominance in ILI now that it is taking off and flu is on decline.

Given the ILI rate now double what lab confirmed flu %positive rate, that seems like a significant change.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>

Date: Sunday, March 1, 2020 at 11:03 AM

To: Carter Mecher <(b)(6)@charter.net>

Cc: "Lawler, James V" <(b)(6)@unmc.edu>, "Caneva, Duane (DHS.GOV)" <(b)(6)@hq.dhs.gov>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, "Dean, Charity A@CDPH" <charity.dean@cdph.ca.gov>, "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, Tom Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Is it your judgement that COVID is pushing crowding Influenza out?

Sent from my iPhone

On Mar 1, 2020, at 10:08 AM, Carter Mecher <(b)(6)@charter.net> wrote:

Was able to find South Korea flu surveillance.

<https://www.cdc.go.kr/board/board.es?mid=a30504000000&bid=0033> [cdc.go.kr]

I pulled the data for weeks 49-8 (it doesn't look like ILI is much help).

Week	ILI Rate	%Positive Samples for Influenza
49	19.5%	18.6%
50	28.5%	16.2%
51	37.8%	25.9%
52	49.8%	35.1%
1	49.1%	43.4%
2	47.8%	40.6%
3	42.4%	37.6%
4	40.9%	43.4%
5	28.0%	40.9%
6	16.4%	16.7%
7	11.6%	15.8%
8	8.5%	3.9%

<6ECD810E8CEE448097E96CCC06727521.png>

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From: Lawler, James V

Sent: Sunday, March 1, 2020 8:43 AM

To: Kadlec, Robert (OS/ASPR/IO); Carter Mecher; Caneva, Duane (DHS.GOV); Callahan, Michael V.,M.D.; Dean, Charity A@CDPH

Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

As Carter points out, Wuhan and other cities started way too late.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation
Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center
m: (b)(6)

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<8652377C655D4CE6946BE0A9C3B0144B.png>

From: Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>

Sent: Sunday, March 1, 2020 7:25:22 AM

To: Carter Mecher <(b)(6)@charter.net>; Lawler, James V <(b)(6)@unmc.edu>; Caneva, Duane (DHS.GOV [dhs.gov]) <(b)(6)@hq.dhs.gov>; Callahan, Michael V., M.D.

<(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>

Cc: Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Tom Bossert

<(b)(6)@me.com>

Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Here is something to ponder from the China CDC report from a couple of days ago.

“A main finding of this characterization and exploratory analysis of the first 72,314 cases of COVID-19 found in China in the 40 days between first recognition of the outbreak of pneumonia with unknown etiology on December 31, 2019 to the end of the study period on February 11, 2020 is that this novel coronavirus is highly contagious. It has spread extremely rapidly from a single city to the entire country within only about 30 days. Moreover, it has achieved such far-reaching effects even in the face of extreme response measures including the complete shutdown and isolation of whole cities, cancellation of Chinese New Year celebrations, prohibition of attendance at school and work, massive mobilization of health and public health personnel as well as military medical units, and rapid construction of entire hospitals.”

From: Carter Mecher <(b)(6)@charter.net>

Sent: Sunday, March 1, 2020 7:58 AM

To: Lawler, James V <(b)(6)@unmc.edu>; Caneva, Duane (DHS.GOV [dhs.gov])

<(b)(6)@hq.dhs.gov>; Callahan, Michael V., M.D. <(b)(6)@mgh.harvard.edu>; Dean, Charity A@CDPH <charity.dean@cdph.ca.gov>

Cc: Marcozzi, David <(b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>;

Hepburn, Matthew J CIV USARMY (USA) <(b)(6)@mail.mil>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

James said something to me that I do want to frame on the good wall (not the bad wall of understatements).

He gave a presentation to education leaders and I'm paraphrasing: With pandemic flu we would close the schools to protect the kids and reduce community transmission. With COVID we would close the schools (not so much to protect the kids), but to reduce community transmission and protect their grandparents.

James can phrase it better than I can—but that is the message. Tom are you listening?

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From: Lawler, James V
Sent: Sunday, March 1, 2020 7:41 AM
To: Carter Mecher; Caneva, Duane; Callahan, Michael V., M.D.; Dean, Charity A@CDPH
Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Kadlec, Robert (OS/ASPR/IO); Tom Bossert
Subject: Re: VA Projections using Cruise Ship Data

Listening to CNN "experts" this morning. They have no clue what they are talking about – saying that young people really shouldn't worry and older/vulnerable folks are the only ones that should be changing behavior. No concept that our elders are depending on the actions of the entire community and also that once the healthcare system collapses, all of the services for which younger folks access that system will be gone as well. We have to get out in front of messaging.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher <(b)(6)@charter.net>
Date: Sunday, March 1, 2020 at 6:20 AM
To: "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Lawler, James V" <(b)(6)@unmc.edu>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, "Dean, Charity A@CDPH" <charity.dean@cdph.ca.gov>
Cc: "Marcozzi, David" <(b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Also have been thinking more about thresholds for pulling triggers.

I thought a but more about what James said about true prevalence—that it would be at least twice as high as we currently think it is on the cruise ship. That would mean that true attack rate is closer to 40%, 80% of cases are asymptomatic, 6% of cases are hospitalized, 1% are critical (in ICU), and CFR is about 0.5%. But given the demographics of the cruise ship we are really the diluting effect of kids and young adults. They would be expected to have high attack rates and even higher rates of asymptomatic disease and mild disease (pushing up the % asymptomatics, reducing the overall hospitalization rate, ICU rate and CFR). So wanted to play with those estimates of thresholds again (will resend updated math).

Yesterday I was at my daughter's house helping them pull out vines that were planted as ground cover. The damn things grow everywhere, climbing up trees and smothering them (this isn't kudzu). My wife said something about these vines that made me think of what we are seeing in South Korea, Italy and now the US. When you plant these vines, they go thru 3 stages—sleep, creep, and leap. First year they don't seem to be doing much—they sleep (but they are laying down a root system that you cannot see). The next year they creep (seeing some spread above ground while the root system hidden from view continues to spread). And the next year they leap (the vines seem to explode everywhere you look).

That is exactly what Italy feels like (but speeded up). We are blind to what is “happening underground.” The root system is really those dendrite transmission trees that Richard likes. I pulled out the Singapore graphic again of their contact tracing of cases (that is the root system). They have given up continuing to update that graphic and only providing linkages between cases when they provide brief summaries of individual cases. Probably getting to complex to show.

<image001.png>

In the US we just pulled up three random roots that are far from any plants we can see above the surface. My concern is that we are at the cusp of “leap” and cases are going to start popping like popcorn wherever we look.

This gets to the timing of NPIs

I went back to the Philadelphia-St Louis comparison of 1918. The difference between Philadelphia and St. Louis in 1918 in terms when they pulled the trigger on NPIs was about two weeks during the course of their individual outbreaks. In St. Louis, NPIs were put in place 1 week after the first cases at Jefferson Barracks, 5 days after the first death, and 3 days after the first civilian cases in St. Louis. In Philadelphia, NPIs were put in place 3 weeks after the first cases at the Navy Yard, 16 days after the first civilian cases in Philadelphia, 2 weeks after the first death.

We would estimate that the outbreak in Wuhan had about a 2 week head start on the rest of Hubei. So the measures China implemented to slow transmission happened about two later in the course of the outbreak in Wuhan compared to the rest of Hubei Province. A comparison of hospitalization rate looks a lot like Philadelphia and St. Louis.

Hong Kong confirmed its first case of a traveler from Wuhan on Jan 23 (symptom onset of Jan 18). They would later learn of their first case of local transmission with symptom onset on Jan 22. On Jan 25, within 1 week of the symptom onset of the first case of a traveler and within 3 days of symptom onset of the first local case, they were already taking actions like suspending the reopening of schools—they

were a bit lucky because the schools were closed for the Chinese New Year. So they took aggressive actions within 1 week of first recognized case. There was a lot of activity in Hong Kong in the first 3 weeks of January (large number of suspected cases that they were monitoring but they were only had syndromic surveillance since there were no diagnostics early on. So Hong Kong had been busy isolating scores of patients during the first 3 weeks of January based only on clinical presentation.

Singapore confirmed its first case on January 23 (traveler from Wuhan). The individual had symptom onset on Jan 20 on a flight to Singapore. On Feb 3, Singapore confirmed its first case of local transmission. Symptom onset for that individual was on Jan 29. On Feb 7, Singapore identified additional cases of local transmission and declared Code Orange and intensifies response. So Singapore takes aggressive action two weeks after confirmation of 1st case in a traveler and within 4 days of first case of local transmission.

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From: Carter Mecher

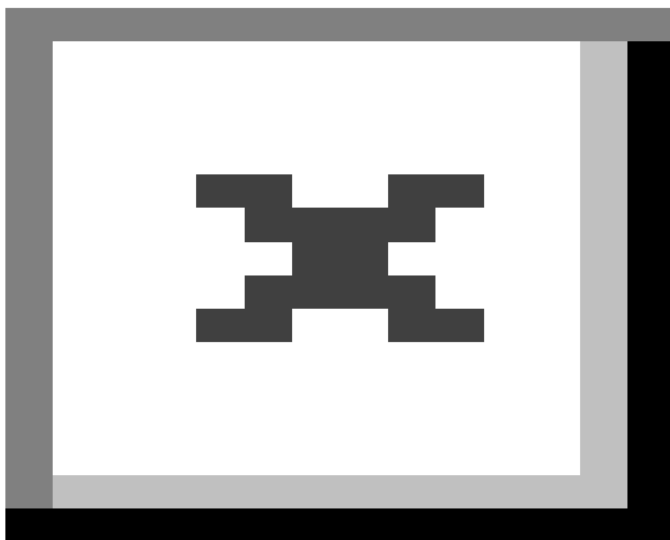
Sent: Sunday, March 1, 2020 5:58 AM

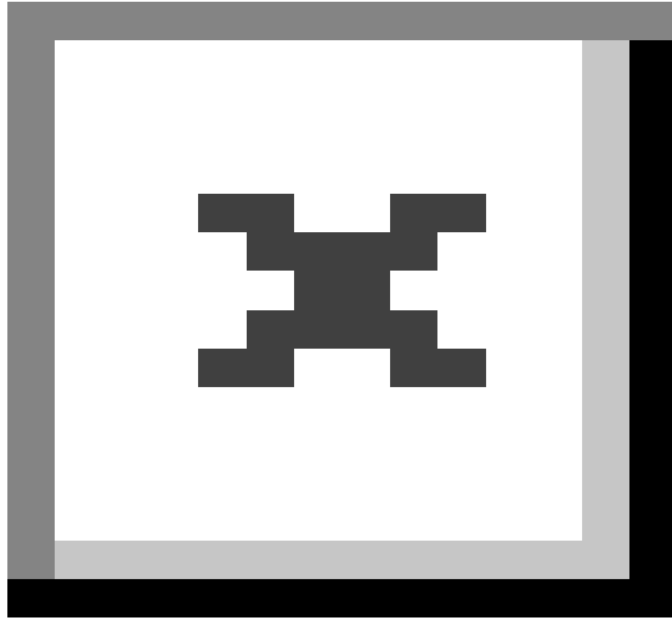
To: Caneva, Duane; Lawler, James V; Callahan, Michael V.,M.D.; Dean, Charity A@CDPH

Cc: Marcozzi, David; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: RE: VA Projections using Cruise Ship Data

A few things for the group. Have been interested in whether we can see anything happening with flu surveillance (especially ILI) in places with COVID outbreaks, Am interested in looking at Japan, Hong Kong, Singapore, and Italy. So far, only found Hong Kong (Eva Lee found it). I will keep looking—really interested in South Korea and Italy to get a better sense of whether looking st ILI will be of any value. https://www.chp.gov.hk/files/pdf/fluexpress_week8_27_2_2020_eng.pdf [chp.gov.hk] [protect2.fireeye.com] [protect2.fireeye.com] This is data thru Feb 22 (week 8). Hong Kong is really do a good job of surveillance. And what they are doing in terms of NPIs seems to be working (just like Singapore).





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From: [Caneva, Duane](#)

Sent: Saturday, February 29, 2020 11:18 PM

To: [Lawler, James V](#); [Carter Mecher](#); [Callahan, Michael V., M.D.](#); [Dean, Charity A@CDPH](#)

Cc: [Marcozzi, David](#); [Richard Hatchett](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Tom Bossert](#)

Subject: Re: VA Projections using Cruise Ship Data

+ Charity

CA seems first up.

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From: Lawler, James V (b)(6)@unmc.edu>
Sent: Saturday, February 29, 2020 11:06:20 PM
To: Carter Mecher (b)(6)@charter.net>; Callahan, Michael V., M.D. (b)(6)@mgh.harvard.edu>
Cc: Marcozzi, David (b)(6)@som.umaryland.edu>; Richard Hatchett <richard.hatchett@cepi.net>; Hepburn, Matthew J CIV USARMY (USA) (b)(6)@mail.mil>; Caneva, Duane (b)(6)@hq.dhs.gov>; Kadlec, Robert (OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Tom Bossert (b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

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Math looks good, Carter. And your calculations are enlightening. I had thought that hospital and ICU surveillance would be too late, but if you can do 100% surveillance on SARI in ICUs, then you might be able to act in time. Assume ICU is 1/5th of severe cases requiring hospitalization, then you are looking at roughly 12 cases per million. Let's assume 50% ascertainment rate for ICU, so when you detect 5-6 ICU COVID per million, you have hit your trigger. This assumes homogeneous distribution in communities, which is probably not true. So we may need to focus on certain segments (people from Chinatown in NY who are expected to have closer links to travelers from outbreak areas early) and have lower trigger – first 1-2 cases.

James Lawler, MD, MPH, FIDSA

m: (b)(6)
(b)(6)@unmc.edu

From: Carter Mecher (b)(6)@charter.net>
Date: Saturday, February 29, 2020 at 6:53 PM
To: "Lawler, James V" (b)(6)@unmc.edu>, "Callahan, m." (b)(6)@mgh.harvard.edu>
Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Caneva, Duane" (b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert (b)(6)@me.com>
Subject: RE: VA Projections using Cruise Ship Data

Non-UNMC email

Something I have been thinking about wrt thresholds for NPIs. We usually think of the window for implementing NPIs as before 1% prevalence. But this disease has more than 50% asymptomatics, so the threshold is really 0.5% prevalence of any symptoms (including very mild symptoms). But CDC criteria for testing is severe disease. Let's say that 5% of those who are infected have severe disease, that means our threshold is 1%*5% = 0.05%. But it takes 2 weeks or so before a patient who is infected

becomes seriously ill. Over the span of 2 weeks plus the lag time for testing, the outbreak could have had at least 3 doublings (so an 8-fold increase). That may be conservative. So we are really talking about a threshold of close to $0.05\%/8 = 0.00625\%$. For a city of 1 M, that is 62 serious cases, 625 symptomatic, 1,250 infected. In 2 weeks, these numbers could be 500 serious, 5,000 symptomatic, 10,000 infected (the 1% threshold). Once you are there, the window is closed. If we assume a 3 week lag from infection onset to death, the number of deaths would be based on a denominator of 3 weeks ago, so divide 1,250 infected by roughly 3 (assume cases triple in a week), to get 400. Assume a CFR of 0.8%, so about 3 deaths. More than 3 deaths per million population is probably too late. Somebody could check my math.

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From: Lawler, James V

Sent: Saturday, February 29, 2020 5:31 PM

To: Callahan, Michael V., M.D.

Cc: Marcozzi, David; Carter Mecher; Richard Hatchett; Hepburn, Matthew J CIV USARMY (USA); Caneva, Duane; Kadlec, Robert (OS/ASPR/IO); Tom Bossert

Subject: Re: VA Projections using Cruise Ship Data

Agree. We have set our d/c criteria for persons in isolation (documented infection) at improved sx's, afebrile x48 hrs (off antipyretics) and swab neg X3 24 hrs apart.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Callahan, m." (b)(6)@mgh.harvard.edu>

Date: Saturday, February 29, 2020 at 2:39 PM

To: "Lawler, James V" (b)(6)@unmc.edu>

Cc: "Marcozzi, David" (b)(6)@som.umaryland.edu>, Carter Mecher

<(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" (b)(6)@mail.mil>, "Caneva, Duane"

<(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, Tom Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Not great.....Better than poorly performed Induced sputum for AFB !

James, results from a 3rd Deep nasal swab could help us establish a viable protocol my 2 cents.

Michael Callahan MD MSPH DTM&H, DMCC (UK)
Director, Mass-Casualty Infection Operations
Vaccine & Immunotherapy Center
Massachusetts General Hospital

Boston, MA

Special Advisor to the Assistant Secretary of Public Health Preparedness and Response
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O'Neil Building 6th Floor
Washington, DC

On Feb 29, 2020, at 05:35, Lawler, James V <(b)(6)@unmc.edu> wrote:

External Email - Use Caution

NP x2 = 75% sensitivity, if my probability skilz are correct.

James Lawler, MD, MPH, FIDSA

m: (b)(6)

(b)(6)@unmc.edu

From: "Marcozzi, David" <(b)(6)@som.umaryland.edu>

Date: Saturday, February 29, 2020 at 5:11 AM

To: "Lawler, James V" <(b)(6)@unmc.edu>, Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, "Hepburn, Matthew J CIV USARMY (USA)" <(b)(6)@mail.mil>, "Caneva, Duane" <(b)(6)@hq.dhs.gov>, "Kadlec, Robert (OS/ASPR/IO)" <Robert.Kadlec@hhs.gov>, "Callahan, m." <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>

Subject: Re: VA Projections using Cruise Ship Data

Non-UNMC email

Wow, NP still misses 50%?

Can we assume this increase in magnitude (x2-3) for anyplace doing testing with NP? How much more sensitive with NP x2? That is what we do at Maryland.

Respectfully,

David Marcozzi, MD, MHS-CL, FACEP
Associate Professor
Associate Chair of Population Health
Department of Emergency Medicine
University of Maryland School of Medicine

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*Take time to deliberate; but when the time for action arrives, stop thinking and go in.
President Andrew Jackson*

From: James Lawler <(b)(6)@unmc.edu>
Date: Friday, February 28, 2020 at 19:57
To: Carter Mecher <(b)(6)@charter.net>, Richard Hatchett <richard.hatchett@cepi.net>, David Marcozzi <(b)(6)@som.umaryland.edu>, "matthew. hepburn" <(b)(6)@mail.mil>, Duane Caneva <(b)(6)@hq.dhs.gov>, Robert Kadlec <Robert.Kadlec@hhs.gov>, (b)(6)@mgh.harvard.edu" <(b)(6)@mgh.harvard.edu>, Tom Bossert <(b)(6)@me.com>
Subject: Re: VA Projections using Cruise Ship Data

Interestingly Japanese health folks only did OP swabs x1. NP swabs are much more sensitive. OP for us about half as sensitive (or less). NP already misses 50% with a single swab. So would probably multiply Japanese swab + by 2-3 to get true infection rate.

James Lawler, MD, MPH, FIDSA
Director, International Programs & Innovation

Global Center for Health Security, and
Associate Professor of Medicine
Division of Infectious Diseases
University of Nebraska Medical Center

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From: Carter Mecher <(b)(6)@charter.net>

Sent: Friday, February 28, 2020 3:06:10 PM

To: Richard Hatchett <richard.hatchett@cepi.net>; Lawler, James V <(b)(6)@unmc.edu>;
Marcozzi, David <(b)(6)@som.umaryland.edu>; Hepburn, Matthew J CIV USARMY (USA)
<(b)(6)@mail.mil>; Caneva, Duane <(b)(6)@hq.dhs.gov>; Kadlec, Robert
(OS/ASPR/IO) <Robert.Kadlec@hhs.gov>; Callahan, Michael V., M.D.
<(b)(6)@mgh.harvard.edu>; Tom Bossert <(b)(6)@me.com>

Subject: VA Projections using Cruise Ship Data

Non-UNMC email

I wanted to bounce this around the smaller group of wolverines. I also pulled the numbers of deaths annually in veterans and estimated deaths for all 19 M veterans using age specific death rates for males. The interesting thing is that the numbers of projected deaths related to COVID are actually pretty small compared to what we normally see for veterans. The challenge will be the amount of acute care—especially ICU care. The only chance that VA has is that we can knock down the attack rate thru TLC. The demand for acute care is overwhelming. The system would collapse under that level of demand.

Estimates of the impact of COVID on VA

In FY2019, VA cared for 6,271,019 unique veterans and had 9,237,638 veteran enrollees.

The Diamond Princess cruise ship outbreak can provide invaluable insights into the potential impact to VA.

Below is a comparison of the US population, the adult population aboard the cruise ship, and the Veteran population.

AGE	US Population 2017	% Distribution	Cruise Ship Passengers & Crew	% Distribution	FY2019 Veterans Vet Pop	% Distribution
20-29 years	45,489,095	19%	347	9%	932,473	5%
30-39 years	43,204,209	18%	428	12%	1,989,045	10%
40-49 years	40,617,231	17%	334	9%	2,194,505	11%
50-59 years	43,409,050	18%	398	11%	3,169,787	17%
60-69 years	36,824,083	15%	923	25%	3,735,399	19%

70-79 years	21,588,326	9%	1,015	27%	4,405,551	23%
>80 years	12,433,972	5%	227	6%	2,782,943	14%
Total population	243,565,966	100%	3,672	100%	19,209,704	100%

The Veteran population is similar to the Diamond Princess cruise ship population. If anything, the veteran population is even older (so at even higher risk). There were 3,711 passengers and crew aboard the crew ship (1,045 crew and 2,666 passengers). As of February 28, 2020, there have been 751 confirmed cases of COVID (attack rate of 20%). There have been 6 deaths thus far (lower limit of a case fatality rate of 0.80%). [A timeline of the outbreak is provided at the bottom of this message.] 380 of the confirmed cases were asymptomatic (50.6%). It is estimated that approximately 12-15% of the 751 passengers and crew with confirmed disease required acute care with 36 hospitalized patients reported to be in serious condition (5%). We looked at a range of ICU admissions (2%-5% of those who become infected).

Given the similarities of the demographics of the cruise ship and veterans, we could project the potential impact on veterans.

Veterans	Population FY2019	Total Infected (20% AR)	Number Asymptomatic (50.6%)	Hospitalizations 12%	ICU Admissions 2%	ICU Admissions 5%	Deaths CFR 0.80%
All Veterans	19,209,704	3,841,941	1,944,022	461,033	76,839	192,097	30,736
Veteran Enrollees	9,237,638	1,847,528	934,849	221,703	36,951	92,376	14,780
Veteran Uniques	6,271,019	1,254,204	634,627	150,504	25,084	62,710	10,034

Need to place these numbers into perspective.

Acute Inpatient Care	VHA Total
Operating Beds Hospital	15,744
Operating Beds Medicine/Surgery	9,817
Operating Beds ICU	1,692
ADC Hospital	9,805
ADC Medicine/Surgery	6,225
ADC ICU	1,101

ADC On a Ventilator	240
Daily Hospital Admissions	1,641
Daily Admissions Medicine/Surgery	1,226
Daily Admissions/Transfers in ICU	389
Emergency Department Care	
Daily ER Visits	6,874
Outpatient Care (non-ER)	
Daily Clinic Visits	209,336

The estimated number of deaths for all 19 M veterans is ~556,000. The number of annual deaths of veteran enrollees in FY2019 was 350,737. The projected number of COVID deaths for veterans is 14,780

The number of veterans who had an acute care hospitalization in FY2019 and died at any time during FY2019 was 62,375. The number of COVID deaths projected in veteran uniques (users) is 10,034.

Annually, VA has:

- 600,000 acute (medical/surgical) admissions
- 140,000 ICU admissions
- 2.5M ER/Urgent Care visits

If we assume that this outbreak will last approximately 3 months, we can then overlay the projected demand upon the usual background utilization over 3 months.

Even if we simply focus on the veteran uniques (veterans who used VA services and not enrollees), the numbers are a little overwhelming. We assumed that there might be 3 ER visits for each admission--so roughly 450,000 ER visits, 150,000 hospitalizations, and 25,000-63,000 ICU admissions.

Over an average 3-month period, VA would have ~625,000 ER/Urgent care visits, 150,000 acute care admissions, and 35,000 ICU admissions.

We assumed that acutely ill COVID patients will have long lengths of stay (14-21 days). If VA needs to absorb 150,000 hospitalizations (each with a LOS of 14-21 days), it would require 2.1 M to 3.2 M BDOCs.

If we assumed 14 day LOS for each ICU admission, 25,000-63,000 ICU admissions would equate to 350,000-882,000 ICU BDOCs.

The VA has 15,744 hospital operational beds (runs an ADC of only 9,805). Even if VA mobilized all those potential beds (15,744), for 3 months (90 days), we would generate the capacity for 1.4 M BDOCs.

Demand for care would exceed capacity by 700K BDOCs for a 14 day LOS and 1.7M BDOCs for a LOS of 21 days (1.5-2.2 times maximum capacity).

The VA has 1,692 ICU beds (runs an ADC of 1,101). Mobilizing all 1,692 ICU beds for 3 months (90 days), we would generate 152,000 BDOCs. Demand for ICU care would exceed capacity by 200,000-730,000 ICU BDOCs (2-5 times existing capacity).

This demand for care would not be constant across the 3 month period. The demand would rise exponentially, plateau, and then fall. The real concern is what will happen during the peak period of the epidemic.

VA does not have enough capacity to meet this demand, even if it mobilized every potential hospital bed to care for COVID patients (and there would be no capacity to care for usual demand for non-COVID acute care). And all this will be happening with a VA workforce that will be significantly diminished due to illness, home isolation, home quarantine and childminding responsibilities related to closure of schools and daycare, and fear.

Timeline of Diamond Princess cruise ship outbreak

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Note
20-Jan	Cruise ship departs from Yokohama Japan			
25-Jan	80 year old passenger disembarks in Hong Kong			
1-Feb	80 year old passenger confirmed to have COVID-19			
	When results known, certificate of landing canceled and ship under quarantine. Tests for the virus would be administered to three groups: those with symptoms, those who got off in Hong Kong, and those who had close contact with the infected passenger.			
3-Feb	Ship arrives in port of Yokohama Japan			
5-Feb	10 passengers and crew confirmed +	10		
6-Feb	31 more passengers and crew confirmed +	41		
7-Feb	30 more passenger and crew confirmed +	61		
8-Feb	9 more passenger and crew confirmed +	70		

10-Feb	66 more passenger and crew confirmed +	136		439 tes
11-Feb	39 more passenger and crew confirmed +	175		492 tes
12-Feb	28 more passenger and crew confirmed +	203		4 in IC
13-Feb	15 more passenger and crew confirmed +	218		713 tes
14-Feb	67 more passenger and crew confirmed +	285		927 tes
15-Feb	70 more passenger and crew confirmed +	355		1,211 tested; asymptomatic
16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) 61 Americans remained on board 44 Americans remained hospitalized in Japan	369		
17-Feb	85 more passenger and crew confirmed +	454		1,721 tested; serious
18-Feb	167 more passenger and crew confirmed +	621		3,011 tes
19-Feb	2 deaths	621	2	
20-Feb	13 more passenger and crew confirmed +	634	2	3,061 tested; seriously ill asymptomatic
23-Feb	Death reported in Japan		3	
24-Feb	Japan updates total to 691; US reports 36 in US	691	3	
25-Feb	Death reported in Japan; US reports 40 in US; UK 4; Australia 7; Hong Kong 4; Israel 2; Total 744; plus 4 not on ship	734	4	3,891 tested; seriously ill asymptomatic

26-Feb	US reports total of 42 cases in US; Japan announces that 45 of 813 former passengers have symptoms and will need to be tested; 14 new cases confirmed in the Diamond Princess cruise ship, raising the total to 705 cases inside the ship	750	4	
27-Feb	Australia (+1) 8 cases (repatriated)	751	4	
28-Feb	2 death reported in Japan	751	6	

As a check on deaths, I applied the age specific death rates per 100,000 population for the entire veteran population of 19M (90% male)

AGE	2019 VetPop	2017 Male All Cause Mortality per 100,000	Estimated 2017 All Cause Deaths
20 to 24 years	262,415	137.9	362
25 to 29 years	670,058	171.3	1,148
30 to 34 years	933,598	196.3	1,833
35 to 39 years	1,055,447	227.1	2,397
40 to 44 years	1,004,755	273.6	2,749
45 to 49 years	1,189,750	387.3	4,608
50 to 54 years	1,457,440	604.4	8,809
55 to 59 years	1,712,347	919.5	15,745
60 to 64 years	1,867,136	1,328.3	24,801
65 to 69 years	1,868,263	1,831.8	34,223
70 to 74 years	2,703,684	2,668.0	72,134
75 to 79 years	1,701,867	4,193.7	71,371
80 to 84 years	1,187,331	6,901.6	81,945
85 years and over	1,595,611	14,689.2	234,383
Total population	19,209,704	863.8	556,507

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