

From: Fauci, Anthony (NIH/NIAID) [E]
Sent: Mon, 24 Feb 2020 11:15:02 +0000
To: Kadlec, Robert (OS/ASPR/IO);Redd, John (OS/ASPR/SPPR);Yeskey, Kevin (OS/ASPR/IO);Shuy, Bryan (OS/ASPR/IO);Phillips, Sally (OS/ASPR/SPPR)
Cc: Redfield, Robert R. (CDC/OD)
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

We really need to discuss this.

From: Kadlec, Robert (OS/ASPR/IO) (b) (6)>
Sent: Sunday, February 23, 2020 11:31 PM
To: Redd, John (OS/ASPR/SPPR) (b) (6); Yeskey, Kevin (OS/ASPR/IO) (b) (6)>; Shuy, Bryan (OS/ASPR/IO) <(b) (6)>; Phillips, Sally (OS/ASPR/SPPR) (b) (6)>
Cc: Redfield, Robert R. (CDC/OD) (b) (6); Fauci, Anthony (NIH/NIAID) [E] (b) (6)
Subject: Fwd: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

Read this! This is unsettling if true efficient spreading in asymptomatics with negative test. Is that possible? Report is intermittent shedding is that true or artifact of poor sample collection or lack of sensitivity of pcr testing?

From Dr Eva Lee GaTech

“Means of spread A study from AMA confirmed many of the parameters assumed in our models:

- A 20-year old infected with COVID-19 left Wuhan and went on infecting 5 relatives. When they tested positive, she was finally isolated, but tested negative still, and later tested positive, and remain normal on chest CT with no fever, stomach or respiratory symptoms (cough or sore throat as late as Feb 11 (time of the papert study duration).

So spreading and its wide scope is unavoidable because there exists these very healthy individuals who can spread effectively -- even during incubation period -- while they remain perfectly healthy. It also showcases difficulty in testing -- negative test -- may not be the end of it. “

Sent from my iPhone

Begin forwarded message:

From: "Dr. Eva K Lee" (b) (6) >
Date: February 23, 2020 at 7:37:12 AM EST
To: Carter Mecher (b) (6) >
Cc: Richard Hatchett (b) (6) >, Tracey McNamara (b) (6) >, "Caneva, Duane" <(b) (6)>, (b) (6) >, "Dodgen, Daniel (OS/ASPR/SPPR)" <(b) (6)>, "DeBord, Kristin (OS/ASPR/SPPR)" <(b) (6)>, "Phillips, Sally (OS/ASPR/SPPR)" (b) (6) >, David Marcozzi (b) (6) >, "Hepburn, Matthew J CIV USARMY (USA)" (b) (6) >, Lisa Koonin (b) (6) "Walters, William ([STATE.GOV](https://www.state.gov))" (b) (6) >, "HARVEY, MELISSA" (b) (6) >, "WOLFE, HERBERT" (b) (6) >, "Eastman, Alexander" (b) (6) >, "EVANS, MARIEFRED" (b) (6) >, "Callahan, Michael V.,M.D." (b) (6) >, (b) (6) >, "Johnson, Robert (OS/ASPR/BARDA)" (b) (6) >, "Yeskey, Kevin" (b) (6) >, "Disbrow, Gary (OS/ASPR/BARDA)" (b) (6) >, "Redd, Johnt(OS/ASPR/SPPR)" (b) (6) >, "Hassell, David (Chris) (OS/ASPR/IO)" <(b) (6)>, "Hamel, Joseph (OS/ASPR/IO)" (b) (6) >, "Dean, Charity A@CDPH" (b) (6) >, "Lawler, James V" (b) (6) >, "Kadlec, Robert (OS/ASPR/IO)" (b) (6) > "Martin, Gregory J" (b) (6) >, "Borio, Luciana" (b) (6) >, "Hanfling, Dan" (b) (6) "McDonald, Eric" (b) (6) >, "Wade, David" (b) (6) >, "TARANTINO, DAVID A" (b) (6) >, "WILKINSON, THOMAS" (b) (6) >, "David Gruber" (b) (6) >, "KAUSHIK, SANGEETA" (b) (6) >, Nathaniel Hupert (b) (6) >
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start
Reply-To: "Dr. Eva K Lee" (b) (6) >

A few things I want to highlight --

1. **Means of spread** A study from AMA confirmed many of the parameters assumed in our models:

- A 20-year old infected with COVID-19 left Wuhan and went on infecting 5 relatives. When they tested positive, she was finally isolated, but tested negative still, and later tested positive, and remain normal on chest CT with no fever, stomach or respiratory symptoms (cough or sore throat as late as Feb 11 (time of the papert study duration).

So spreading and its wide scope is unavoidable because there exists these very healthy individuals who can spread effectively -- even during incubation period -- while they remain perfectly healthy. It also showcases difficulty in testing -- negative test -- may not be the end of it.

2. **Iranian cases**, though mysterious since the origin was not traced to China, may very well show that COVID-19 virus is very adaptable and mutating rapidly.

3. **Long recovery** The long recovery period is troublesome and must be taken seriously by health providers as they prepare for hospitalization. There is not much surge capacity in hospitals. So they must be innovative in the staggering process and isolation is of paramount importance. Government/Local should be readied for supplementing medical tents outside hospitals when needed (clearly extra staff too).

4. **Citizens' view** I was traveling so I did a real-time on-the-road analysis of human behavior and anxiety level. I overheard many people

- (a) asked when CDC would tell us more on what to do.
- (b) wish they could pull their kids out of school but there is no such option as part of the preventive measure (not announced by CDC).
- (c) wish CDC would recommend tele-work options so they don't have to travel and expose themselves and their family to unnecessary risk.
- (d) have no clue what the government is doing to keep the risk low as it is now. What exactly is being implemented to keep it low.

5. **Resource-limited countries** I pray that it would not reach the resource-limited countries like many in Africa (though it seems unavoidable). I cannot imagine the consequence.

6. **What we must do:** We must leverage the knowledge from other countries to better prepare ourselves. Japan's Crisis shows the importance of **TIMELY** proper isolation and **STRATEGIC** operations logistics in testing and in quarantine. South Korea (contrasting with Hong Kong, Singapore) demonstrates critical importance of **EARLY** social distancing and high compliance community NPI intervention. China's latest lockdown of 1/2 billion people truly signifies that gravity and uncharted territory of this virus. No country would take to such extreme measure.

7. **CFR** Since over 90% of influenza is never recorded/known, this COVID-19 seems to fall into similar spirit now, with so many cases of asymptomatic and transmission while incubating. While the true CFR remains unknown, the CFR of tested positive cases should offer a good comparison to the CFR of tested positive flu cases. That gives us a clearer estimate of health-resource burden.

(b) (6)

mobile: (b) (6)

Sent with [ProtonMail](#) Secure Email.

----- Original Message -----

On Saturday, February 22, 2020 10:19 PM, Carter Mecher (b) (6) > wrote:

Updates

South Korea (+123 with +2 deaths)—Total cases 556; Total deaths 4

<https://www.cdc.go.kr/board/board.es?mid=a30402000000&bid=0030>

Singapore (+3)--Total cases 89; Total deaths 0

Hong Kong (unchanged)--Total cases 69; Total deaths 2

Japan—Total cases 135; Total deaths 1

Sent from [Mai](#) for Windows 10

From: [Carter Mecher](#)

Sent: Saturday, February 22, 2020 6:28 AM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel](#)

[\(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally](#)

[\(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#);

[Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY,](#)

[MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#);

[Callahan, Michael V., M.D.](#); (b) (6);

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[James V](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); ['Martin, Gregory J](#)

[\(b\) \(6\)'](#); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade,](#)

[David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#)

(b) (6); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)

Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

Roundup this morning.

Singapore and Hong Kong are holding steady—both have implemented NPIs pretty early and have good surveillance.

Things are really accelerating in South Korea. Case count increased to 433 with 2 deaths.

<https://www.cdc.go.kr/board/board.es?mid=a30402000000&bid=0030>

Report below of COVID hitting Samsung's mobile device factory, which has now been shut down. This is what will happen here. The greatest concern is what this would mean for critical infrastructure sectors (including components of our healthcare system). The strategies I outlined for outpatient clinics could be used by business (most especially CI sectors) to maintain business continuity. It is as simple as the old saying, "Don't put all your eggs in one basket." It is both contingency planning (continuity of operations/continuity of business) and application of NPIs/TLC (especially social distancing in the community supported by home isolation and home quarantine).

We now have COVID in several countries across the ME (Iran, Israel, Egypt, Lebanon, UAE). We added Iran the day before yesterday and 3 countries yesterday (Israel, Egypt and Lebanon). Iran already appears to have a well established outbreak that will be tough to slow down given the estimated size with 5 deaths already (that is where Wuhan was by Jan-20). Japan is also seeing acceleration with local transmission (119 cases).

Italy is another area to watch.

<https://protect2.fireeye.com/url?k=c92f3372-957b2a0e-c92f024d-0cc47adc5fa2-927014023819d8ec&u=https://www.ilgazzettino.it/nordest/...D0yaql09ac4o84> Numerous infected in the hospital of Schiavonia (Padua)

"And unfortunately, what the experts feared since yesterday has occurred, when it was discovered that two patients had been hospitalized for about ten days at the Schiavonia hospital (Padua) without knowing that they had contracted the Coronavirus: since yesterday evening everyone those who attended the hospital were subjected to a swab to detect any infections, and the examination gave positive results in numerous cases. It means that there are other people, probably among those who attended the ward where two patients were hospitalized, who are now positive for the virus and consequently could in turn have spread the infection. Already yesterday evening the Governor of Veneto Luca Zaia ordered the progressive evacuation of the Padua hospital which should take place within 5-6 days."

“The hospital is surrounded by a 'sanitary cordon', with Carabinieri, workers of the Red Cross and Civil Protection. Cardiology chief Giampaolo Pasquetto arrived outside the hospital for a few minutes and reported the results of the swabs 'as far as I have been able to know from my colleagues so far,' he said. The modern structure is located between the towns of Este and Monselice and was recently inaugurated to serve the Euganean Hills area.”

<https://www.reuters.com/article/us-china-health-southkorea-samsung-elec/samsung-electronics-confirms-coronavirus-case-at-phone-factory-complex-in-south-korea-idUSKCN20G0CG>

SEOUL (Reuters) - Samsung Electronics said on Saturday that one coronavirus case had been confirmed at its mobile device factory complex in the southeastern city of Gumi, causing a shutdown of its entire facility there until Monday morning.

Samsung Electronics, the world's top smartphone maker, said the floor where the infected employee worked would be shut down until the morning of Feb. 25.

“The company has placed colleagues who came in contact with the infected employee in self-quarantine and taken steps to have them tested for possible infection,” Samsung said in a news release.

Samsung's factory in Gumi accounts for a small portion of its total smartphone production, and it makes high-end phones, mostly for the domestic market. Samsung produces most of its smartphones in Vietnam and India.

Gumi is close to the city of Daegu, home to a church at the center of South Korea's largest coronavirus outbreak.

South Korea said on Saturday that the number of people infected with the coronavirus in the country had more than doubled to 433.

Samsung said production at its chip and display factories in other parts of South Korea would not be affected.

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Friday, February 21, 2020 6:52 PM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6); [Johnson, Robert \(OS/ASPR/BARDA\)](#); [Yeskey, Kevin](#); [Disbrow, Gary \(OS/ASPR/BARDA\)](#); [Redd, John \(OS/ASPR/SPPR\)](#); [Hassell, David \(Chris\) \(OS/ASPR/IO\)](#); [Hamel, Joseph \(OS/ASPR/IO\)](#); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Martin, Gregory J](#); (b) (6); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#); (b) (6); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)

Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

Wuhan to add 19 additional hospital (when combined with the other 3 hospitals, this would add 30,000 beds).

Just to put that in perspective.

- There are 2.8 hospital beds in the US per 1,000 population.
- 30,000 beds is about the number of beds we would have for a population of 11 M.

When you add the 30,000 beds plus the 13,348 other beds added (total of 43,300 beds)

- There are 4.5 hospital beds in China per 1,000 population
- 43,300 beds is about the number of beds in China for a population of 9.6 M
- Wuhan will have nearly doubled its bed capacity

How hard would that be for us to double bed capacity in any major US city? (Really isolation beds for mild illness)

<https://www.straitstimes.com/asia/east-asia/coronavirus-wuhan-to-activate-one-more-temporary-hospital-with-3690-beds?fbclid=IwAR1otf14xNxKIuBRuODJzoTDMJWHueF9gTc06u1IM9nM2u-3VTpohOtFt7s>

WUHAN (XINHUA) – Wuhan, the epicentre of the coronavirus outbreak, plans to build another 19 makeshift hospitals to receive more infected patients, local authorities said Friday (Feb 21).

Upon their completion, all the makeshift hospitals in Wuhan are expected to offer 30,000 beds on Feb 25, said Mr Hu Yabo, deputy mayor of Wuhan at a press briefing on epidemic prevention and control.

To date, Wuhan has converted 13 existing venues into temporary hospitals, with a total of 13,348 beds, and about 9,313 beds have been put into use to treat patients with mild symptoms, said Mr Hu.

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)
Sent: Friday, February 21, 2020 1:59 PM
To: [Richard Hatchett](#); [Dr. Eva K Lee](#)
Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6); [Johnson, Robert \(OS/ASPR/BARDA\)](#); [Yeskey, Kevin](#); [Disbrow, Gary \(OS/ASPR/BARDA\)](#); [Redd, John \(OS/ASPR/SPPR\)](#); [Hassell, David \(Chris\) \(OS/ASPR/IO\)](#); [Hamel, Joseph \(OS/ASPR/IO\)](#); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Martin, Gregory J \(b\) \(6\)](#); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber \(b\) \(6\)](#); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

Weekly CDC update looks like flu might be on the downslope (good news). Watching the curves of % positive flu tests and ILI (should track one another as flu is receding). Trouble is the data reported today is for the week ending Feb 15 (so a week old).

Our inpatient nursing sick leave is tracking ILI (current thru 2/20)—
nothing unusual

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)
Sent: Friday, February 21, 2020 10:54 AM
To: [Richard Hatchett](#); [Dr. Eva K Lee](#)
Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel](#)
(OS/ASPR/SPPR); [DeBord, Kristin](#) (OS/ASPR/SPPR); [Phillips, Sally](#)
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Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

Singapore and Hong Kong are holding the line. Both implemented
NPIs early. No change in numbers from Hong Kong and Singapore saw
its case count increase by only 1 for the past two days.

Japan reported to have 107 cases. First reported case in young children
(see below)

Hokkaido boy 1st Japan case of coronavirus infection under 10
February 21, 2020 (Mainichi Japan)

SAPPORO -- Two elementary school brothers and a woman in her 40s in Hokkaido have been infected with the new coronavirus, with the younger sibling becoming the first infection under 10 in Japan, Hokkaido Gov. Naomichi Suzuki announced on Feb. 21.

Some graphics of the drop off in travel in China (pretty dramatic)

Jan-23

Feb-13

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To: [Richard Hatchett](#); [Dr. Eva K Lee](#)
Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel](#) (OS/ASPR/SPPR); [DeBord, Kristin](#) (OS/ASPR/SPPR); [Phillips, Sally](#) (OS/ASPR/SPPR); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6); [Johnson, Robert](#) (OS/ASPR/BARDA); [Yeskey, Kevin](#); [Disbrow, Gary](#) (OS/ASPR/BARDA); [Redd, John](#) (OS/ASPR/SPPR); [Hassell, David \(Chris\)](#) (OS/ASPR/IO); [Hamel, Joseph](#) (OS/ASPR/IO); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert](#) (OS/ASPR/IO); [Martin, Gregory J](#) (b) (6); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#) (b) (6); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)
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<https://www.cdc.go.kr/board/board.es?mid=a30402000000&bid=0030>

Here is the best link to track cases in South Korea. South Korea is now up to 204 cases and 1 death (South Korea is where Wuhan was 1 month ago).

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Sent: Friday, February 21, 2020 10:02 AM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6)

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Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

On a totally different note. Others have been plying with and modifying the notional conops for a healthcare system.

I set up some simple rules:

1. Protect uninfected patients and staff from infectious patients and staff (using all the tools that we have including home isolation and home quarantine, cohorting/physical separation, PPE, telehealth, etc.)
2. Provide acute care for COVID patients (continuum of ER-inpatient care-intensive care)
3. Support mildly ill COVID patients in home isolation--telehealth
4. Support patients in voluntary home quarantine--telehealth

5. Continue to address the usual mix of healthcare needs for patients (from outpatient care to acute care to mental health care to long term care)
 - a. Outpatient clinics and providers focus on wellness to minimize ER visits/hospitalization to unburden the acute care system—leverage telehealth
 - b. Continue to provide acute care and inpatient mental health care (continuum of ER-inpatient care-intensive care) for non-COVID conditions
 - c. Protect high-risk patients in residential/long term care (nursing homes, hospice, long term psychiatry, etc.)

The notional conops divides the healthcare system into hot and safe areas. The hot area is only acute care: ER-acute inpatient care-ICU care. The safe areas include a separate acute care area (ER-acute inpatient care-ICU care), all the outpatient clinics/care, other inpatient care areas such as mental health, as well as long term/residential care (nursing home, hospice, long term psychiatry, etc.).

Triage will not be easy (between hot and safe). Best I could come up with would be: (1) anyone already on home isolation or home quarantine (may need a medical record flag); (2) anyone with ILI (could narrow that down with a negative rapid flu test); (3) anyone with a sick household member with suspected COVID. Could be very difficult for an unconscious/confused, or trauma patient etc., but would probably err on the side of hot and think of additional layered strategies to minimize patient risk within that area (private rooms, patient PPE?). Triage would need to err on the side of keeping the safe area safe.

The mitigation measures are our best tools to reduce community transmission and reduce the probability of an infectious patient getting into a safe area. If we have a breach in a safe inpatient area, it pretty much converts that inpatient area into a hot area. That also means that we have the staff in that area exposed (because of limited availability of PPE, the staff in the safe area would not be PPE—PPE would have been directed to the staff in the hot area). Those staff would likely need to be placed on quarantine. The effect is we now have a much larger hot area with even fewer staff. That would really be a mess.

You have the same problem in the outpatient areas. Have a sick patient slip through and come in contact with a number of the clinic staff (not in PPE), and we now need to quarantine all those staff. In contrast to a breach for the inpatient area, the outpatient area can still operate as a safe area (just minus those staff who would now be on quarantine). But do that a few times and pretty soon you have nobody left to fight. One way I thought about dealing with this scenario is to take the outpatient staff and split them in two. One group works the clinic (physically present) for the usual clinic hours for a 14 day stretch (1 incubation period). Another group works from home (and practices social distancing, etc., really acting as if they are on home quarantine) and leverages telehealth technology to care for patients and help with monitoring those patients in home isolation and home quarantine. After 14 days the groups switch. [All along we monitor employees daily (whether at work or at home) for symptoms or sick household members] In the event of a breach, the groups immediately switch and the group that was working is placed on actual home quarantine (but still continues to work from home leveraging telehealth). That way if a breach does happen, we have a fallback response (that we are constantly practicing) that allows us to sustain outpatient care.

For the inpatient areas, I thought about the lone survivor model (holding back 1 Secretary and staff in the event that the government is decapitated). So think of a small group (would need to think thru what the composition of that team would look like for each area (acute care, inpatient mental health, long term care) that would at least provide the nucleus of the expertise necessary to reconstitute the service in the event of a major breach). This smaller group would vary in team members every 2 weeks and would rotate to work from home for 14 days stretches and practice social distancing (acting as if they were on home quarantine). They could also assist via telehealth (inpatient consultation, etc., while out of the hospital).

Is anyone thinking along these lines (really continuity of operations for the healthcare system)?

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)
Sent: Friday, February 21, 2020 8:35 AM
To: [Richard Hatchett](#); [Dr. Eva K Lee](#)
Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel](#) (OS/ASPR/SPPR); [DeBord, Kristin](#) (OS/ASPR/SPPR); [Phillips, Sally](#) (OS/ASPR/SPPR); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V.,M.D.](#); (b) (6); [Johnson, Robert](#) (OS/ASPR/BARDA); [Yeskey, Kevin](#); [Disbrow, Gary](#) (OS/ASPR/BARDA); [Redd, Johnt](#)(OS/ASPR/SPPR); [Hassell, David \(Chris\)](#) (OS/ASPR/IO); [Hamel, Joseph](#) (OS/ASPR/IO); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert](#) (OS/ASPR/IO); [Martin, Gregory J](#) (b) (6); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#) (b) (6); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

<https://www.cbc.ca/news/canada/ottawa/diamond-princess-coronavirus-trenton-cornwall-1.5470386>

Canada flies home passengers from cruise line.

Data in article:

47 of 256 Canadians contract

<https://protect2.fireeye.com/url?k=96ebd7bc-cabfcec0-96ebe683-0cc47adc5fa2-16a39afbec00c653&u=https://www.timesofisrael.com/israel...nee-diagnosed/>

Israel confirms first coronavirus case as cruise ship returnee diagnosed
 One of 11 Israelis who arrived in the morning after quarantine aboard Diamond Princess ship tests positive, after entering 14-day isolation at Sheba Medical Center

Trying to track cruises ship passenger/crew by country (data is sketchy)

Country	Passengers/Crew	Total Confirmed Cases	ICU Admissions	Deaths	% Infected
US	434	58	1?		13%

Hong Kong	330				
Canada	256	47			18%
Australia	241	48			20%
UK	78	6			8%
Italy	35				
South Korea	14				
Israel	11	1			9%
Japan				2	
Subtotal	1,399	160			
Total	3,711	634			17%

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From: [Carter Mecher](#)

Sent: Friday, February 21, 2020 5:46 AM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

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Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

China has again modified its reporting (first it added clinical cases to lab confirmed cases on Feb-12). Now it is subtracting out those clinical cases and limiting numbers to lab confirmed). Have continued to follow the hospitalization data from Hubei (see below).

Here is the data being reported by Hubei and Wuhan. Data is pretty sketchy prior to Jan-21.

Date	Hubei 2019-nCoV Confirmed Hospital Data							Hubei and Wuhan Cases & Hospitalization Rates				
	Total Current Inpatients	Mild Disease	Severely Ill	Critically Ill	Cum Discharges	Cum Deaths	Cum Inpatients	Hubei Cum cases	Wuhan Cases	Hubei Cum Hospitalization Rate per 100,000	Wuhan Cum Hospitalization Rate per 100,000	%Hubei Cases Hospitalized
1/14/20	6		6				6	41	41	0.01	0.5	
1/15/20	5		5			2	7	41	41	0.01	0.5	
1/16/20	5		5			2	7	45	45	0.01	0.5	
1/17/20	8		8			2	10	62	62	0.02	0.7	
1/18/20	136	100	33	3		3	139	121	121	0.2	1.4	
1/19/20	170	126	35	9		4	174	198	198	0.3	2.4	
1/20/20	239	176	51	12		7	246	270	258	0.4	3.1	
1/21/20						15		375	320	0.0	3.8	
1/22/20	399	304	71	24		17	416	444	390	0.7	4.7	
1/23/20	494	365	106	23	31	24	549	549	495	0.9	5.9	100%
1/24/20	658	472	129	57	32	39	729	729	572	1.2	6.8	100%
1/25/20	915		221		85	52	1,052	1,052	618	1.8	7.4	100%
1/26/20	1,645	1,013	563	69	44	76	1,423	1,423	698	2.4	8.3	100%
1/27/20	2,567	1,877	563	127	47	100	2,714	2,714	1,590	4.6	19.0	100%
1/28/20	3,349	2,450	671	228	80	125	3,554	3,554	1,905	6.1	22.8	100%
1/29/20	4,334	3,346	711	277	90	162	4,586	4,586	2,261	7.8	27.0	100%
1/30/20	5,486	4,392	804	290	116	204	5,806	5,806	2,63	9.9	31.5	100%

20									9			
1/31/20	6,738	5,444	956	338	166	249	7,153	7,153	3,215	12.2	38.4	100%
2/1/20	8,565	7,003	1,118	444	215	294	9,074	9,074	4,109	15.5	49.1	100%
2/2/20	9,618	7,917	1,223	478	295	350	10,263	11,177	5,142	17.5	56.4	92%
2/3/20	10,990	8,857	1,557	576	396	414	11,800	13,522	6,384	20.2	66.6	87%
2/4/20	12,627	10,107	1,809	711	520	479	13,626	16,678	8,351	23.3	81.6	82%
2/5/20	14,314	11,230	2,328	756	633	549	15,496	19,665	10,117	26.5	95.3	79%
2/6/20	15,804	11,802	3,161	841	817	618	17,239	22,112	11,618	29.5	108.3	78%
2/7/20	19,835	14,640	4,188	1,007	1,113	699	21,647	24,953	13,603	37.0	141.1	87%
2/8/20	20,993	15,746	4,093	1,154	1,439	780	23,212	27,100	14,982	39.7	153.4	86%
2/9/20	22,160	16,655	4,269	1,236	1,795	871	24,826	29,631	16,902	42.4	169.3	84%
2/10/20	25,087	18,743	5,046	1,298	2,222	974	28,283	31,728	18,454	48.3	196.7	89%
2/11/20	26,121	18,880	5,724	1,517	2,639	1,068	29,828	31,728	18,454	51.0	207.4	94%
2/12/20	33,693	26,609	5,647	1,437	3,441	1,310	38,444	48,206	32,994	65.7	314.6	80%
2/13/20	36,719	27,081	7,953	1,685	4,131	1,426	42,276	51,986	35,991	72.3	349.9	81%
2/14/20	38,107	27,955	8,276	1,876	4,774	1,457	44,338	54,406	37,914	75.8	369.4	81%
2/15/20	39,447	29,051	8,439	1,957	5,623	1,596	46,666	56,249	39,462	79.8	391.4	83%
2/16/20	40,814	31,017	8,024	1,773	6,639	1,696	49,149	58,182	41,152	84.0	415.6	84%
2/17/20	41,957	30,987	9,117	1,853	7,862	1,789	51,608	59,989	42,752	88.2	439.7	86%
2/18/20	43,471	32,225	9,289	1,957	9,128	1,921	54,520	61,682	44,412	93.2	469.3	88%
2/19/20	43,745	32,567	9,128	2,050	10,337	2,029	56,111	62,013	45,027	95.9	487.0	90%
2/20/20	42,056	31,059	8,979	2,018	11,788	2,144	55,988	62,422	45,346	95.7	486.2	90%

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From: [Carter Mecher](#)

Sent: Friday, February 21, 2020 5:09 AM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6)

[Johnson, Robert \(OS/ASPR/BARDA\)](#); [Yeskey, Kevin](#); [Disbrow, Gary \(OS/ASPR/BARDA\)](#); [Redd, Johnt\(OS/ASPR/SPPR\)](#); [Hassell, David \(Chris \(OS/ASPR/IO\)\)](#); [Hamel, Joseph \(OS/ASPR/IO\)](#); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Martin, Gregory J](#)

(b) (6); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#)

(b) (6); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)

Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

More on South Korea (sounds just like what happened at Jefferson Barracks, just outside St. Louis, in 1918, armed with the exact same tools they had more than 100 years ago to control an outbreak). I assume they must also be taking measures within the base to limit spread (keeping infectious individuals apart from those not yet infected with isolation and quarantine and social distancing).

<https://en.yna.co.kr/view/AEN20200221003000325?section=national/defense>

SEOUL, Feb. 21 (Yonhap) -- The military is making all-out efforts to prevent the new coronavirus from spreading further into the barracks, officials said Friday, after the country's first infections in the armed forces were confirmed.

Earlier in the day, a Navy sailor on the southern island of Jeju was confirmed to have contracted COVID-19 in the first such case among service personnel here.

Following the confirmation, the Navy has checked the temperature of all personnel at the base where the infected sailor served and quarantined all those who had contacts with the person, it said.

"We have carried out disinfection work at the base and are devoting all our efforts to preventing the spread of the new virus," the Navy said in a release.

An officer each from the Army and the Air Force were also confirmed to have the virus the same day.

The military is now working to identify personnel who have visited the southeastern city of Daegu and the surrounding North Gyeongsang Province since Feb. 10, as these areas have recently seen a surge in the number of infected people.

More than 5,000 service personnel are estimated to have visited the region during their vacation according to the military's preliminary investigation.

On Thursday night, the defense ministry said all personnel will be barred from vacationing, staying outside their bases and meeting visitors starting Saturday.

The decision was made at a meeting of top defense officials presided over by Defense Minister Jeong Kyeong-doo, during which he called for "extraordinary measures" to contain the spread of the virus.

Amid growing fears over the disease, the government called off a planned ceremony to mark the 60th anniversary of a pro-democracy movement in Daegu, which was designated a "special care zone" over the virus earlier in the day.

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From: [Carter Mecher](#)

Sent: Thursday, February 20, 2020 9:21 PM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY](#).

[MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6)
[Johnson, Robert \(OS/ASPR/BARDA\)](#); [Yeskey, Kevin](#); [Disbrow, Gary \(OS/ASPR/BARDA\)](#); [Redd, John \(OS/ASPR/SPPR\)](#); [Hassell, David \(Chris\) \(OS/ASPR/IO\)](#); [Hamel, Joseph \(OS/ASPR/IO\)](#); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Martin, Gregory J](#)
(b) (6); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#)
(b) (6); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

S. Korea reports 52 new virus cases, total now at 156

[Welfare/Medicine](#) 10:37 February 21, 2020

SEOUL, Feb. 21 (Yonhap) -- South Korea reported 52 new cases of the new coronavirus Friday, bringing the total number of infections in the nation to 156, with the potentially fatal illness spreading fast across the country.

The number of COVID-19 infections here has almost tripled in just three days, with most new infections traced to church services in the southeastern city of Daegu.

Of the 52 new cases, 41 are in Daegu, 300 kilometers southeast of Seoul, and the neighboring North Gyeongsang Province. Another three were reported in Seoul, the Korea Center for Disease Control and Prevention (KCDC) said in a statement.

Four buses are parked at a logistics terminal in Daegu, 300 kilometers southeast of Seoul, on Feb. 20, 2020. Thirty-eight new coronavirus cases were reported in the city on Feb. 21, 2020. (Yonhap)

The spike of infections in Daegu and several cases in Seoul, where routes of infections are not immediately traceable, have prompted health officials to declare that COVID-19 has begun spreading locally.

The KCDC said two new cases were reported in South Gyeongsang Province. In a sign that the virus may broadly spread nationwide, six provinces, including Gyeonggi, Jeju, Chungcheong and North Jolla, each reported one case.

Of the 52 new cases, 39 are linked to the Shincheonji Church of Jesus in Daegu, where the 31st patient, the country's probable "super spreader," attended worship services, the KCDC said.

A 61-year-old South Korean woman, who tested positive for the virus earlier this week, attended worship services at the church on Feb. 9 and this past Sunday.

KCDC Director Jung Eun-kyeong told reporters Thursday that the agency is uncertain whether the woman, known as the 31st patient, was a "super spreader" of the virus but asked 1,001 members of the church to self-isolate to stem the spread of the virus.

The government decided to designate Daegu and neighboring Cheongdo as "special management zones," following the spike in the number of infected people and the nation's first death from the virus.

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From: [Carter Mecher](#)

Sent: Thursday, February 20, 2020 5:38 PM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6) [Dodgen, Daniel](#)

[\(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally](#)

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[Callahan, Michael V.,M.D.](#); (b) (6)

[Johnson, Robert \(OS/ASPR/BARDA\)](#); [Yeskey, Kevin](#); [Disbrow, Gary](#)

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Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

From Feb-15 to Feb-20 the number of confirmed cases increased from 355 to 634 (increase of 279). The number of asymptomatics increased from 73 to 322 (increase of 249). So from Feb-15 to Feb-20, 249 of the

279 confirmed cases (89%) were asymptomatic. Seems a little odd. Also, read reports that all passengers and crew have been tested (but reports only note that 3,066 of the 3,711 have been tested).

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
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 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		1,219 tested; 73 asymptomatic

16-Feb	329 American evacuated from cruise ship (14 of the evacuees found to be +) Americans remained on board 44 Americans remained hospitalized in Japan	61	369	
17-Feb	85 more passenger and crew confirmed +		454	1,723 tested; 19 seriously ill
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 3,066 tested; 28 seriously ill; 322 asymptomatic

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From: [Carter Mecher](#)
Sent: Thursday, February 20, 2020 4:49 PM
To: [Richard Hatchett](#); [Dr. Eva K Lee](#)
Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel](#) (OS/ASPR/SPPR); [DeBord, Kristin](#) (OS/ASPR/SPPR); [Phillips, Sally](#) (OS/ASPR/SPPR); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6); [Johnson, Robert](#) (OS/ASPR/BARDA); [Yeskey, Kevin](#); [Disbrow, Gary](#) (OS/ASPR/BARDA); [Redd, John](#) (OS/ASPR/SPPR); [Hassell, David \(Chris\)](#) (OS/ASPR/IO); [Hamel, Joseph](#) (OS/ASPR/IO); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert](#) (OS/ASPR/IO); [Martin, Gregory J](#) (b) (6); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#) (b) (6); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

This is new

- Now 634 cases confirmed on the cruise ship (3,063 tested) (so not all the ship and crew have been tested 3,711)
- Slightly more than half are asymptomatic (previously we heard that 73 of 355 are asymptomatic)
- 28 in serious condition (4.4%)

Japan's Health Minister Katsunobu Kato told Parliament the two people from the Diamond Princess cruise ship who died had "received the best medical treatment" but couldn't be saved after catching the novel coronavirus on board. As of Thursday, 634 passengers and crew members were diagnosed with the virus out of 3,063 tested. Slightly more than half have no symptoms at all, officials said, and many of the remainder have only mild fever or a cough. Among patients who tested positive for the virus, 28 were reported in serious condition Thursday.

Doctors have said the virus can be particularly harmful in elderly patients, and one of the two fatal cases from the Diamond Princess, a Japanese man in his 80s, had pre-existing bronchial asthma and had been treated for angina. The other, a Japanese woman in her 80s without underlying illnesses, came down with a fever on Feb. 5, the same day passengers were told they would be quarantined in their cabins for two weeks, according to health ministry officials. The next day, she started suffering from diarrhea and saw a doctor on board.

She wasn't taken to a hospital until Feb. 12 when she started suffering shortness of breath. Her virus test came back positive the following day, and despite treatment with antiviral drugs normally used to treat HIV infection, she died Thursday.

Asked about the woman's case, health ministry official Hiroshi Umeda said, "I believe it was handled promptly." He said the ship was a difficult environment for medical staff but they worked day and night and tried to prioritize the most serious cases.

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From: [Carter Mecher](#)

Sent: Thursday, February 20, 2020 11:00 AM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel](#)
(OS/ASPR/SPPR); [DeBord, Kristin](#) (OS/ASPR/SPPR); [Phillips, Sally](#)
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Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

Keep an eye on South Korea too. Seeing rapid growth in cases in South Korea (see story below)

South Korea now reporting 104 cases and 1 death today. South Korea now implementing NPIs. This story is eerily reminiscent of the actions taken at Jefferson Barracks near St. Louis in 1918.

Also attached are update for Singapore (85 cases; 46 in hospital/4 in ICU; 4 kids, only 1 in hospital) and Hong Kong (69 cases, still no kids reported). Both have implemented NPIs (small increases in cases today). Japan has reported 10 new cases today—total now is 94.

South Korea reports first virus death as Daegu struggles to contain outbreak
<https://protect2.fireeye.com/url?k=3b9075da-67c46ca6-3b9044e5-0cc47adc5fa2-08635f0e31f1241a&u=https://www.stripes.com/news/pacific...break-1.619407>

SEOUL, South Korea — South Korea reported its first coronavirus-linked death Thursday, while the U.S. military tightened restrictions on travel to the southeastern city of Daegu due to an outbreak in infections in the area.

Daegu also urged residents to stay home as the city of 2.5 million people and surrounding areas struggled to contain an outbreak of the pneumonia-like disease.

The Army garrison in Daegu also restricted access and announced that schools and nonessential business would be closed for a second day on Friday.

In an exception to policy, U.S. service members were authorized to wear face masks in uniform “regardless of air quality conditions,” according to the garrison’s Facebook page.

Fast-moving developments this week were a blow to South Korea’s hope that the crisis was easing.

Instead, dozens of new cases were confirmed in recent days, with the total number of infections soaring to 104 on Thursday, according to the Korea Centers for Disease Control and Prevention

U.S. Forces Korea said, “there remains zero confirmed cases of USFK personnel with COVID-19.”

The virus first appeared in December in Wuhan, China, and spread to nearly 30 countries. More than 2,000 people have died — most in mainland China.

A South Korean man in his 60s died Wednesday at a hospital in the southeastern city of Cheongdo and posthumously tested positive for the virus, the KCDC said Thursday. It was South Korea’s first death from the virus.

USFK **raised the risk level for the military community** to moderate on Wednesday and banned all nonessential travel to Daegu due to an outbreak linked to a church near the Army garrison in the city.

On Thursday, USFK added that all travel by American troops to, from and around Daegu requires authorization from their leadership. The precaution was “highly encouraged” for all family members, civilians and contractors as well.

“All off-installation travel for all USFK populations should be minimized to reduce potential contamination,” USFK announced on its website.

U.S. Army Garrison Daegu, about 200 miles southeast of Seoul, also said visitors not performing mission essential or official business would be denied access as it implemented health checks at the gates.

Nonessential personnel were not required to go to work on Friday and most activities would be suspended, including the schools, it said.

The garrison also recommended that members of the military community avoid public places and transportation in the city, including

stores, restaurants and other heavily congested areas until the situation is brought under control.

Self-quarantine measures were ordered for any American troops who had visited the affected New World Church, but garrison commander Col. Edward Ballanco said earlier Thursday that no Americans were known to have done so.

He also urged Americans to avoid a local hospital where the woman believed to have been a carrier was treated.

The garrison also lifted limits on wearing face masks for American troops in uniform, who normally are only allowed to wear them on days with extreme pollution.

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)
Sent: Thursday, February 20, 2020 8:20 AM
To: [Richard Hatchett](#); [Dr. Eva K Lee](#)
Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6); [Johnson, Robert \(OS/ASPR/BARDA\)](#); [Yeskey, Kevin](#); [Disbrow, Gary \(OS/ASPR/BARDA\)](#); [Redd, John \(OS/ASPR/SPPR\)](#); [Hassell, David \(Chris\) \(OS/ASPR/IO\)](#); [Hamel, Joseph \(OS/ASPR/IO\)](#); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Martin, Gregory J \(b\) \(6\)](#); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber \(b\) \(6\)](#); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

Last thing. Keep a very close eye on Japan. The outbreak is starting to take off there with numbers of cases scattered across the country with no link to known cases. We are also seeing nosocomial transmission (a number of healthcare workers infected). There is also a large number of cases hospitalized in Japan related to the cruise ship, and now the release of large numbers of passengers from the cruise ship into the community. Yesterday they reported a total of 84 cases—caught up to

Singapore. But unlike Singapore, Japan has been slow to implement NPIs. The other concern is that Japan's population is disproportionately aged (it has the highest % age 65 of any country). In Japan, 27% of the population is ≥ 65 ; in the US, 15.6% of the population is ≥ 65 . And Japan can also claim the largest city in the world (metro Tokyo with 38 M people—pretty much the population of California crammed into an area smaller than the size of Connecticut).

Japan also has the 10th largest city in the world (Osaka with 19 M people).

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From: [Carter Mecher](#)

Sent: Thursday, February 20, 2020 7:15 AM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6) [Dodgen, Daniel](#) (OS/ASPR/SPPR); [DeBord, Kristin](#) (OS/ASPR/SPPR); [Phillips, Sally](#) (OS/ASPR/SPPR); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6)

[Johnson, Robert](#) (OS/ASPR/BARDA); [Yeskey, Kevin](#); [Disbrow, Gary](#) (OS/ASPR/BARDA); [Redd, John](#) (OS/ASPR/SPPR); [Hassell, David \(Chris\)](#) (OS/ASPR/IO); [Hamel, Joseph](#) (OS/ASPR/IO); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert](#) (OS/ASPR/IO); [Martin, Gregory J](#)

(b) (6) [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#)

(b) (6) [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)

Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

What has me worried is what happened on the cruise ship is a preview of what will happen when this virus makes its way to the US healthcare system (not to mention institutionalized high-risk populations in the US, like nursing homes). I'm not sure that folks understand what is just over the horizon.

Remember the story about Mann Gulch? We are at the equivalent of about 5:44. I anticipate that when we reach 5:45, there is going to be chaos and panic to get anything in place. I doubt that what we would

then hurriedly put in place will be any better than what they did on that cruise ship. As a consequence, would expect much the same results.

I listened to the discussion yesterday. After listening to James and Michael describe the conditions on and around the cruise ship, I wondered whether anyone in healthcare leadership (outside the expertise at our biocontainment facilities) is thinking about infection control practices for any staff entering areas of a hospital caring for COVID patients (like changing clothes before entering and perhaps wearing scrubs, not bringing personal items into the area like iPhones, iPads, stethoscopes, white coats, purses, briefcases, etc.)? And instituting policies that require all patients to phone for clearance to enter prior to presenting at safe acute and non-acute areas including community based clinics? Are we confident of the infection control practices of acute care staff (that they know the basics of how to don and doff PPE and behavior while in PPE?) Would HCWs in outpatient clinics or long term care facilities be any better prepared than the crew on board the cruise ship or the responders in Japan? I'm no expert in infection control and would defer to the expertise in this group. I was just a little surprised how little this seemed to be a concern for the healthcare leaders gathered yesterday.

I think we are getting close to the point where we need to drop those things that are not critical and focus on the most important things.

We are going to have a devil of time with lab confirmation—it is just too slow (they had a 2 day turnaround on the cruise ship) and we just don't have the capacity for the volume of tests we would anticipate. Charity has stressed this point again and again. That means we are going to have to fly blind early on. Perhaps the best we are going to be able to do in the near term if things begin to accelerate is screen all suspect cases (pretty much anyone with ILI symptoms) with a quick flu test and assume anyone who tests negative is suspected COVID until proven otherwise; and treat everyone who tests positive with Tamiflu. It will prove problematic early on, but as the epidemic barrels along, COVID will displace everything (at that point we will just assume that anyone with a fever or ILI has COVID). The problem is in the beginning. It is going to be so hard to sort things out. Matt, James and others are pushing for more rapid screening—but we just aren't there yet. The consequence is that we will be placing patients with resp illness (that is not flu and presumed to be COVID) in areas with actual

COVID patients. I hate to do that, but not sure how it could be avoided early on. But we would only do that for those who are ill enough to be hospitalized. The large number of asymptomatic and mildly ill patients would be under home isolation (so no worries about mixing confirmed and suspected patients). The downside is that we would have larger number of people in isolation and home quarantine than is really necessary (and the consequence of increased workplace absenteeism).

And it is because home isolation and home quarantine are so important, healthcare systems (and not just public health) have to grab a hold of operationalizing those NPIs with both hands. A while back, I created some prescriptions (tongue in cheek), just to underscore that physicians do have a role in isolation and quarantine (it is not limited to public health). We might not have pharmaceuticals available to treat COVID, but why can't we write prescriptions for non-pharmaceuticals? I don't think healthcare leaders appreciate this point. Every COVID patient we admit or see in the ER will require us to follow up with household members to make sure they know to home quarantine (need to do the same anywhere in our system we find a patient who is infected). You could not imagine the pushback I have received when I proposed that we must have an active role—people seem to think that state and local public health is alone responsible for this. I would think public health will be overwhelmed and taking charge of this is our best strategy to keep our safe areas safe.

I would be interested to hear how other healthcare systems and public health leaders are thinking about this.

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Thursday, February 20, 2020 6:39 AM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#);

Callahan, Michael V., M.D.; (b) (6);
Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary
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(OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler,
James V; Kadlec, Robert (OS/ASPR/IO); 'Martin, Gregory J
(b) (6); Borio, Luciana; Hanfling, Dan; McDonald, Eric; Wade,
David; TARANTINO, DAVID A; WILKINSON, THOMAS; David Gruber
(b) (6); KAUSHIK, SANGEETA; Nathaniel Hupert
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

Keeping track of the outbreak aboard the cruise ship. The latest update is the announcement of 2 deaths (both patients in their 80s). An 87-year-old man and an 84-year-old woman, died on the 20th. Both were Japanese (the 87-year-old man was hospitalized on Feb-11 and the 84-year-old woman on Feb-12). So time to death from recognition of infection was 8-9 days. On Feb-12, the total number of confirmed cases was 203. So estimated CFR back dating the denominator to Feb-12 is 1%. Assuming a denominator of 621, the CFR is 0.3%. If deaths are lagging by 8-10 days (and confirmed cases plateau), we should have a pretty good estimate of CFR for the entire group in another week or so. Will need to peel off the number of cases involving the crew member to get a better estimate of CFR in the elderly. These numbers are within the range we have been estimating.

The 2,666 passengers are similar in age (and likely in co-morbidities) to the population we see in a nursing home or residential care facility. The 1,045 crew are a proxy for a young healthy population. It will be important to look at the outcomes separately. One of the concerns is how a 'remake of this movie' could play out in similarly confined populations of elderly frail Americans. Here are the numbers of long term care facilities/programs in the US that care for the frail elderly. A large number of locations and a large number of residents/participants. I know that healthcare leaders were engaged yesterday, is anyone engaging this sector (long term care)? The healthcare leaders seemed more concerned about critical supply shortages (akin to the IV fluid shortage). Listening to them, it felt like their concerns seemed almost divorced from the threat of COVID.

	Number of Facilities / Communities	Number of Agencies / Centers	Number of Beds	Number of Residents	Number of Participants
Nursing Homes	15,600		1,700,000	1,300,000	
Residential Care	28,900		996,100	811,500	
Hospice Care		4,300			1,400,000
Adult Day Care		4,600			286,300

Source: <https://www.cdc.gov/nchs/fastats/nursing-home-care.htm>

The outbreak on the cruise ship should be the wake up call for leaders in long term care (and I would think healthcare overall).

Here is a summary of the cruise ship data (as of Feb 20)

Date	Event	Cumulative Number of Confirmed Cases	Cumulative Number of Deaths	Notes
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	61		

	confirmed +			
8-Feb	9 more passenger and crew confirmed +	70		
10-Feb	66 more passenger and crew confirmed +	136		439 tested
11-Feb	39 more passenger and crew confirmed +	175		492 tested
12-Feb	28 more passenger and crew confirmed +	203		4 in ICU
13-Feb	15 more passenger and crew confirmed +	218		713 tested
14-Feb	67 more passenger and crew confirmed +	285		927 tested
15-Feb	70 more passenger and crew confirmed +	355		73 asymptomatic; 1,219 tested
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		1,723 tested; 19 seriously ill
18-Feb	167 more passenger and crew confirmed +	621		3,011 tested
19-Feb	2 deaths	621	2	

Data by country is a bit sketchy

Country	Passengers	Total Confirmed Cases	ICU Admissions	Deaths
US	434	58	1	
Hong Kong	330			
Canada	256	32		
Australia	241	46		
UK	78	6		
Italy	35			

South Korea	14			
Japan				
Subtotal	1,388	142		

New virus cruise ship disembarks and kills two Japanese passengers in hospital

February 20, 2020 11:38

Two Japanese men and women in their 80s who were hospitalized and treated for the virus were killed on the 20th in a cruise ship passenger who was confirmed to be infected with the new coronavirus. This is the first time a cruise ship passenger has died and three people have been killed in the country.

As of the 19th, 621 cruise ships out of approximately 3,700 crew members and passengers on the cruise ship where outbreaks of the new coronavirus were confirmed were confirmed.

According to government officials, two of them, a 87-year-old man and an 84-year-old woman, died on the 20th.

Both were Japanese and had a basic illness and were confirmed to have been infected with the virus, so it was said that men were hospitalized on the 11th of this month and women on the 12th to be treated.

This is the first time a cruise ship passenger has died.

In addition, three people have been killed in Japan, following the death of a woman in her 80s living in Kanagawa Prefecture on the 13th of this month.

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Wednesday, February 19, 2020 10:05 PM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#);

Callahan, Michael V., M.D.; (b) (6)
Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary
(OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris)
(OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Lawler,
James V; Kadlec, Robert (OS/ASPR/IO); 'Martin, Gregory J
(b) (6)'; Borio, Luciana; Hanfling, Dan; McDonald, Eric; Wade,
David; TARANTINO, DAVID A; WILKINSON, THOMAS; David Gruber
(b) (6); KAUSHIK, SANGEETA; Nathaniel Hupert
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

More puzzle pieces.

Italy <https://protect2.fireeye.com/url?k=e5d05247-b9844b3b-e5d06378-0cc47adc5fa2-e16553f827677d60&u=https://www.journalgazette.net/news/world/20200216/quarantine-ends-for-germans-italy-to-fly-citizens-from-ship>

Italy plans to evacuate 35 Italians from the cruise ship

- 25 Italian crew members (including the ship's captain)
- 15 passengers

UK <https://www.telegraph.co.uk/global-health/science-and-disease/coronavirus-news-uk-china-singapore-death-toll-latest/>

UK plans to evacuate British passengers Friday 2/21

78 British passengers on board

4 confirmed COVID the Foreign Office

2 passengers on board say they are infected

Hong Kong

<https://www.japantimes.co.jp/news/2020/02/16/national/science-health/canada-evacuate-passengers-coronavirus-covid19-diamond-princess-cruise-ship/>

There are around 330 Hong Kong residents on board, including 260 holding Special Administrative Region of Hong Kong passports and roughly 70 people with foreign ones.

South Korea

<https://www.japantimes.co.jp/news/2020/02/18/national/science-health/south-korea-evacuate-diamond-princess/>

The South Korean government is sending a presidential plane to Japan on Tuesday afternoon to evacuate several citizens on a coronavirus-stricken cruise ship docked in Yokohama, a government official said Tuesday.

14 South Koreans — nine passengers and five crew members

Canada

<https://www.japantimes.co.jp/news/2020/02/18/national/science-health/canada-diamond-princess-covid19/>

Global Affairs Canada had confirmed that 32 out of 256 Canadians on the ship had tested positive.

Canadian passengers are set to be evacuated from the virus-hit boat soon, passengers will be screened before boarding the evacuation aircraft, and those who exhibit symptoms of COVID-19 will be transferred to the Japanese health care system

Australia <https://www.news.com.au/travel/travel-updates/health-safety/unusual-rescue-flight-ahead-for-australian-evacuees-of-the-diamond-princess/news-story/564e590bec70b71825c897df85d0bc24>

Australia evacuated passengers from the cruise ship today.

- ~180 evacuated
- 15 declined evacuation
- 36 confirmed COVID hospitalized in Japan
- 10 newly confirmed had to stay behind

So there were a total of ~241 Australians aboard the ship; 46 tested + (19%)

The story from Australia sounds familiar (see below).

Australian cruise passengers arrive to Darwin after Diamond Princess virus outbreak ordeal

Feb 20

A rescue mission of Australian cruise ship passengers from Japan has officially landed in Darwin, but the flight wasn't free from drama.

Thousands of people sharing toilets, pools and buffets – is this the petri dish of the sea?

The Qantas coronavirus rescue flight, carrying about 180 citizens and permanent residents on board from Japan, has landed in Australia.

Qantas flight 6032 touched down in Darwin at 8.11am local time, after being slightly delayed from takeoff out of Haneda.

The last-minute drama hit the rescue mission when 10 Australians, who were set to leave the coronavirus-hit Diamond Princess ship and head to the airport, were told they had tested positive to coronavirus and had to stay behind.

About 180 citizens and permanent residents, who have spent the past fortnight on the quarantined cruise ship off the coast of Japan, had [taken up the Federal Government's offer of a seat on the repatriation flight to Australia.](#)

They join another 36 Australians who contracted coronavirus on the *Diamond Princess* and are being treated in Japan. About 15 of their relatives declined the offer of repatriation to stay with them.

The Australians on board will be screened for coronavirus five times before they are taken to a quarantine facility at Howard

Qantas boss Alan Joyce praised the crew who took part in the repatriation flight as well as two previous Qantas chartered flights that [brought Australians home from virus epicentre Wuhan.](#)

“It took literally thousands of hours to plan complex operations like these,” Mr Joyce said at the press conference today.

“The crew were all volunteers and they did us proud.”

Yesterday, Australians who were cleared to finally disembark the *Diamond Princess* were driven by bus to Haneda Airport for the chartered flight home.

They first needed to pass a health check to receive an approval of disembarkation notice by Japanese quarantine officials.

They were then screened several more times before they could board the Qantas 747.

On the plane, they had no contact with Qantas crew, who remained upstairs for the flight. Food for passengers was already waiting for them at their seats when they boarded.

If they passed the latest health check, they would have been given “approval of disembarkation” notices by Japanese quarantine officials, which grant them permission to enter Japan.

From Yokohama Port, where the ship was docked, they boarded buses to Haneda Airport.

Brisbane student [Tehya Pfeffer](#), 18, who has been quarantined on the *Diamond Princess* with her grandmother Cathy, was among them.

“At 10.30am (local time, 12.30pm AEDT) we will start to be screened and given luggage tags and wrist bands,” Ms Pfeffer told [news.com.au](#) yesterday.

“At 5pm we have to have our luggage put outside, and at 6pm we will disembark the ship and go through a makeshift customs. This is where we use our wrist bands.

“And then we will take a bus to the airport and at around 12am Thursday we will fly to Darwin.”

On the evacuation flight, cabin crew would not be making direct contact with evacuees.

Meals were already waiting for passengers at their seats when they boarded, and Qantas staff remained upstairs.

All those returning to Australia on the Qantas flight will spend two weeks in quarantine at the Howard Springs facility, in addition to the two weeks in lockdown they’ve had on the ship.

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Wednesday, February 19, 2020 8:36 PM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6); [Johnson, Robert \(OS/ASPR/BARDA\)](#); [Yeskey, Kevin](#); (b) (6); [w, Gary \(OS/ASPR/BARDA\)](#); [Redd, John \(OS/ASPR/SPPR\)](#); [Hassell, David \(Chris\) \(OS/ASPR/IO\)](#); [Hamel, Joseph \(OS/ASPR/IO\)](#); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Martin, Gregory J](#); (b) (6); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#); (b) (6); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)

Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

South Korea cases are taking off.

S. Korea reports 31 more cases on 2/20; total now at 82

Singapore, Hong Kong, Japan, and South Korea are the new front lines. Matter of time before travel from those areas will raise concerns.

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Wednesday, February 19, 2020 4:45 PM

Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

Was listening to the discussion today. There was a discussion about the shortages of PPE. There was also discussion re NPIs, but I'm not sure that most folks appreciate that the NPIs that have been arrayed as part of the TLC strategy to reduce disease transmission in the community

can be leveraged to create safer compartments or spaces by shunting disease toward the home. By implementing these interventions, one could reduce the likelihood of disease in workplaces (by home isolation and home quarantine-- keeping sick employees at home and keeping employees who are well but potentially infected because someone is sick in their household, at home). Adding in other social distancing measures including social distancing at work, helps to reduce community transmission (adds additional protection to the workplace). The consequence is shunting disease to the home--120 M different compartments in the US, and making the workplace the safe place. That is potentially very important for critical infrastructure. The answer is not PPE for these employees. And why would we expect that employees in these sectors would have any better IPC with the use of PPE than we saw with staff on the Diamond Princess?

Healthcare is a key critical infrastructure. It is different from the other sectors in that it will be attracting patients with COVID like a magnet. It is hard to imagine how one could make healthcare a safe workplace. But it is only hard to imagine how one could do that unless you begin to look a little closer at the different components of the healthcare system and the roles each component might play during this pandemic.

To illustrate this, I took a stab at developing a conops or roadmap to look at the various pieces of the healthcare system. The shunting of disease is really fractal. Just as we can look at shunting disease across a community into one compartment (the home) to make other compartments safer, we can do the same within our healthcare system—shunt disease to the acute care area where COVID patients will be concentrated. What are the strategies to do that?

This conops is notional. It is purposely designed for a severe outbreak with severe disease and assumes that the healthcare system must somehow continue to limp along and continue to care for the background disease we see during normal times (strokes, AMIs, fractures and trauma, appendicitis, other serious infections, CHF, diabetic emergencies, psychotic episodes, preeclampsia, complicated deliveries, end stage renal disease and dialysis, etc.) as well as sustain outpatients with chronic conditions that require monitoring and care to keep them well and out of the ER and out of the hospital.

Sent from [Mail](#) for Windows 10

From: (b) (6)
Sent: Wednesday, February 19, 2020 2:36 PM
To: [Richard Hatchett](#); [Dr. Eva K Lee](#)
Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6); [Johnson, Robert \(OS/ASPR/BARDA\)](#); [Yeskey, Kevin](#); [Disbrow, Gary \(OS/ASPR/BARDA\)](#); [Redd, Johnt\(OS/ASPR/SPPR\)](#); [Hassell, David \(Chris\) \(OS/ASPR/IO\)](#); [Hamel, Joseph \(OS/ASPR/IO\)](#); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); ['Martin, Gregory J \(b\) \(6\)](#); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber \(b\) \(6\)](#); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

Update for South Korea (see attached) 51 cases; 1 child

Colombia confirms first case of Coronavirus - citizen on Japan cruise ship

February 17th, 2020, 09:06 AM

[@Stats Alerts](#)

BREAKING: Colombia confirms first case of Coronavirus Colombia confirms first case of coronavirus: citizen was on a Diamond Princess cruise

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)
Sent: Wednesday, February 19, 2020 10:05 AM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)
Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel](#)
(OS/ASPR/SPPR); [DeBord, Kristin](#) (OS/ASPR/SPPR); [Phillips, Sally](#)
(OS/ASPR/SPPR); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#);
[Lisa Koonin](#); [Wargo Michael](#); [Walters, William](#) (STATE.GOV); [HARVEY,](#)
[MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#);
[Callahan, Michael V., M.D.](#); (b) (6)
[Johnson, Robert](#) (OS/ASPR/BARDA); [Yeskey, Kevin](#); [Disbrow, Gary](#)
(OS/ASPR/BARDA); [Redd, John](#)(OS/ASPR/SPPR); [Hassell, David](#) (Chris)
(OS/ASPR/IO); [Hamel, Joseph](#) (OS/ASPR/IO); [Dean, Charity A@CDPH](#); [Lawler,](#)
[James V](#); [Kadlec, Robert](#) (OS/ASPR/IO); ['Martin, Gregory J](#)
(b) (6)'; [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade,](#)
[David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#)
(b) (6); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

Update on HK (65 cases; no children) and Singapore (84 cases; 49 currently hospitalized/4 in ICU; still only 4 children (2 asymptomatic/2 hospitalized).

Sent from [Mai](#) for Windows 10

From: [Carter Mecher](#)
Sent: Wednesday, February 19, 2020 8:20 AM
To: [Richard Hatchett](#); [Dr. Eva K Lee](#)
Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel](#)
(OS/ASPR/SPPR); [DeBord, Kristin](#) (OS/ASPR/SPPR); [Phillips, Sally](#)
(OS/ASPR/SPPR); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#);
[Lisa Koonin](#); [Wargo Michael](#); [Walters, William](#) (STATE.GOV); [HARVEY,](#)
[MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#);
[Callahan, Michael V., M.D.](#); (b) (6);
[Johnson, Robert](#) (OS/ASPR/BARDA); [Yeskey, Kevin](#); [Disbrow, Gary](#)
(OS/ASPR/BARDA); [Redd, John](#)(OS/ASPR/SPPR); [Hassell, David](#) (Chris)
(OS/ASPR/IO); [Hamel, Joseph](#) (OS/ASPR/IO); [Dean, Charity A@CDPH](#); [Lawler,](#)
[James V](#); [Kadlec, Robert](#) (OS/ASPR/IO); ['Martin, Gregory J](#)
(b) (6)'; [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade,](#)
[David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#)
(b) (6); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

As of yesterday, there are 251 Canadians on board the Diamond Princess, of whom 34 have tested positive.

<https://globalnews.ca/news/6567907/c...hip-canadians/>

Canada walks back expected departure date for evacuees of Japanese cruise ship

By Staff The Canadian Press

Posted February 19, 2020 7:47 am

Updated February 19, 2020 7:49 am

Global Affairs says the departure date for a plane that will carry Canadians home from a coronavirus-stricken cruise ship in Japan is yet to be confirmed. Spokeswoman Barbara Harvey says the departure will be settled once final arrangements are made with the Japanese government and the cruise ship company. A news release from the company operating the Diamond Princess cruise ship says the Canadian flight has been "shifted" to early Friday morning.

Sent from [Mai](#) for Windows 10

From: [Carter Mecher](#)

Sent: Wednesday, February 19, 2020 8:09 AM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6)

[Johnson, Robert \(OS/ASPR/BARDA\)](#); [Yeskey, Kevin](#); [Disbrow, Gary \(OS/ASPR/BARDA\)](#); [Redd, Johnt\(OS/ASPR/SPPR\)](#); [Hassell, David \(Chris \(OS/ASPR/IO\)](#); [Hamel, Joseph \(OS/ASPR/IO\)](#); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); ['Martin, Gregory J](#)

(b) (6)'; [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#)

(b) (6); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)

Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

621 cases on cruise ship (17% of the passengers and crew have been infected).

<https://www.channelnewsasia.com/news...itive-12450498>

79 more people test positive for COVID-19 on Diamond Princess cruise ship
19 Feb 2020 06:21PM
(Updated: 19 Feb 2020 06:30PM)

TOKYO: An additional 79 cases of coronavirus have been discovered aboard the Diamond Princess cruise ship in Japan, the health ministry said Wednesday (Feb 19), bringing the total to 621.

Sent from [Mai](#) for Windows 10

From: [Carter Mecher](#)

Sent: Wednesday, February 19, 2020 6:06 AM

To: [Richard Hatchett](#); [Dr. Eva K Lee](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel](#) (OS/ASPR/SPPR); [DeBord, Kristin](#) (OS/ASPR/SPPR); [Phillips, Sally](#) (OS/ASPR/SPPR); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6); [Johnson, Robert](#) (OS/ASPR/BARDA); [Yeskey, Kevin](#); [Disbrow, Gary](#) (OS/ASPR/BARDA); [Redd, Johnt](#)(OS/ASPR/SPPR); [Hassell, David \(Chris\)](#) (OS/ASPR/IO); [Hamel, Joseph](#) (OS/ASPR/IO); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert](#) (OS/ASPR/IO); ['Martin, Gregory J](#) (b) (6); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#) (b) (6); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

I saw a news story yesterday (WashPost) that testing was completed. So we should know in the next couple of days.

Also saw a story about the 100 or so Americans left behind (44 in hospitals and 61 who declined evacuation).

<https://mainichi.jp/english/articles/20200219/p2g/00m/0in/028000c>

Hard to find data on the status of those still hospitalized in Japan.

James made a very important point yesterday. Although the passengers are elderly (2,666 passengers), the crew members are relatively young (1,045 crew members). James also expected the attack rates to be very high among the crew members (they were housed together in a relatively small space aboard the ship, perfect conditions for explosive disease transmission). So this combined data on passengers (elderly) and crew (young and healthy) will be invaluable in terms of helping understand severity. I would think that Japan also realizes how invaluable this data is. Japan will be in the best position to assess the impact on the crew, since they will know the results of lab screening and hospitalization of all + crew members (as well as the monitoring quarantine of the rest of the crew over the next 14 days). But now that the passengers are being dispersed, it will be important for several nations to share the data on these passengers—it is really our best chance to understand severity (would need collaboration of the US, Canada, Australia, Hong Kong, Japan).

Sent from [Mail](#) for Windows 10

From: [Richard Hatchett](#)

Sent: Wednesday, February 19, 2020 4:47 AM

To: [Dr. Eva K Lee](#); [Carter Mecher](#)

Cc: [Tracey McNamara](#); [Caneva, Duane](#); (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V., M.D.](#); (b) (6); [Johnson, Robert \(OS/ASPR/BARDA\)](#); [Yeskey, Kevin](#); [Disbrow, Gary \(OS/ASPR/BARDA\)](#); [Redd, John \(OS/ASPR/SPPR\)](#); [Hassell, David \(Chris\) \(OS/ASPR/IO\)](#); [Hamel, Joseph \(OS/ASPR/IO\)](#); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); ['Martin, Gregory J \(b\) \(6\)'](#); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber \(b\) \(6\)](#); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)

Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

I understand from contacts at WHO that Japan is testing everyone on the Diamond Princess, so we should have a complete accounting of that closed population (and thus a nice dataset to inform severity estimates).

From: Dr. Eva K Lee (b) (6)
Sent: 19 February 2020 03:54
To: Carter Mecher (b) (6)
Cc: Tracey McNamara (b) (6); Caneva, Duane (b) (6); Richard Hatchett <(b) (6)>; (b) (6) Dodgen, Daniel (OS/ASPR/SPPR) (b) (6); DeBord, Kristin (OS/ASPR/SPPR) (b) (6); Phillips, Sally (OS/ASPR/SPPR) (b) (6); David Marcozzi <(b) (6)>; Hepburn, Matthew J CIV USARMY (USA) (b) (6); Lisa Koonin (b) (6); Wargo Michael (b) (6); Walters, William (STATE.GOV) <(b) (6); HARVEY, MELISSA (b) (6); WOLFE, HERBERT (b) (6); Eastman, Alexander (b) (6); EVANS, MARIEFRED (b) (6); Callahan, Michael V., M.D. (b) (6); Johnson, Robert (OS/ASPR/BARDA) (b) (6); Yeskey, Kevin (b) (6); Disbrow, Gary (OS/ASPR/BARDA) <(b) (6)>; Redd, Johnt(OS/ASPR/SPPR) <(b) (6)>; Hassell, David (Chris) (OS/ASPR/IO) <(b) (6)>; Hamel, Joseph (OS/ASPR/IO) (b) (6); Dean, Charity A@CDPH (b) (6); Lawler, James V <(b) (6)>; Kadlec, Robert (OS/ASPR/IO) (b) (6); 'Martin, Gregory J (b) (6) Borio, Luciana (b) (6); Hanfling, Dan (b) (6); McDonald, Eric (b) (6); Wade, David (b) (6); TARANTINO, DAVID A (b) (6); WILKINSON, THOMAS (b) (6); David Gruber (b) (6); KAUSHIK, SANGEETA (b) (6); Nathaniel Hupert (b) (6)
Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

Just talked to a lab director in Hong Kong U. They tested 3,600 passengers and crews on World Dream in 24 hours, all using the definitive RT-PCR test. The tests were performed in government labs. They disembarked everyone after 3 days (all came back negative). And they are still performing contact tracing and monitoring on all at the moment.

old news:

<https://www.scmp.com/news/hong-kong/health-environment/article/3049714/coronavirus-3600-passengers-and-crew-members>

For surveillance, regional hospitals do an initial screening, then suspected cases are tested by a governmental lab for confirmation.

Schools are still closed for another month.

(b) (6)

mobile: (b) (6)

Sent with [ProtonMail](#) Secure Email.

----- Original Message -----

On Tuesday, February 18, 2020 7:56 PM, Carter Mecher
(b) (6) wrote:

Japan inching toward mitigation

Abe urges people with cold-like symptoms to avoid work, school

Today 06:30 am JST [24 Comments](#)

TOKYO

Prime Minister Shinzo Abe on Tuesday advised people across the country not to go to work or school if they develop cold-like symptoms, as the country grapples with the spread of a new coronavirus originating in China.

Workplaces in the country, known for their long hours, need to encourage people to take days off without hesitation if they do not feel well, Abe said.

"The first thing that I want the people of Japan to keep in mind is to take time off school or work and refrain from leaving the house if they develop cold-like symptoms such as fever," Abe told a meeting of a government task force on the viral outbreak.

Teleworking is an "effective alternative" to help prevent the virus from spreading further, Abe said.

He made the remarks as the government is scrambling to contain the virus that originated in Wuhan, with more people with no obvious link to China getting infected in Japan.

The global outbreak of the disease called COVID-19 has prompted some event organizers in Japan to rethink their plans for hosting mass gatherings.

The number of confirmed cases in Japan has topped 600, including over 500 passengers and crew on the Diamond Princess, a quarantined cruise ship docked at Yokohama near Tokyo with more than 3,000 confined.

The steady rise in infections in various parts of Japan has raised public concern, prompting the health ministry to ask people who develop symptoms such as a temperature of 37.5 C or higher for at least four days to consult local health care centers and go to designated hospitals. The period is set shorter for the elderly, those with underlying conditions and pregnant women.

As Tokyo and other major cities in the country are notorious for packed rush-hour trains, commuters have been encouraged by a government panel of medical experts to go to work earlier or later than usual as the risk of infection is increased in crowds.

On Tuesday, Fujitsu Ltd and Hitachi Ltd said they are expanding teleworking, though Japanese companies overall have been slow to introduce it.

Sent from [Mail](#) for Windows 10

From: [Tracey McNamara](#)

Sent: Tuesday, February 18, 2020 4:38 PM

To: [Dr. Eva K Lee](#); [Caneva, Duane](#)

Cc: [Carter Mecher](#); [Richard Hatchett](#);

[\(b\) \(6\)](#); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V.,M.D.](#);

[\(b\) \(6\)](#) [Johnson, Robert \(OS/ASPR/BARDA\)](#); [Yeskey, Kevin](#); [Disbrow, Gary \(OS/ASPR/BARDA\)](#); [Redd, John \(OS/ASPR/SPPR\)](#); [Hassell, David \(Chris\) \(OS/ASPR/IO\)](#); [Hamel, Joseph \(OS/ASPR/IO\)](#); [Dean, Charity A@CDPH](#); [Lawler, James V](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Martin, Gregory J](#) [\(b\) \(6\)](#); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#) [\(b\) \(6\)](#); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)

Subject: RE: Red Dawn Breaking, COVID-19 Collaborative, Feb 16 start

I must be psychic. This just came out. Like I said – Oxford Nanopore

Sequencers are being sent to
China!

Tracey

[https://protect2.fireeye.com/url?
k=0a860669-56d21f15-
0a863756-0cc47adc5fa2-
4fc7adc96dfbde59&u=https://glo
balbiodefense.com/newswire/ox
ford-nanopore-sequencers-
have-left-uk-for-china-to-
support-rapid-near-sample-
coronavirus-sequencing-for-
outbreak-surveillance/](https://protect2.fireeye.com/url?k=0a860669-56d21f15-0a863756-0cc47adc5fa2-4fc7adc96dfbde59&u=https://globalbiodefense.com/newswire/oxford-nanopore-sequencers-have-left-uk-for-china-to-support-rapid-near-sample-coronavirus-sequencing-for-outbreak-surveillance/)

To: 'Caneva, Duane'

(b) (6); Carter Mecher
(b) (6); Richard Hatchett
(b) (6); Dr. Eva K Lee
(b) (6)

Cc:
(b) (6)
) Dodgen, Daniel
(OS/ASPR/SPPR) <(b) (6);
DeBord, Kristin (OS/ASPR/SPPR)
(b) (6); Phillips, Sally
(OS/ASPR/SPPR) (b) (6);
David Marcozzi
(b) (6); Hepburn,
Matthew J CIV USARMY (USA)
(b) (6); Lisa Koonin
(b) (6); Wargo Michael
(b) (6); Walters,

William (STATE.GOV) (b) (6);
HARVEY, MELISSA
(b) (6); WOLFE,
HERBERT (b) (6);
Eastman, Alexander
(b) (6); EVANS,
MARIEFRED
(b) (6);
Callahan, Michael V., M.D.
(b) (6);
Johnson, Robert (OS/ASPR/BARDA)
(b) (6); Yeskey, Kevin
(b) (6); Disbrow, Gary
(OS/ASPR/BARDA) (b) (6);
Redd, John (OS/ASPR/SPPR)
(b) (6); Hassell, David (Chris)
(OS/ASPR/IO) (b) (6);
Hamel, Joseph (OS/ASPR/IO)
(b) (6); Dean, Charity
A@CDPH <(b) (6)>; Lawler,
James V (b) (6); Kadlec,
Robert (OS/ASPR/IO) (b) (6);
'Martin, Gregory J (b) (6)
(b) (6); Borio, Luciana
(b) (6); Hanfling, Dan
(b) (6); McDonald, Eric
(b) (6); Wade, David
(b) (6); TARANTINO,
DAVID A (b) (6);
WILKINSON, THOMAS
(b) (6); David
Gruber (b) (6)
(b) (6); KAUSHIK,
SANGEETA <(b) (6)>;
Nathaniel Hupert (b) (6)
Subject: RE: Red Dawn Breaking, COVID-19
Collaborative, Feb 16 start

Hello all - Clearly, the most important thing of all is a reliable, real-time diagnostic test that can differentiate between flu and COVID-19. CDCs test kits were recalled because states said they were not working. Now they have to remanufacture the faulty reagent. How long will that take? If and when more kits are available, will they be available in sufficient quantity that all health care providers will have access?

In all of this, I have not heard anyone talk about the Nanopore MinION technology that has been used for Ebola. What gives??? It is field deployable and can be run in-house. Hospital labs can run thousands of samples at once. It gives results of all viruses, bacteria, protozoa, fungi, in 2 hours. We all know this technology is quite promising. Why aren't we going gangbusters to validate this rapid technology and get it to all diagnosticians? If ever there was a time to invest in a diagnostic technology, this is it!

Tracey

From: Dr. Eva K Lee <[REDACTED] (b) (6)>

Sent: Tuesday, February 18, 2020 1:06 PM

To: Caneva, Duane [REDACTED] (b) (6)

Cc: Carter Mecher [REDACTED] (b) (6)>; Richard Hatchett [REDACTED] (b) (6)>; Tracey McNamara [REDACTED] (b) (6);

Dodgen, Daniel (OS/ASPR/SPPR)

[REDACTED] (b) (6)>; DeBord, Kristin (OS/ASPR/SPPR) [REDACTED] (b) (6)>; Phillips, Sally (OS/ASPR/SPPR) <[REDACTED] (b) (6)>; David Marcozzi [REDACTED] (b) (6); Hepburn, Matthew J CIV USARMY (USA)

[REDACTED] (b) (6)>; Lisa Koonin

[REDACTED] (b) (6)>; Wargo Michael

[REDACTED] (b) (6) Walters, William

(STATE.GOV)

[REDACTED] (b) (6)>; HARVEY,

MELISSA

[REDACTED] (b) (6)>; WOLFE,

HERBERT

[REDACTED] (b) (6); Eastman,

Alexander

[REDACTED] (b) (6)>; EVANS,

MARIEFRED

[REDACTED] (b) (6)>;

Callahan, Michael V.,M.D.

<[REDACTED] (b) (6)>;

[REDACTED] (b) (6) Johnson,

Robert (OS/ASPR/BARDA) <

[REDACTED] (b) (6);

Yeskey, Kevin

[REDACTED] (b) (6)>; Disbrow, Gary

(OS/ASPR/BARDA) <

[REDACTED] (b) (6)>; Redd,

Johnt(OS/ASPR/SPPR) <

[REDACTED] (b) (6)>; Hassell,

David (Chris) (OS/ASPR/IO)

[REDACTED] (b) (6)>;

Hamel, Joseph (OS/ASPR/IO)

[REDACTED] (b) (6)>;

Dean, Charity A@CDPH

[REDACTED] (b) (6)>;

Lawler, James V

[REDACTED] (b) (6)du>; Kadlec,

Robert (OS/ASPR/IO)

[REDACTED] (b) (6)v>; 'Martin,

Gregory J (

[REDACTED] (b) (6)

Borio, Luciana

[REDACTED] (b) (6)>; Hanfling, Dan

[REDACTED] (b) (6)>; McDonald, Eric

[REDACTED] (b) (6)>; Wade, David

<

[REDACTED] (b) (6)>; TARANTINO, DAVID A

[REDACTED] (b) (6)>; WILKINSON,

THOMAS

[REDACTED] (b) (6);

David Gruber

[REDACTED] (b) (6)

(b) (6); KAUSHIK, SANGEETA

(b) (6); Nathaniel Hupert

(b) (6)

Subject: RE: Red Dawn Breaking, COVID-19
Collaborative, Feb 16 start

Carter,

Just listened in to our state COVID-19 response effort update. Georgia has no COVID-19 cases yet, and hence they remain in the containment period where they place medium-risk individuals on supervised monitoring of home quarantine, advise them to take temperature daily and report any respiratory symptoms (24/7). Educate them not to show up in ED, or any place without facilitation. To avoid potential disease spread, they are advised to remain at home.

The next stage will be mitigation when a confirmed case is reported. That will initiate the pandemic planning and community-based NPI will be considered. This includes social distancing -- telework, teleclass, etc.

I assume at cities where there are confirmed local COVID-19 cases, the public health leaders have already begun the mitigation phase now and hence are practicing some degree of social distancing and rolling out telework, and various strategies to protect health in the population and to maintain business continuity already. Is that true or they are still waiting to execute their operations?

There are not many tests needed here in Georgia. But rapid robust and reliable testing kits (Tracey's reporting of current bottleneck) remain critical in all communities with positive cases. If we have such means, testing can also be conducted (sampling) on some flu-like cases at strategic selected cities also.

----- Original Message -----

On Tuesday, February 18, 2020 2:20 PM, Dr. Eva K Lee
<(b) (6)> wrote:

Duane, Yes. (asymptomatic or mild symptoms) this is the worry at the very start, and it remains the most critical. Hence even 1% of infection for us -- can balloon out of proportion and we can't handle. Shedding not only during infection period, but also post-recovery. It's a very long timeline that we have to deal with. Then you have all the university students. Students travelled to China and came back to school, they asked health service if they needed to quarantine or take any action, the advice -- no need. Those are missed opportunities. Again, seasonal influenza affects 8-10% Americans, 0.7% of those infected required hospitalization, and mortality is roughly 0.1%. So it is easy to "calculate" all these numbers backwards... So 20% of COVID-19 infected may need hospitalization, mortality is 10-30 times higher than seasonal flu. How much can we tolerate before anyone would spring into action? Keep in mind, some begin to infect rapidly upon contracting the virus, the incubation is so short (and so long) and infectious too during that period (with much being unknown).

Carter, I think you will expect heterogeneous approaches from different communities in the overall response strategy, since it depends on the social setting and the demographics and more importantly the local resources. We have to optimize for sure.

----- Original Message -----

On Tuesday, February 18, 2020 1:51 PM,
Caneva, Duane <(b) (6)>
wrote:

Seems to me a big challenge will be asymptomatic or mild symptoms in kids, spread through the schools, shed to parents who staff both categories acute and non-acute care clinics. If there are several days of asymptomatic shedding, how do you prevent spread to the vulnerable, high risk patients in each category?

Will mild symptoms drive complacent compliance?

From: Carter Mecher
<(b) (6)>

Sent: Tuesday, February 18, 2020
1:32 PM

Subject: RE: Red Dawn
Breaking, COVID-19
Collaborative, Feb 16 start

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.

My thinking is evolving in terms of healthcare system response. Initially I described how I would refocus the outpatient clinics away from COVID care and leverage the NPIs of isolation and quarantine to help keep the workplace safe (for the clinic staff and other patients) rather than a strategy that employs PPE. I would only use the outpatient clinic staff to help with telephone/home care support of those patients under home isolation or home quarantine--to help with compliance/adherence to isolation and quarantine, monitoring their health, and optimizing the care of their other chronic medical conditions (to keep them out of the ER and the hospital). But as I thought more about this, it occurs to me that this can be generalized beyond outpatient clinics.

I would think about dividing our healthcare system into two big pieces: (1) acute care (EDs, acute inpatient care, critical care); and (2) non-acute care including outpatient clinics (PC/Family Practice, pediatrics, OB/GYN, medical specialty, surgical specialty, dental, mental health, rehab, etc.), as well as other inpatient areas (inpatient mental health, substance abuse, nursing homes, hospice care, memory care, assisted living, etc.). Inpatient surgery (and I suppose labor and delivery) is part of acute care, but for this outbreak, it probably best belongs bundled with the other non-acute inpatient

areas. I would anticipate that the tripwire for implementing NPIs (community transmission), will also be the trigger for healthcare systems to dial down or turn off elective admissions (primarily surgical) to free up acute care and ICU/monitored beds. The most effective way to protect these non-acute areas is by shunting potential COVID patients away from these areas and either providing this type of care while the patients is hospitalized in acute care or thru telephone care/home care for patients with mild illness receiving care at home. And the most effective way to shunt these patients away from non-acute care areas is thru the implementation of early and aggressive NPIs of isolation of the ill and home quarantine of household contacts (and not fit testing the world and passing out PPE that we don't have).

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Tuesday, February 18, 2020
11:02 AM

To: [Richard Hatchett](#); [Caneva, Duane](#); [Tracey McNamara](#); [Dr. Eva K Lee](#); (b) (6)

Cc: (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#);

DeBord, Kristin
(OS/ASPR/SPPR); Phillips, Sally
(OS/ASPR/SPPR); David
Marcozzi; Hepburn, Matthew J
CIV USARMY (USA); Lisa
Koonin; Wargo Michael; Walters,
William (STATE.GOV);
HARVEY, MELISSA; WOLFE,
HERBERT; Eastman, Alexander;
EVANS, MARIEFRED; Callahan,
Michael V.,M.D.;

(b) (6)

Johnson,
Robert (OS/ASPR/BARDA);
Yeskey, Kevin; Disbrow, Gary
(OS/ASPR/BARDA); Redd, John
(OS/ASPR/SPPR); Hassell, David
(Chris) (OS/ASPR/IO); Hamel,
Joseph (OS/ASPR/IO); Dean,
Charity A@CDPH; Lawler, James
V; Kadlec, Robert (OS/ASPR/IO);
'Martin, Gregory J

(b) (6);

Borio,
Luciana; Hanfling, Dan;
McDonald, Eric; Wade, David;
TARANTINO, DAVID A;
WILKINSON, THOMAS; David
Gruber

(b) (6);

KAUSHIK, SANGEETA;
Nathaniel Hupert

Subject: RE: Red Dawn
Breaking, COVID-19
Collaborative, Feb 16 start

More puzzle pieces re the cruise
ship outbreak.

- About
2/3rds of
the
passengers

have been tested so far (2,404 out of 3,711).

- 61 Americans opted to remain onboard and not be evacuated.

Japan has completed tests for all passengers and crew aboard the ship as of Monday, but the results for the last batch of tests aren't expected until Wednesday, the day that the quarantine is slated to end. So far, results are back for 2,404 passengers and crew, out of the 3,711 who were on board the ship when the quarantine began on Feb. 5.

Japanese Health Minister Katsunobu Kato said Tuesday that people who have tested negative for the virus would start leaving on Wednesday, but that the process of releasing passengers and crew won't be finished until Friday, according to [the Washington Post](#).

The remaining 61 American passengers on the DP who opted not to join the evacuation will not be allowed to return to the US until March 4, according to the American embassy in Tokyo. The governments of Australia, Hong Kong and Canada have also said they would evacuate passengers.

Elsewhere, Japan confirmed three more cases of the virus. This time, they were confirmed in Wakayama, a prefecture in eastern Japan.

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Tuesday, February 18, 2020
10:50 AM

To: [Richard Hatchett](#); [Caneva, Duane](#); [Tracey McNamara](#); [Dr. Eva K Lee](#); [\(b\) \(6\)](#)

Cc: [\(b\) \(6\)](#); [\(b\) \(6\)](#); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V.,M.D.](#); [\(b\) \(6\)](#); [Johnson, Robert \(OS/ASPR/BARDA\)](#); [Yeskey, Kevin](#); [Disbrow, Gary \(OS/ASPR/BARDA\)](#); [Redd, John \(OS/ASPR/SPPR\)](#); [Hassell, David \(Chris\) \(OS/ASPR/IO\)](#); [Hamel, Joseph \(OS/ASPR/IO\)](#); [Dean, Charity A@CDPH](#); [Lawler, James](#)

[V; Kadlec, Robert \(OS/ASPR/IO\);](#)
[Martin, Gregory J](#)
[\(b\) \(6\); Borio,](#)
[Luciana; Hanfling, Dan;](#)
[McDonald, Eric; Wade, David;](#)
[TARANTINO, DAVID A;](#)
[WILKINSON, THOMAS; David](#)
[Gruber](#)
[\(b\) \(6\)](#)
[KAUSHIK, SANGEETA;](#)
[Nathaniel Hupert](#)

Subject: RE: Red Dawn
Breaking, COVID-19
Collaborative, Feb 16 start

Maybe he was misquoted or it was a typo—perhaps what was meant was 4 per 100 (and that would be a low estimate)

Sent from [Mail](#) for Windows 10

From: [Richard Hatchett](#)

Sent: Tuesday, February 18, 2020
10:45 AM

To: [Carter Mecher; Caneva,](#)
[Duane; Tracey McNamara; Dr.](#)
[Eva K Lee; \(b\) \(6\)](#)

Cc: [\(b\) \(6\); Dodgen,](#)
[Daniel \(OS/ASPR/SPPR\);](#)
[DeBord, Kristin](#)
[\(OS/ASPR/SPPR\); Phillips, Sally](#)
[\(OS/ASPR/SPPR\); David](#)

Marcozzi; Hepburn, Matthew J
CIV USARMY (USA); Lisa
Koonin; Wargo Michael; Walters,
William (STATE.GOV);
HARVEY, MELISSA; WOLFE,
HERBERT; Eastman, Alexander;
EVANS, MARIEFRED; Callahan,
Michael V.,M.D.;

(b) (6)
Johnson,
Robert (OS/ASPR/BARDA);
Yeskey, Kevin; Disbrow, Gary
(OS/ASPR/BARDA); Redd, John
(OS/ASPR/SPPR); Hassell, David
(Chris) (OS/ASPR/IO); Hamel,
Joseph (OS/ASPR/IO); Dean,
Charity A@CDPH; Lawler, James
V; Kadlec, Robert (OS/ASPR/IO);
Martin, Gregory J

(b) (6); Borio,
Luciana; Hanfling, Dan;
McDonald, Eric; Wade, David;
TARANTINO, DAVID A;
WILKINSON, THOMAS; David
Gruber

(b) (6);
KAUSHIK, SANGEETA;
Nathaniel Hupert

Subject: RE: Red Dawn
Breaking, COVID-19
Collaborative, Feb 16 start

Note that 4/100,000 would imply
that only 440 people have been
infected.

From: Carter Mecher
(b) (6) >

Sent: 18 February 2020 15:26

To: Caneva, Duane

[REDACTED] (b) (6)

Tracey McNamara

<[REDACTED] (b) (6)>; Dr.

Eva K Lee (b) (6)

[REDACTED]

Cc: [REDACTED] (b) (6)

[REDACTED] >; Dodgen,

Daniel (OS/ASPR/SPPR)

<[REDACTED] (b) (6)>;

DeBord, Kristin
(OS/ASPR/SPPR)

<[REDACTED] (b) (6)>;

Phillips, Sally (OS/ASPR/SPPR)
[REDACTED] (b) (6)>; David

Marcozzi

[REDACTED] (b) (6)

>; Hepburn, Matthew J CIV
USARMY (USA)

[REDACTED] (b) (6)

>; Lisa Koonin

[REDACTED] (b) (6)>; Wargo

Michael

[REDACTED] (b) (6)

Walters, William
([STATE.GOV](mailto:Walters.William@state.gov))

[REDACTED] (b) (6);

HARVEY, MELISSA

[REDACTED] (b) (6)>;

WOLFE, HERBERT

[REDACTED] (b) (6)

Eastman, Alexander

[REDACTED] (b) (6)>

; EVANS, MARIEFRED

[REDACTED] (b) (6)

Callahan, Michael

V.,M.D.

[REDACTED] (b) (6)

[REDACTED]; Johnson,

Robert (OS/ASPR/BARDA)

[REDACTED] (b) (6)>;

Yeskey, Kevin

(b) (6)

Disbrow, Gary
(OS/ASPR/BARDA)

(b) (6) >; Redd,

John (OS/ASPR/SPPR)

(b) (6) >; Hassell,

David (Chris) (OS/ASPR/IO)

(b) (6);

Hamel, Joseph (OS/ASPR/IO)

(b) (6) >; Dean,

Charity A@CDPH

(b) (6) >;

Richard Hatchett

(b) (6) >;

Lawler, James V

(b) (6);

Kadlec, Robert (OS/ASPR/IO)

(b) (6) >;

Martin, Gregory J

(b) (6)

>; Borio,

Luciana (b) (6) >;

Hanfling, Dan

(b) (6);

McDonald, Eric

(b) (6)

; Wade, David

< (b) (6) >;

TARANTINO, DAVID A

(b) (6) >;

WILKINSON, THOMAS

(b) (6)

David Gruber

(b) (6)

KAUSHIK, SANGEETA

(b) (6) >;

Nathaniel Hupert

(b) (6) >

Subject: RE: Red Dawn
Breaking, COVID-19
Collaborative, Feb 16 start

WHO estimates 80% of patient with COVID-19 have mild disease and recover; that implies that 20% have severe disease. WHO estimated that 14% develop pneumonia and 5% are considered critical. [We were estimating that 12% of cases needed hospitalization (so 88% did not) and 2% needed ICU care (with mortality of patients with pneumonia in the ICU generally between 15%-50% so a CFR of 0,3%-1.0%). Also noet his comment on sparing children. The latter comments are reminiscent of the early comments of public health leaders during the 1918 pandemic—always minimizing. I have no idea where an attack rate of 4 per 100,000 comes from.]

<https://www.channelnewsasia.com/news/world/covid-19-coronavirus-who-china-patients-have-mild-disease-12445010>

GENEVA: The new novel coronavirus only causes mild disease for 80 per cent of infected patients, said the World Health Organization on Monday (Feb 17). Speaking to reporters, WHO chief Tedros Adhanom Ghebreyesus said that 14 per cent of patients would have severe diseases such as pneumonia.

"Around five percent of cases are considered critical with possible multi-organ failure, septic shock and respiratory failure and, in some cases, death," he added.

Tedros also said there were "relatively few cases" among children and more research was needed to understand why.

The WHO chief also warned against "blanket measures" over the novel coronavirus outbreak, pointing out the epidemic outside of China was only affecting a "tiny" proportion of the population.

Ryan said that even at the epicentre of the crisis in the city of Wuhan in central Hubei Province, the "attack rate" - a measure of the speed of spread of the virus - was four per 100,000.

"This is a very serious outbreak and it has the potential to grow, but we need to balance that in terms of the number of people infected. Outside Hubei this epidemic is affecting a very, very tiny, tiny proportion of people," he said.

Tedros also referred to an [apparent decline in new cases](#) of the disease in recent days but said that the trend "must be interpreted very cautiously".

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Tuesday, February 18, 2020
10:15 AM

To: [Caneva, Duane](#); [Tracey
McNamara](#); [Dr. Eva K Lee](#);

(b) (6)

Cc: (b) (6);
(b) (6) >; [Dodgen,
Daniel \(OS/ASPR/SPPR\)](#);
[DeBord, Kristin
\(OS/ASPR/SPPR\)](#); [Phillips, Sally
\(OS/ASPR/SPPR\)](#); [David
Marcozzi](#); [Hepburn, Matthew J
CIV USARMY \(USA\)](#); [Lisa
Koonin](#); [Wargo Michael](#); [Walters,
William \(STATE.GOV\)](#);
[HARVEY, MELISSA](#); [WOLFE,
HERBERT](#); [Eastman, Alexander](#);
[EVANS, MARIEFRED](#); [Callahan,
Michael V.,M.D.](#);

(b) (6);

(b) (6); [Johnson,
Robert \(OS/ASPR/BARDA\)](#);

[Yeskey, Kevin](#); [Disbrow, Gary
\(OS/ASPR/BARDA\)](#); [Redd, John
\(OS/ASPR/SPPR\)](#); [Hassell, David
\(Chris\) \(OS/ASPR/IO\)](#); [Hamel,
Joseph \(OS/ASPR/IO\)](#); [Dean,
Charity A@CDPH](#); [Richard
Hatchett](#); [Lawler, James V](#);
[Kadlec, Robert \(OS/ASPR/IO\)](#);
'[Martin, Gregory J](#)

(b) (6); [Borio,
Luciana](#); [Hanfling, Dan](#);

[McDonald, Eric](#); [Wade, David](#);
[TARANTINO, DAVID A](#);
[WILKINSON, THOMAS](#); [David
Gruber](#)

(b) (6);

[KAUSHIK, SANGEETA](#);
[Nathaniel Hupert](#)

Subject: RE: Red Dawn
Breaking, COVID-19
Collaborative, Feb 16 start

Update on cruise ship, Japan
(implementing NPIs) and South
Korea (evacuating passengers)

<https://www.channelnewsasia.com/news/asia/covid19-japan-virus-testing-complete-quarantine-cruise-ship-12445788>

88 more people test positive for
COVID-19 on Diamond Princess
cruise ship.

The new cases take the total
number of confirmed cases on the
Diamond Princess to 542 - the
biggest cluster outside the
epicentre in China. [Almost 15%
of the crew and passengers have
been infected.]

Japan has also confirmed at least
65 cases domestically, including
many involving people with no
history of recent travel to China.
Authorities have said the virus is
being transmitted locally now, and
have asked citizens to avoid
crowds and non-essential
gatherings. On Monday, the
amateur portion of the Tokyo
Marathon, which had been
expected to attract some 38,000
runners, was cancelled. Only elite
athletes will now be able to take
part. The public celebration for
Emperor Naruhito's birthday has

also been scrapped over virus fears.

South Korea will send a presidential aircraft on Tuesday to fly back four nationals and one Japanese spouse, an official told reporters. There are 14 South Koreans on board in total, but the other ten have declined to be evacuated from the ship because they live in Japan, the Yonhap news agency reported.

Vietnam NPIs

<https://protect2.fireeye.com/url?k=5a2fa482-067bbdfe-5a2f95bd-0cc47adc5fa2-a5b86bc1581cf39c&u=https://saigoneer.com/saigon-health/...ue-to-covid-19>

Due to COVID-19: As of February 15, all 63 provinces and cities in Vietnam have extended their school closing time, 56 of which — including Saigon — have announced that schools will be closed until the end of February. Ho Chi Minh City's People Committee proposing students stay at home until the end of March.

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Tuesday, February 18, 2020
7:10 AM

To: [Caneva, Duane](#); [Tracey
McNamara](#); [Dr. Eva K Lee](#);

(b) (6)

Cc: (b) (6); [Dodgen,
Daniel \(OS/ASPR/SPPR\)](#);
[DeBord, Kristin
\(OS/ASPR/SPPR\)](#); [Phillips, Sally
\(OS/ASPR/SPPR\)](#); [David
Marcozzi](#); [Hepburn, Matthew J
CIV USARMY \(USA\)](#); [Lisa
Koonin](#); [Wargo Michael](#); [Walters,
William \(STATE.GOV\)](#);
[HARVEY, MELISSA](#); [WOLFE,
HERBERT](#); [Eastman, Alexander](#);
[EVANS, MARIEFRED](#); [Callahan,
Michael V.,M.D.](#);

(b) (6)

(b) (6); [Johnson,
Robert \(OS/ASPR/BARDA\)](#);
[Yeskey, Kevin](#); [Disbrow, Gary
\(OS/ASPR/BARDA\)](#); [Redd, John
\(OS/ASPR/SPPR\)](#); [Hassell, David
\(Chris\) \(OS/ASPR/IO\)](#); [Hamel,
Joseph \(OS/ASPR/IO\)](#); [Dean,
Charity A@CDPH](#); [Richard
Hatchett](#); [Lawler, James V](#);
[Kadlec, Robert \(OS/ASPR/IO\)](#);
[Martin, Gregory J](#)

(b) (6)

[Borio,
Luciana](#); [Hanfling, Dan](#);
[McDonald, Eric](#); [Wade, David](#);
[TARANTINO, DAVID A](#);
[WILKINSON, THOMAS](#); [David
Gruber](#)

(b) (6);

[KAUSHIK, SANGEETA](#);
[Nathaniel Hupert](#)

Subject: RE: Red Dawn
Breaking, COVID-19
Collaborative, Feb 16 start

More things to keep an eye on
(attached links of stories and
translations of news reports):

Yesterday a 5th flight of evacuees
from Hubei arrived in Japan.
There were 65 on board and 7
people were symptomatic (11%).
Watch for the number of
confirmed—it will provide a point
estimate of prevalence of COVID-
19 in Hubei as of yesterday.
Sounds like this is the last flight
japan will accept.

Yesterday, Japan provided an
update of all cases in Japan:

- 53 people
were
infected in
Japan and
travelers
from China
- 454
passengers
and crew
members on
cruise ships,
and
- 13 people
returned on

charter
aircraft.

- 520 people
in total.
- 23 people
were
determined
to be
seriously ill

Watching for other countries to
evacuate passengers from cruise
ship

- 256
Canadians
on the
Diamond
Princess
cruise ship
- 32 tested +
(as of Feb-
17)
- A plane
chartered by
the
Canadian
government
has left for
Japan to
evacuate its
nationals
aboard a
virus-hit
cruise ship
off
Yokohama,
TV Asahi
reported on
Tuesday,
citing a

tweet by
Canada's
foreign
minister

Can't find anything about other
countries evacuating passengers
(UK, Hong Kong, Italy, etc.)

Last thing. Am seeing stories
from Japan re patients going from
clinic to clinic with resp
symptoms and fever and being
confirmed. They are finding
nosocomial transmission—so
underscores the concerns outlined
in the proposal I outlined for re-
aligning outpatient clinics.

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Monday, February 17, 2020
10:39 PM

To: [Caneva, Duane](#); [Tracey
McNamara](#); [Dr. Eva K Lee](#);

(b) (6)

Cc: (b) (6)
[Dodgen,
Daniel \(OS/ASPR/SPPR\)](#);
[DeBord, Kristin
\(OS/ASPR/SPPR\)](#); [Phillips, Sally
\(OS/ASPR/SPPR\)](#); [David
Marcozzi](#); [Hepburn, Matthew J
CIV USARMY \(USA\)](#); [Lisa](#)

Koonin; Wargo Michael; Walters, William (STATE.GOV);
HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander;
EVANS, MARIEFRED; Callahan, Michael V.,M.D.;

(b) (6)
; Johnson, Robert (OS/ASPR/BARDA);
Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Richard Hatchett; Lawler, James V;
Kadlec, Robert (OS/ASPR/IO);
'Martin, Gregory J

(b) (6); Borio, Luciana; Hanfling, Dan;
McDonald, Eric; Wade, David;
TARANTINO, DAVID A;
WILKINSON, THOMAS; David Gruber

(b) (6)
KAUSHIK, SANGEETA;
Nathaniel Hupert

Subject: RE: Red Dawn
Breaking, COVID-19
Collaborative, Feb 16 start

I really need help thinking thru the testing piece (screening for COVID-19). How do we protect the staff in outpatient clinics (where all the ILI is typically seen) and conserve PPE by shifting all the mild illness away from clinics and toward patients' homes using telephone care/telehealth and home healthcare and employing home

isolation for those who are infected and voluntary home quarantine for otherwise well (but exposed and potentially infected) household contacts? Having all the suspected patients coming in to clinics to be screened really defeats the purpose. So how would very large numbers of outpatients get screened? Home screening? Drive thru screening? Or creating a free standing screening facility for rapid screening? Has anyone thought this thru (how you screen for disease plus promote adherence/compliance to home isolation and home quarantine and shift outpatient care of patients with mild disease to telephone/home care to protect outpatient clinic staff? Looking for practical solutions.

Just to remind you, here are the estimates of demand (assuming we would need to screen all ILI)—about 88K per day in primary care clinics across the US.

US Data	
US population	325,700,000
Hospital Beds	924,107
ICU Beds	81,790
Hospital Admissions	36,353,946.00
ER Visits	145,600,000
Family Practice/PC Visits	481,963,000
Total Deaths	2,813,503
A Day in the US	
Hospital Admissions	99,600

Inpatient Census (85% occupancy)	785,491
ICU Census (85% occupancy)	69,522
ER Visits	398,904
Family Practice/PC Visits	1,320,447
Deaths	7,708
Current Background of Illness Similar to COVID-19	
2019-20 Flu Season MMWR Week 5 ILI Rate 6.7%	
1.4M hospitalizations annually for pneumonia	
Medicare Average LOS Pneumonia 6 days	
55,672 pneumonia & influenza deaths annually	
Daily Hospital Admissions Pneumonia	3,836
Hospital Census Pneumonia	23,014
Daily ILI cases seen in ERs	26,727
Daily ILI cases seen in FP/PC clinics	88,470
Daily pneumonia & influenza deaths	153

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Monday, February 17, 2020
9:04 PM

To: [Caneva, Duane](#); [Tracey McNamara](#); [Dr. Eva K Lee](#);

(b) (6)

Cc: (b) (6); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally](#)

(OS/ASPR/SPPR); David Marcozzi; Hepburn, Matthew J CIV USARMY (USA); Lisa Koonin; Wargo Michael; Walters, William (STATE.GOV); HARVEY, MELISSA; WOLFE, HERBERT; Eastman, Alexander; EVANS, MARIEFRED; Callahan, Michael V.,M.D.;

(b) (6); Johnson, Robert (OS/ASPR/BARDA); Yeskey, Kevin; Disbrow, Gary (OS/ASPR/BARDA); Redd, John (OS/ASPR/SPPR); Hassell, David (Chris) (OS/ASPR/IO); Hamel, Joseph (OS/ASPR/IO); Dean, Charity A@CDPH; Richard Hatchett; Lawler, James V; Kadlec, Robert (OS/ASPR/IO); Martin, Gregory J

(b) (6); Borio, Luciana; Hanfling, Dan; McDonald, Eric; Wade, David; TARANTINO, DAVID A; WILKINSON, THOMAS; David Gruber

(b) (6); KAUSHIK, SANGEETA; Nathaniel Hupert

Subject: RE: Red Dawn
Breaking, COVID-19
Collaborative, Feb 16 start

I tinkered with the strategy for integrating outpatient clinics and hospitals for the care of COVID-19 patients. Proposing this for my system.

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Monday, February 17, 2020
7:17 PM

To: [Caneva, Duane](#); [Tracey
McNamara](#); [Dr. Eva K Lee](#);

(b) (6)

Cc: (b) (6)

(b) (6) [Dodgen,
Daniel \(OS/ASPR/SPPR\)](#);
[DeBord, Kristin
\(OS/ASPR/SPPR\)](#); [Phillips, Sally
\(OS/ASPR/SPPR\)](#); [David
Marcozzi](#); [Hepburn, Matthew J
CIV USARMY \(USA\)](#); [Lisa
Koonin](#); [Wargo Michael](#); [Walters,
William \(STATE.GOV\)](#);
[HARVEY, MELISSA](#); [WOLFE,
HERBERT](#); [Eastman, Alexander](#);
[EVANS, MARIEFRED](#); [Callahan,
Michael V.,M.D.](#);

(b) (6)

(b) (6) [Johnson,
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[Yeskey, Kevin](#); [Disbrow, Gary
\(OS/ASPR/BARDA\)](#); [Redd, John
\(OS/ASPR/SPPR\)](#); [Hassell, David
\(Chris\) \(OS/ASPR/IO\)](#); [Hamel,
Joseph \(OS/ASPR/IO\)](#); [Dean,
Charity A@CDPH](#); [Richard
Hatchett](#); [Lawler, James V](#);
[Kadlec, Robert \(OS/ASPR/IO\)](#);
[Martin, Gregory J](#)

(b) (6)

(b) (6); [Borio,
Luciana](#); [Hanfling, Dan](#);
[McDonald, Eric](#); [Wade, David](#);
[TARANTINO, DAVID A](#);
[WILKINSON, THOMAS](#); [David
Gruber](#)

(b) (6);

KAUSHIK, SANGEETA;
Nathaniel Hupert

Subject: RE: Red Dawn
Breaking, COVID-19
Collaborative, Feb 16 start

More details on evacuation of
American passengers aboard the
cruise ship.

Total evacuated: $177 + 151 = 328$

<https://www.usatoday.com/story/travel/cruises/2020/02/17/coronavirus-diamond-princess-evacuees-test-positive-allowed-fly-united-states/4783787002/>

Fourteen evacuees from the Diamond Princess cruise ship quarantined in Japan were allowed to fly back to the United States Sunday despite testing positive for coronavirus, the U.S. State Department and Health and Human Services said in a joint statement. The evacuees were not symptomatic.

"These individuals were moved in the most expeditious and safe manner to a specialized containment area on the evacuation aircraft to isolate them in accordance with standard protocols," the statement, published Sunday, read.

The State Department was unaware the individuals had coronavirus when they were being removed from the ship; they had tested negative just a few days before, Robert Kadlec, the assistant secretary for preparedness and response at the U.S. Department of Health & Human Services, said on a phone call with reporters.

"If those results had come back four hours earlier before we'd started to disembark the ship and before these people were evacuees within an evacuation system, then it would've been a different discussion." Dr. William Walters, director of operational medicine at the U.S. Department of State, said on the call.

Kadlec said that individuals received multiple screenings when moving from ship to bus to plane and a more extensive medical assessment upon arrival.

Two charter flights carrying the Diamond Princess passengers landed at military bases in California and Texas overnight, starting the clock on a 14-day quarantine period to ensure those passengers don't have [coronavirus](#). In total, approximately 380 Americans were on board the Diamond Princess ship for the duration of the cruise and quarantine at sea.

'Something went awry': [Why did US break Diamond Princess coronavirus quarantine?](#)

One plane carrying American passengers touched down at Travis Air Force Base in northern California just before 11:30 p.m. Sunday local time. A second flight arrived at Lackland Air Force Base in Texas around 2½ hours later, early Monday.

The California flight had 177 people on it, seven of whom tested positive for coronavirus, Walters said. An additional three people were isolated during the flight for fever. Upon arrival, 171 stayed in Travis while six traveled to Omaha.

It's unclear which passengers were transferred there and whether initial tests were positive or whether they were at risk for the virus.

The Texas flight had 151 people board and included the other seven who tested positive for coronavirus. Two additional passengers were isolated on account of fever. All passengers who tested positive for coronavirus then moved on to Omaha.

The aircraft design allowed passengers to sit in isolation thanks to a plastic divider at the tail of the aircraft.

13 high-risk passengers await test results at Nebraska Medical Center

Officials from the University of Nebraska Medical Center and Nebraska Medicine confirmed that they are assessing 13 adults at their quarantine and biocontainment facility in Omaha.

“Late last night at about 2 or 3 a.m., we were asked to bring some individuals here who had either tested positive or had a high likelihood of testing positive because of symptoms they were exhibiting,” said Dr. Chris Kratochvil, the executive director at the University of Nebraska Medical Center’s Global Center for Health Security.

Twelve of them are housed in the quarantine center while one man was transferred to the hospital’s biocontainment unit for testing and observation because of symptoms including cough, fever, shortness of breath, lightheadedness and an undisclosed chronic condition that would make him particularly vulnerable to the COVID-19 virus.

"He is doing good and in stable condition at this time," reported Shelly Schwedhelm, Nebraska Medicine’s executive director of emergency management and biopreparedness.

She went on to note that “the folks in the quarantine center have all been tested, and we’re waiting for those results.”

She added that the other 12 are isolated in “very nice rooms with WiFi, TV and a small refrigerator

– a lot of the amenities at hotels but with engineering controls” to prevent contaminated air from escaping.

Their test results, which are due back Monday afternoon, will determine whether the patients will be allowed to see their spouses or leave their rooms.

Regardless of whether they test positive or negative, all of the new arrivals will spend at least 14 days in the facility, and any who test positive will likely stay longer, said Dr. Mike Wadman, the co-medical director of the National Quarantine Unit.

Kratochvil says it’s possible that they may be asked to take more patients should more of the Diamond Princess passengers now in quarantine at the airbases test positive.

Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases at the National Institutes of Health, told the USA TODAY editorial board and reporters Monday that the original idea to keep people safely quarantined on the ship wasn't unreasonable. But even with the quarantine process on the ship, virus transmission still occurred.

"The [quarantine process failed](#)," Fauci said. "I'd like to sugarcoat it and try to be diplomatic about it, but it failed. People were getting infected on that ship. Something went awry in the process of the quarantining on that ship. I don't

know what it was, but a lot of people got infected on that ship."

USA TODAY reached out to Princess Cruises for clarification on how many Americans from the ship have the virus.

Sent from [Mail](#) for Windows 10

From: [Caneva, Duane](#)

Sent: Monday, February 17, 2020
4:51 PM

To: [Carter Mecher](#); [Tracey McNamara](#); [Dr. Eva K Lee](#);
(b) (6)

Cc: (b) (6)
(b) (6) [Dodgen, Daniel \(OS/ASPR/SPPR\)](#);
[DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#);
[HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V.,M.D.](#);
(b) (6)
(b) (6) [Johnson, Robert \(OS/ASPR/BARDA\)](#);
[Yeskey, Kevin](#); [Disbrow, Gary \(OS/ASPR/BARDA\)](#); [Redd, John \(OS/ASPR/SPPR\)](#); [Hassell, David \(Chris\) \(OS/ASPR/IO\)](#); [Hamel,](#)

Joseph (OS/ASPR/IO); Dean,
Charity A@CDPH; Richard
Hatchett; Lawler, James V;
Kadlec, Robert (OS/ASPR/IO);
Martin, Gregory J
(b) (6); Borio,
Luciana; Hanfling, Dan;
McDonald, Eric; Wade, David;
TARANTINO, DAVID A;
WILKINSON, THOMAS; David
Gruber
(b) (6);
KAUSHIK, SANGEETA;
Nathaniel Hupert

Subject: Re: Red Dawn Breaking,
COVID-19 Collaborative, Feb 16
start

+ Bob Glass

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From: Carter Mecher
<(b) (6)>
Sent: Monday, February 17, 2020
4:47:38 PM
To: Tracey McNamara
<(b) (6)>; Dr.
Eva K Lee (b) (6)
>
Cc: (b) (6)
>; Caneva,
Duane
(b) (6);
Dodgen, Daniel (OS/ASPR/SPPR)
<(b) (6)>;
DeBord, Kristin
(OS/ASPR/SPPR)

< (b) (6) >;
Phillips, Sally (OS/ASPR/SPPR)
(b) (6) >; David
Marcozzi
(b) (6)
>; Hepburn, Matthew J CIV
USARMY (USA)
(b) (6)
>; Lisa Koonin
(b) (6) Wargo
Michael
(b) (6)
>; Walters, William
(STATE.GOV)
(b) (6) >;
HARVEY, MELISSA
(b) (6);
WOLFE, HERBERT
(b) (6)
Eastman, Alexander
(b) (6) >
>; EVANS, MARIEFRED
(b) (6)
>; Callahan, Michael
V.,M.D.
(b) (6)
>;
Johnson, Robert
(OS/ASPR/BARDA)
(b) (6) >;
Yeskey, Kevin
(b) (6) >;
Disbrow, Gary
(OS/ASPR/BARDA)
(b) (6) >; Redd,
John (OS/ASPR/SPPR)
(b) (6) Hassell,
David (Chris) (OS/ASPR/IO)
(b) (6)
Hamel, Joseph (OS/ASPR/IO)
(b) (6) >; Dean,
Charity A@CDPH
(b) (6)

Richard Hatchett
(b) (6) >;
Lawler, James V
(b) (6) >;
Kadlec, Robert (OS/ASPR/IO)
(b) (6);
'Martin, Gregory J
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>; Borio,
Luciana (b) (6);
Hanfling, Dan
(b) (6) >;
McDonald, Eric
(b) (6)
>; Wade, David
(b) (6)
TARANTINO, DAVID A
(b) (6) >;
WILKINSON, THOMAS
(b) (6)
David Gruber
(b) (6)
>;
KAUSHIK, SANGEETA
(b) (6) >;
Nathaniel Hupert
(b) (6).
Subject: RE: Red Dawn
Breaking, COVID-19
Collaborative, Feb 16 start

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.

A correction. Should not have included breakdown of hospitalized since we have spotty data 9or could have used a range). Only solid data we have is number

confirmed (58), number in hospital (44), and number in ICU (≥ 1). Mix of hospital patients is unknown (from the Singapore data the ratio of hospitalized to ICU has ranged from 6:1 to 13:1 from two data points).

So estimates of severity looking only at the American passengers:

~400 total American passengers

58 confirmed to have COVID-19

12 Asymptomatic
(20%)

46 Symptomatic (80%)
(44 cases actually hospitalized)

~2% of total cases requiring ICU admission (1 case)

Expected mortality for patients with pneumonia admitted to ICU (15-50%); assuming 2% of those who become infected with COVID-19 require ICU care, these mortality rates equate to a CFR of 0.3%-1.0%

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Monday, February 17, 2020
4:15 PM

To: [Tracey McNamara](#); [Dr. Eva K Lee](#)

Cc: (b) (6);
(b) (6) [Caneva, Duane](#); [Dodgen, Daniel](#) (OS/ASPR/SPPR); [DeBord, Kristin](#) (OS/ASPR/SPPR); [Phillips, Sally](#) (OS/ASPR/SPPR); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William](#) (STATE.GOV); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V.,M.D.](#);

(b) (6);
(b) (6) [Johnson, Robert](#) (OS/ASPR/BARDA); [Yeskey, Kevin](#); [Disbrow, Gary](#) (OS/ASPR/BARDA); [Redd, John](#) (OS/ASPR/SPPR); [Hassell, David](#) (Chris) (OS/ASPR/IO); [Hamel, Joseph](#) (OS/ASPR/IO); [Dean, Charity A@CDPH](#); [Richard Hatchett](#); [Lawler, James V](#); [Kadlec, Robert](#) (OS/ASPR/IO); [Martin, Gregory J](#)

(b) (6); [Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#)

(b) (6); [KAUSHIK, SANGEETA](#); [Nathaniel Hupert](#)

Subject: RE: Red Dawn
Breaking, COVID-19
Collaborative, Feb 16 start

Latest data from Singapore (77 cases; 4 children, 2 are asymptomatic) and Hong Kong (60 cases; no children)

More puzzle pieces.

Singapore status:
<https://protect2.fireeye.com/url?k=f6750fe4-aa211698-f6753edb-0cc47adc5fa2-76d29cc40fd8c03f&u=https://www.moh.gov.sg/news-highligh...tion-confirmed>

Update on condition of confirmed cases

To date, a total of 24 cases have fully recovered from the infection and have been discharged from hospital. Of the 53 confirmed cases who are still in hospital, most are stable or improving. Four are in critical condition in the intensive care unit.

[Ratio of hospitalized to ICU of 53/4 or ~ 13:1] Consistent with estimates in earlier email. [On Feb-12 Singapore reported that 8 patients were in ICU.]

Sent from [Mail](#) for Windows 10

From: [Carter Mecher](#)

Sent: Monday, February 17, 2020
2:57 PM

To: [Tracey McNamara](#); [Dr. Eva K Lee](#)

Cc: [Caneva, Duane](#); [Dodgen, Daniel \(OS/ASPR/SPPR\)](#); [DeBord, Kristin \(OS/ASPR/SPPR\)](#); [Phillips, Sally \(OS/ASPR/SPPR\)](#); [David Marcozzi](#); [Hepburn, Matthew J CIV USARMY \(USA\)](#); [Lisa Koonin](#); [Wargo Michael](#); [Walters, William \(STATE.GOV\)](#); [HARVEY, MELISSA](#); [WOLFE, HERBERT](#); [Eastman, Alexander](#); [EVANS, MARIEFRED](#); [Callahan, Michael V.,M.D.](#);

(b) (6)

[Johnson, Robert \(OS/ASPR/BARDA\)](#); [Yeskey, Kevin](#); [Disbrow, Gary \(OS/ASPR/BARDA\)](#); [Redd, John \(OS/ASPR/SPPR\)](#); [Hassell, David \(Chris\) \(OS/ASPR/IO\)](#); [Hamel, Joseph \(OS/ASPR/IO\)](#); [Dean, Charity A@CDPH](#); [Richard Hatchett](#); [Lawler, James V](#); [Kadlec, Robert \(OS/ASPR/IO\)](#); [Martin, Gregory J](#)

(b) (6)

[Borio, Luciana](#); [Hanfling, Dan](#); [McDonald, Eric](#); [Wade, David](#); [TARANTINO, DAVID A](#); [WILKINSON, THOMAS](#); [David Gruber](#)

(b) (6);

KAUSHIK, SANGEETA;

Nathaniel Hupert;

(b) (6)

Subject: RE: Red Dawn
Breaking, COVID-19
Collaborative, Feb 16 start

Trying to estimate severity by
bringing a number of pieces
together.

The Diamond Princess Cruise
Ship had a crew of 1,745 and
2,666 passengers (total pf 3,711)
Approximately 400 of the
passengers are Americans (11%).
Several days ago (Feb-13) we
attempted to estimate disease
severity using the current data
being reported by the media
(number of confirmed cases and
ICU cases) as well as data on the
outbreak in Singapore (number of
confirmed cases, number
hospitalized, and number in ICU)
(see attached Word file).

Given the additional information
becoming available (including
more specific information being
reported by the media on the
numbers of Americans infected), I
was interested in an updated crude
estimate of severity (and to see
how well the early predictions of
severity matched with what was
being reported by the media on
illness in the Americans. See

latest re the cruise ship outbreak below (two stories). We can glean from these stories that the number infected is now up to 454. And 14 positive passengers were included among the Americans who were evacuated to the US. Canada, South Korea, Italy and Hong Kong announced Sunday that they would also arrange charter flights to evacuate their citizens. A few additional pieces of data. News reports yesterday stated that 73 of the 355 confirmed cases from the cruise ship were asymptomatic (20%). Also, yesterday the media quoted Dr. Fauci that the total number of Americans who were confirmed to have COVID yesterday and who remained at hospitals in Japan at 44.

Assuming that this number does not include the 14 confirmed cases that were evacuated, suggests that the total number of Americans with confirmed COVID is 58. An earlier news report from Feb-12 re a couple from California, noted the husband was in the ICU in Japan (so at least 1 American in the ICU). [“...remained in a hospital intensive care unit and has been able to communicate with his family, his wife said in a phone interview from the ship, where she remained in quarantine.”

<https://protect2.fireeye.com/url?k=5b014cc3-075555bf-5b017dfc-0cc47adc5fa2-5be62cf1a816fc6d&u=https://web.archive.org/web/20200212093725/https://www.oeregister.com/2020/02/11/southern-california-man-on-cruise-sent-to-a-hospital-in-tokyo->

[with-a-high-fever-tested-for-coronavirus/ \]](#)

So, piecing all the data together:

The ~400 Americans account for 11% of the 3,711 passengers and crew of the Diamond Princess.

The 58 confirmed cases among Americans account for 12% of the 454 total confirmed COVID cases

Assuming that proportion of asymptomatic cases in Americans is similar to the proportion of asymptomatic cases for the entire ship (73/355 or 20%), we would estimate the number of Americans with asymptomatic infection at ~12. Symptomatics would be 46.

If 2% of cases result in ICU admission (based on earlier estimates on Feb-12 where 4 ICU cases were reported with 203 total confirmed cases), we would expect ~9 ICU cases overall with 454 infected. Media reports from today note 19 of the passengers are “seriously ill, with some of whom treated in intensive care units.” (Would be helpful to quantify “some”—from the earlier data, we would estimate about half that number would require ICU care at some point). For the 54 Americans confirmed to have COVID, we would estimate 1 would require ICU care if 2% of cases required ICU care (we are already aware of at least 1 American who was receiving ICU care in Japan).

So estimates of severity looking only at the American passengers:

~400 total American passengers

58 confirmed to have COVID-19

12 Asymptomatic
(20%)

46 Symptomatic (80%)

~55% of total cases mildly ill (hospitalized for isolation only) (31 cases)

~25% of total cases acutely ill requiring inpatient care (15 cases)

~2% of total cases requiring ICU admission (1 cases)

Expected mortality for patients with pneumonia admitted to ICU (15-50%); assuming

2%
of
those
who
become
infected
with
COVID-19
require
ICU
care,
these
mortality
rates
equate to
a
CFR
of
0.3%-
1.0%
%

Those estimates fit pretty well with the estimates from Feb-13. To firm up these numbers it would be useful to have actual numbers from Japan on ICU admissions, number requiring mechanical ventilation, number in the hospital because they are acutely ill, and number in the hospital because of isolation only (mildly ill or asymptomatic). Also would be helpful to have more granular

information on the Americans (hospital data in Japan including number acutely ill, number needing ICU admission, and number only in the hospital for isolation). Would also be critical to gather/compile the same information from Canada, South Korea, Italy, Hong Kong, and other nations as they also evacuate their citizens. The cruise ship is a circumscribed population where it is possible to get a handle on severity fairly early in an epidemic. The limitation though, is the population on board that ship is elderly (so need to be careful about generalizing to the entire population). But it is the best data we have.

The reason why this is so important is decisions re the implementation of NPIs depend upon severity (the more severe the more intense the NPIs). The sooner we have a more accurate assessment of severity, the better for making plans for NPIs.

Story #1

<https://protect2.fireeye.com/url?k=fb4e1b73-a71a020f-fb4e2a4c-0cc47adc5fa2-6b70ca76908c81a4&u=https://www3.nhk.or.jp/news/html/20200217>