

2019 Novel Coronavirus (COVID-19)

Overview and Update

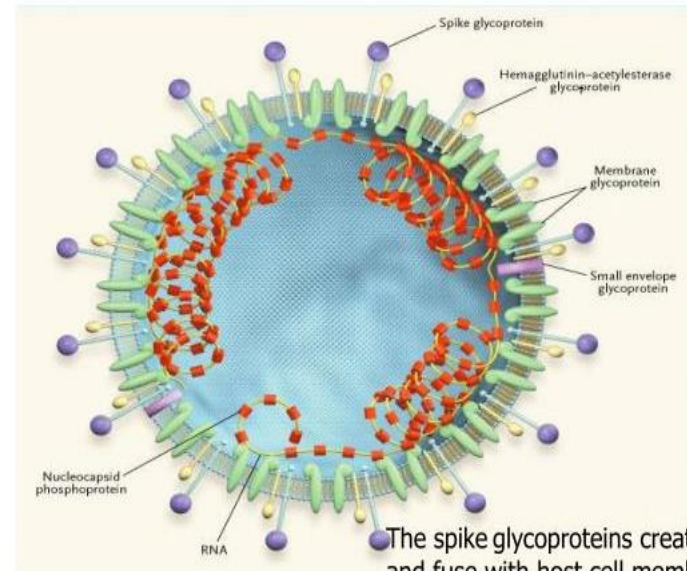
**Dr. Anne Zink, Chief Medical Officer
Alaska Department of Health and Social Services**

Feb. 13, 2020



Coronaviruses (general)

- An enveloped RNA virus that may circulate in animal host or human host
- There are 7 coronaviruses that infect people
- People around the world commonly get infected with these four human coronaviruses:
 - 229E, NL63, OC43, and HKU1.
 - These account for 10-30% of common colds every year
- Spread by contact with infected secretions or by aerosol droplets

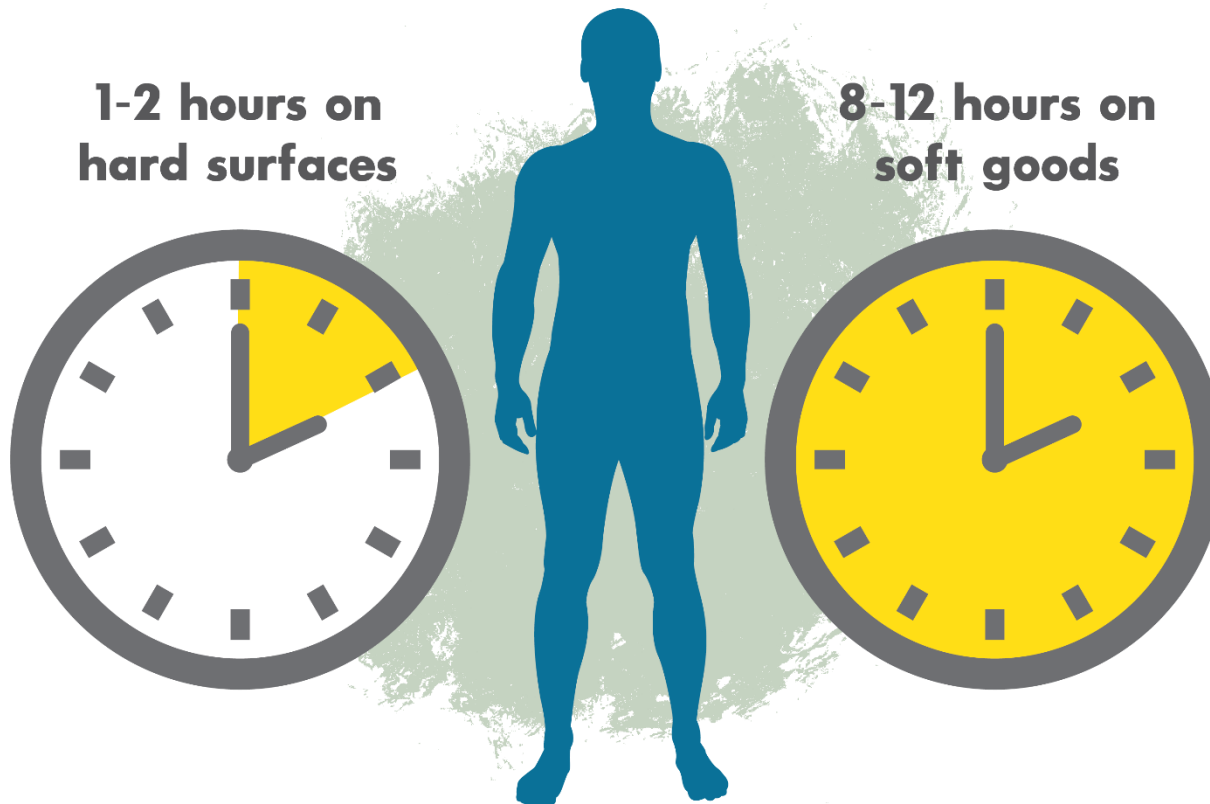


The spike glycoproteins create corona, bind and fuse with host cell membranes
Holmes, NEJM 2003;348: 1948

Coronaviruses (general)

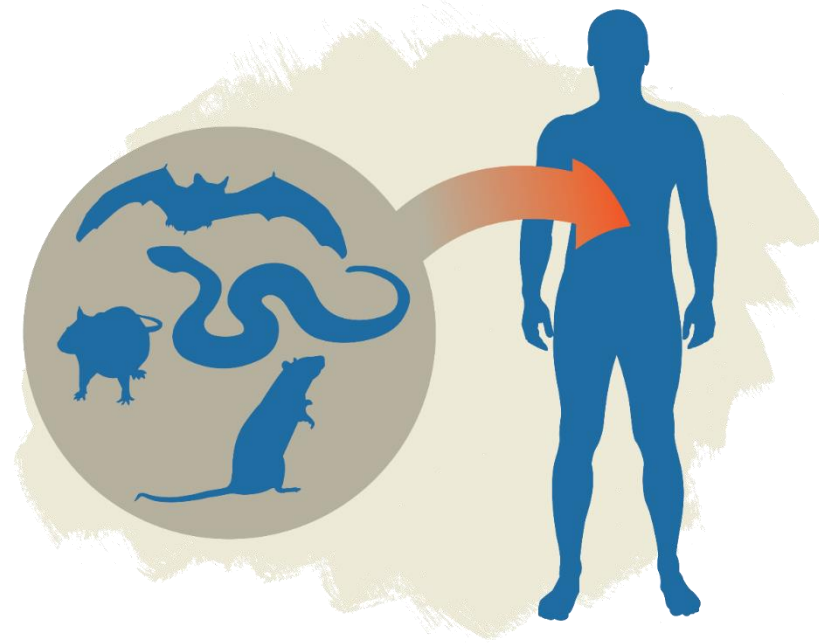
Survivability outside the body:

- 1-2 hours on nonporous surfaces (e.g. hard surfaces)
- 8-12 hours on porous surfaces (e.g. soft goods)



New Coronaviruses

- Sometimes coronaviruses that infect animals can evolve and jump from an animal reservoir to humans, causing illness and then are identified as a “new human coronavirus.”
- We know of three recent times coronaviruses have moved from an animal to a human host
 - SARS (Severe Acute Respiratory Syndrome)
 - MERS (Middle Eastern Respiratory Syndrome)
 - **The name of this virus is COVID-19. Previously 2019-nCoV.**

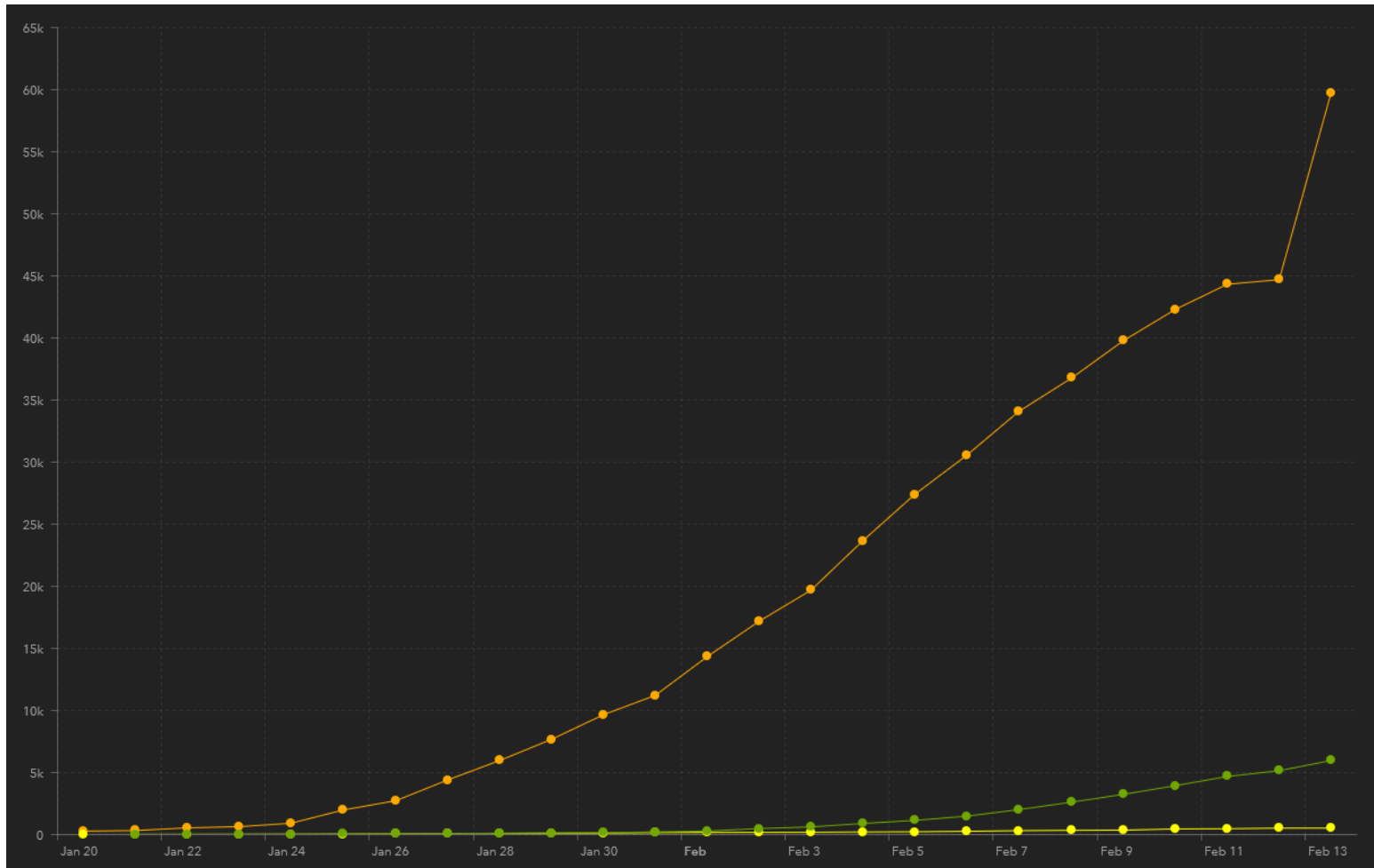


2019-nCoV

- First reported by Chinese health officials on December 31, 2019
- Likely very recently moved from an animal reservoir to humans
- Asymptomatic shedding is still unclear
- Incubation is between 2-14 days (mean is about 5 days)
- As of 1/13/20 there are 60,360 cases worldwide and 1,370 deaths (WHO)
- As of 1/13/20 - 15 confirmed cases in the United States in 7 states
- No deaths in the United States, but one US citizen died Wuhan City, China

Graph of nCoV cases to date

Coronavirus COVID-19 Global Cases by Johns Hopkins CSSE



Case Fatality



2%

- SARS had a case fatality rate (CFR) of ~10%
- MERS has a ~35% mortality rate and continues to circulate in animal reservoirs with sporadic zoonotic spillover
- Influenza H7N9 (bird flu) had about a 40% fatality
- Influenza averages <0.1% mortality
- H1N1 has a case fatality of ~0.03% fatality
- Ebola has roughly 60% fatality rate
- 2019-nCoV is estimated to have about a 2% mortality rate

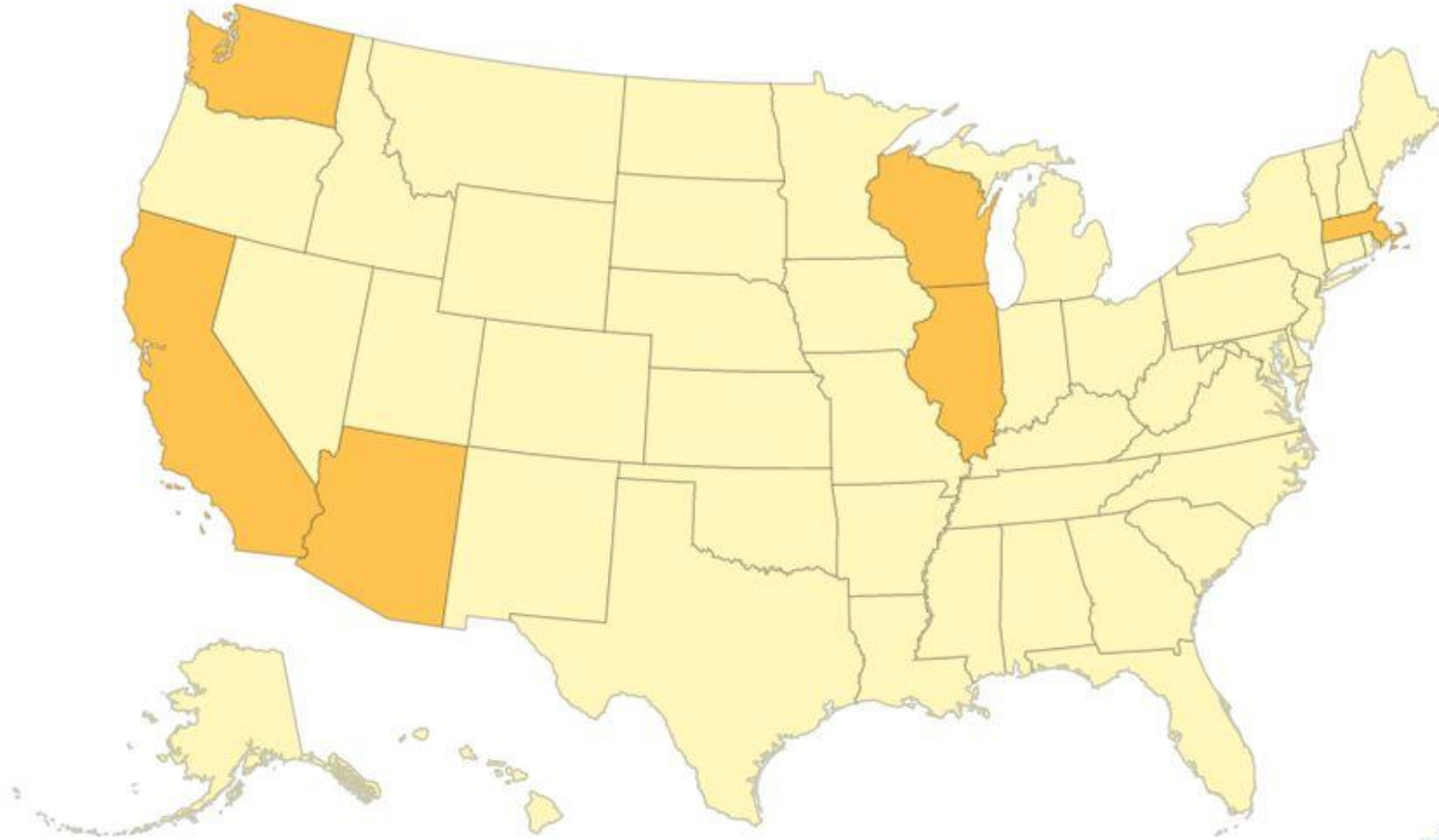
Transmission

- Early on, suspected animal-to-person spread
- Now, also known to be person-to-person spread
 - Respiratory droplets when an infected person coughs or sneezes
 - Close contact (about 6 feet)
 - Unclear if transmitted through touching a surface or object
- It is unclear how easily or sustainably this virus is spreading between people
- 2019-nCoV has an R naught of about 2.5 (this means each infected person will transmit the virus to about 2.5 other people)
- Measles: >12
- SARS: ~3
- 1918 flu: ~2
- 2009 H1H1: ~1.5
- Seasonal Flu: ~1.2



2019-nCoV in the U.S.

Map from February 13th, 2020



Signs and Symptoms

- May look similar to the common cold or flu
- For confirmed 2019-nCoV infections, reported illnesses have ranged from people with little to no symptoms to people being severely ill and dying
- Fever
- Cough
- Shortness of breath
- Myalgia / fatigue
- Appears to disproportionately affect the elderly or those with underlying medical conditions



FEVER



COUGH



**SHORTNESS
OF BREATH**

Comparing to the flu

2017-2018 Flu Season: Burden and Burden Averted by Vaccination

During the 2017-2018 season, CDC estimates flu caused:

45
million
flu illnesses

810,000
flu hospitalizations

61,000
flu deaths

This severe season could have been worse without flu vaccines.

Approximately 40% of the U.S. population chose to get a flu vaccine during the 2017-2018 flu season, and this prevented an estimated:

6.2
million
flu illnesses



More than twice the number of registered nurses in the U.S.

91,000
hospitalizations



About the number of people who can fit in the Rose Bowl stadium in Pasadena, CA

5,700
deaths



More than the number of children born in the U.S. every 12 hours

Imagine the impact if more Americans chose to get a flu vaccine. Many more flu illnesses, flu hospitalizations and flu deaths could be prevented.

The estimated for the 2017-2018 influenza season are preliminary pending additional data from the season.

<https://www.cdc.gov/flu/about/burden-averted/2017-2018.htm>



get vaccinated
www.cdc.gov/flu

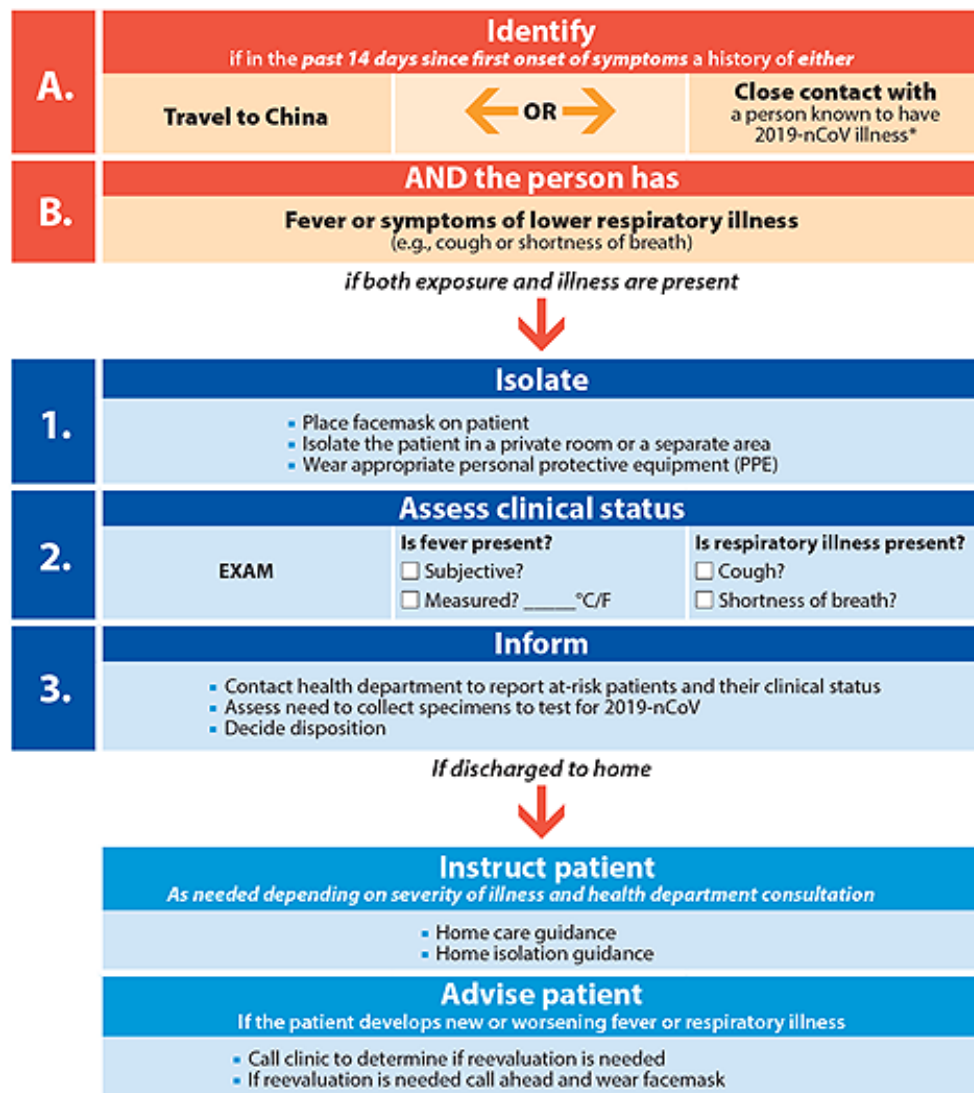
November 2019

Testing and Treatment

- CDC has developed a real time Reverse Transcription-Polymerase Chain Reaction (rRT-PCR) test that can diagnose 2019-nCoV in respiratory and serum samples from clinical specimens.
- On January 24, 2020, CDC publicly posted the assay protocol for this test. Currently, testing for this virus must take place at CDC.
- Currently testing can only be done at the CDC but on 1/5/2020 the CDC announced they will start to roll out testing to individual states
- Alaska Labs has been in communication with the CDC to gear up for testing. At the earliest, Alaska could start testing by March.
- There is no known treatment except for good supportive care.
- A vaccine or treatment is likely not going to be available in the near future.

CDC Evaluation Flowchart

For the evaluation of patients who may be ill with or who may have been exposed to the 2019 Novel Coronavirus (2019-nCoV)



*Documentation of laboratory-confirmation of 2019 n-CoV may not be possible for travelers or persons caring for patients in other countries. For more clarification on the definition for close contact see CDC's Interim Guidance for Healthcare Professionals: www.cdc.gov/coronavirus/2019-nCoV/hcp0/clinical-criteria.html

PUI (Persons Under Investigation)

- Alaska currently has no PUI cases.

Criteria to Guide Evaluation of Patients Under Investigation (PUI) for 2019-nCoV

Patients in the United States who meet the following criteria should be evaluated as a PUI for 2019-nCoV.

Clinical Features	&	Epidemiologic Risk
Fever ¹ or signs/symptoms of lower respiratory illness (e.g. cough or shortness of breath)	AND	Any person, including health care workers, who has had close contact ² with a laboratory-confirmed ^{3,4} 2019-nCoV patient within 14 days of symptom onset
Fever ¹ and signs/symptoms of a lower respiratory illness (e.g., cough or shortness of breath)	AND	A history of travel from Hubei Province , China within 14 days of symptom onset
Fever ¹ and signs/symptoms of a lower respiratory illness (e.g., cough or shortness of breath) requiring hospitalization ⁴	AND	A history of travel from mainland China within 14 days of symptom onset

The criteria are intended to serve as guidance for evaluation. Patients should be evaluated and discussed with public health departments on a case-by-case basis if their clinical presentation or exposure history is equivocal (e.g., uncertain travel or exposure).

Notes on travel

- Jan 1, 2020 Huanan Seafood Wholesale Market was closed
- Jan 23, 2020 Wuhan City shuts down public transportation
- Jan 31, 2020 Presidential Proclamation suspends entry into the United States to foreign nationals who visited Mainland China in the past 14 days. Exempted persons include immediate family members of U.S. citizens, legal permanent residents and crew members of air travel

Isolation vs Quarantine

- Isolation and quarantine help protect the public by preventing exposure to people who have or may have a contagious disease.
- **Isolation** separates sick people with a contagious disease from people who are not sick.
- **Quarantine** separates and restricts the movement of people who were exposed to a contagious disease to see if they become sick.
- In addition to serving as medical functions, isolation and quarantine also are “police power” functions, derived from the right of the state to take action affecting individuals for the benefit of society.

Prevention

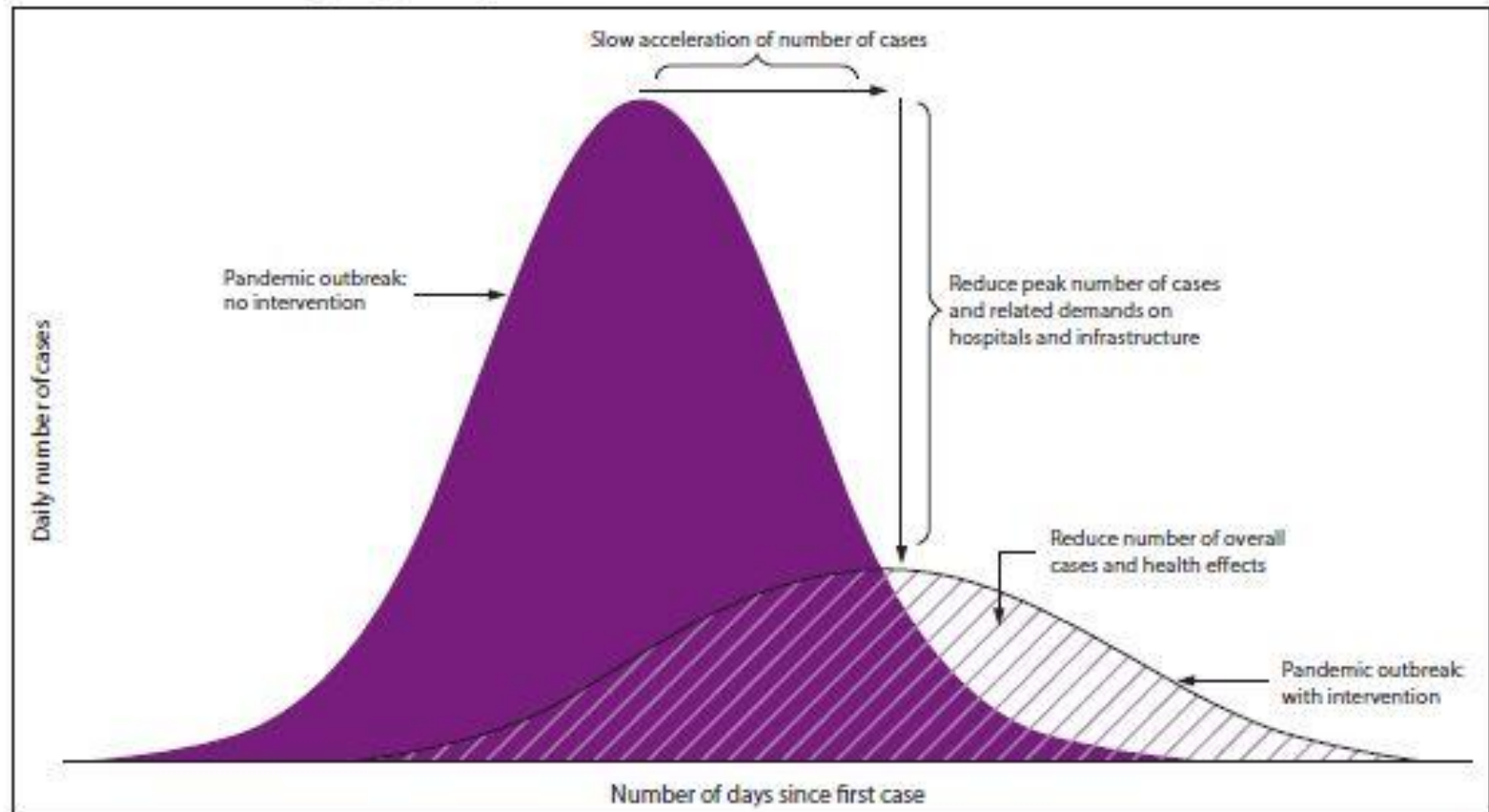
There is currently no vaccine to prevent 2019-nCoV infection. The best way to prevent infection is to avoid being exposed to this virus.

CDC always recommends everyday preventive actions to help prevent the spread of respiratory viruses, including:

- Avoid touching your eyes, nose, and mouth with unwashed hands.
- Avoid close contact with people who are sick.
- Stay home when you are sick.
- Cover your cough or sneeze with a tissue, then throw the tissue in the trash.
- Clean and disinfect frequently touched objects and surfaces using a regular household cleaning spray or wipe.
- Wash your hands often with soap and water for at least 20 seconds, especially after going to the bathroom; before eating; and after blowing your nose, coughing, or sneezing.
- If soap and water are not readily available, use an alcohol-based hand sanitizer with at least 60% alcohol. Always wash hands with soap and water if hands are visibly dirty.

An outbreak

FIGURE 1. Goals of community mitigation for pandemic Influenza



Source: Adapted from: CDC. Interim pre-pandemic planning guidance: community strategy for pandemic influenza mitigation in the United States—early, targeted, layered use of nonpharmaceutical interventions. Atlanta, GA: US Department of Health and Human Services, CDC; 2007. <https://stacks.cdc.gov/view/cdc/11425>.

Disaster Preparedness



Preparing for the next steps

- Preparedness is something that we do, practice and prepare for
- Build on existing structures and lessons learned from the 1918 flu, H1N1, SARS, MERS, and Ebola
- Have recently updated Pandemic Influenza Plan that can be used as guidelines
- Exercised planning for a contagious pandemic in the “Ragin’ Contagion” exercise from April 8-13, 2019
- Have active Emergency Medical Countermeasures Management Plan
- DHSS EOC (Emergency Operations Center) stood up Jan. 24, 2020
- Working closely with other departments, tribal, federal and local partnerships to run through all of the “what ifs”

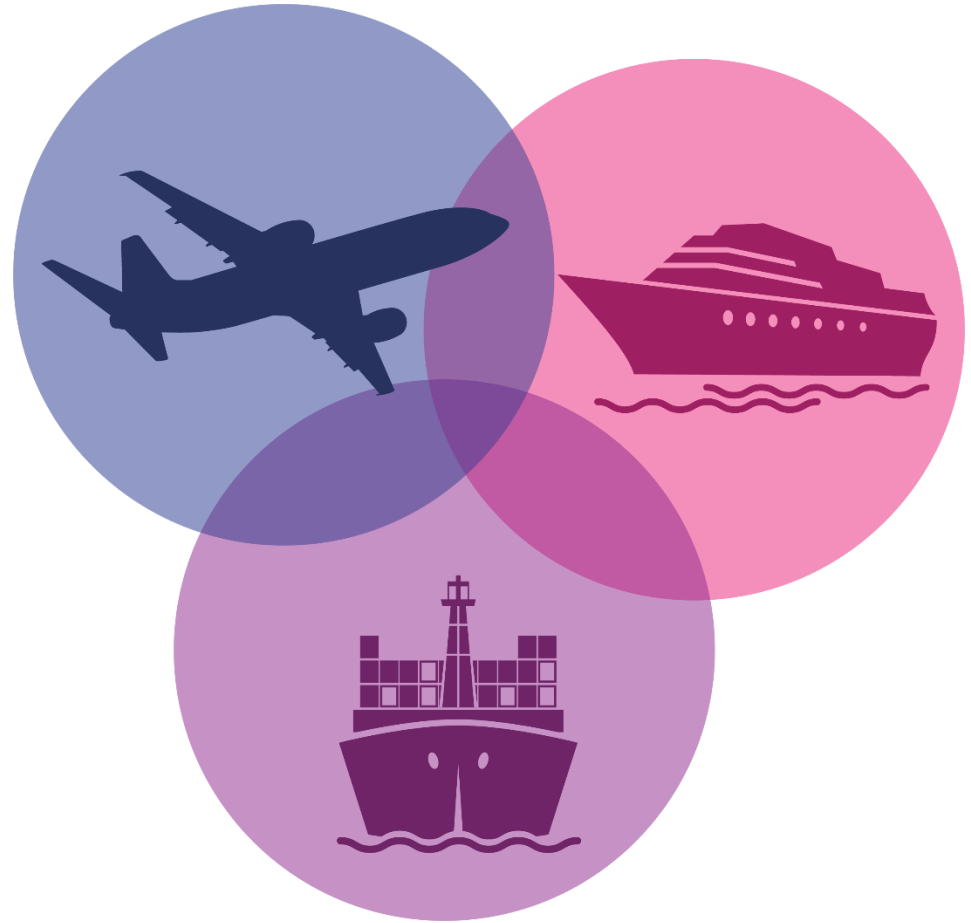
A special case

- Asked to assist in the repatriation of up to 240 US citizens and their families on January 28th, 2020
- Worked closely with federal, local, tribal and state partners to ensure Alaskans were not at any increased risk
- Passenger have all cleared their 14 day quarantine period with no cases
- Alaska is more prepared from having the courage to carry out this mission

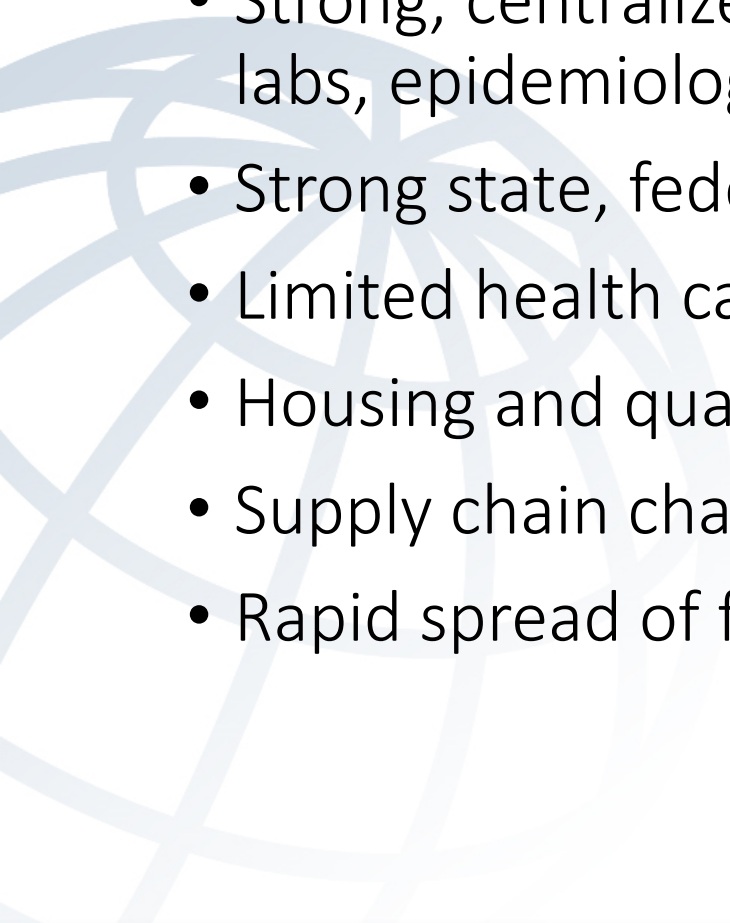


Looking forward - Cruise Ships and Cargo

- Anchorage airport is one of the busiest cargo airports in the world
- Crew members of aircraft have FAA requirements which are slightly different than the general screening into the US
- Cruise lines are limiting passengers who are boarding with pre-boarding screening



Strengths and Weaknesses

- 
- Strong, centralized public health system including labs, epidemiology, emergency operations center
 - Strong state, federal, Tribal, local partnerships
 - Limited health care capacity and large distances
 - Housing and quarantine challenges
 - Supply chain challenges
 - Rapid spread of fear, stigma and misinformation

What is being done



- Health provider webinars
- Emergency operations meetings
- Daily national calls with federal partners including CDC and others
- Public messaging and media
- Interdepartmental preparedness planning including:
 - DMVA, DEED, DOT, DOC, DPS and others

What you can do

- Stay healthy – wash your hands, stay home if sick and get your flu shot
- Stay calm
- Stay involved



Where you can learn more and what is being done

- DHSS website:
<http://www.dhss.alaska.gov/dph/Epi/id/Pages/Human-Coronavirus.aspx>
- CDC website:
<https://www.cdc.gov/coronavirus/index.html>
- On going:
 - Health provider webinars
 - Emergency operations
 - Interdepartmental preparedness planning

A grayscale photograph of a winter scene. A snow-covered path leads through a dense forest of bare, snow-laden trees. The scene is peaceful and serene. Overlaid on the center of the image is the text "Thank You!" in a large, elegant, yellow script font. The text has a slight shadow, giving it a 3D appearance as if it's floating above the landscape. The entire image is framed by a solid blue border at the top and bottom.

Thank You!