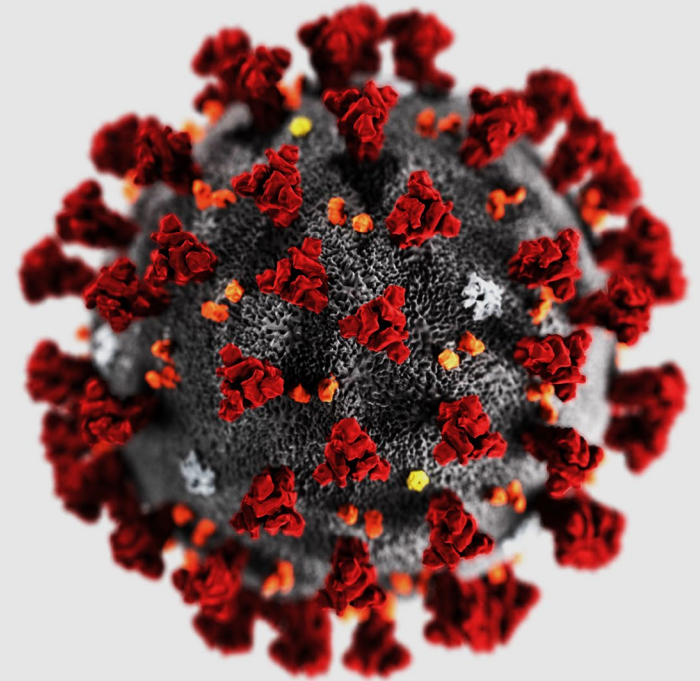


Situation Update

National Vaccination Advisory
Committee

Ram Koppaka, MD, PhD

February 13, 2020



Overview of Presentation

- Coronavirus Disease 2019 (COVID-19) Response
- Coronavirus Background
- Common Human Coronaviruses
- Other Human Coronaviruses
 - SARS and MERS
- COVID-19 Overview



COVID-19 Response



Name Update: 2019-nCoV → COVID-19

- On February 11, 2020 the World Health Organization [announced](#) an official name for the disease that is causing the Coronavirus Disease 2019 outbreak, COVID-19.
- CDC will be updating our website and other CDC materials to reflect the updated name.

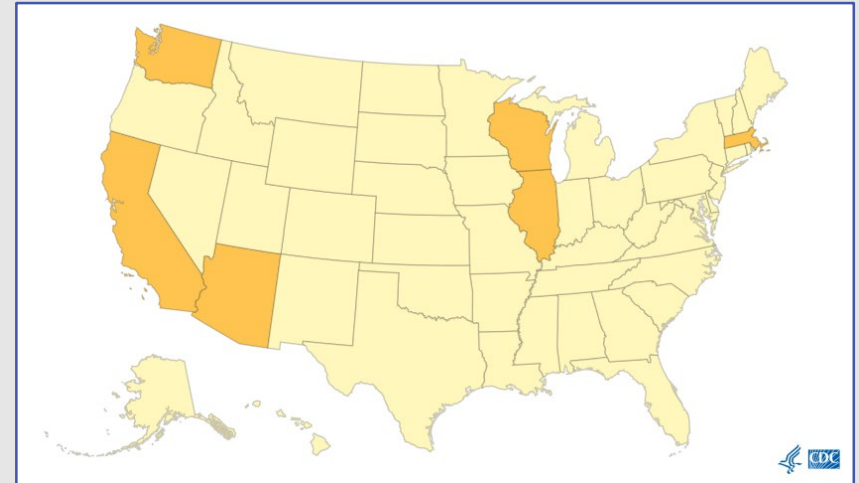
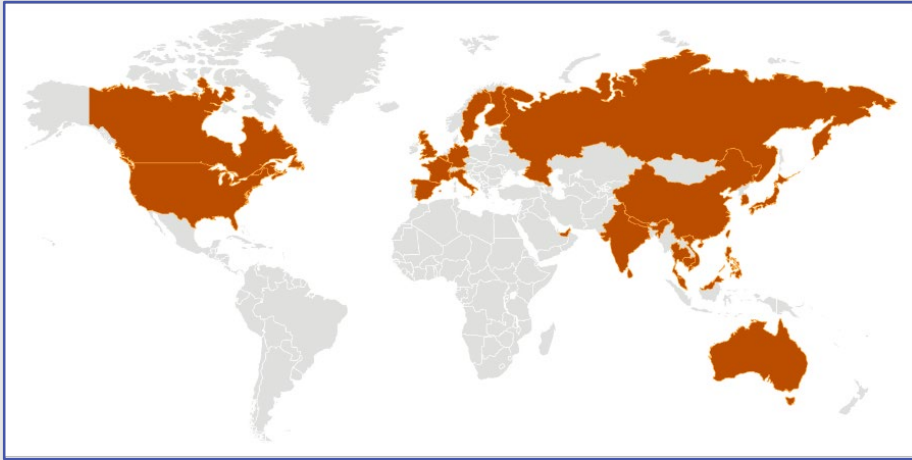


Situation Overview

- As of February 12, 2020:
 - 27 international locations (in addition to the U.S.) have reported confirmed cases of COVID-19 infection.
 - 14 infections reported in the U.S. in six states
 - Two instances of person-to-person spread in the U.S. have been detected.
 - Both cases occurred after close, prolonged contact with a returned traveler from Wuhan.
 - First death of American citizen in China announced



Global and U.S. locations with confirmed COVID-19 as of February 12, 2020



CDC Response

- CDC established a COVID-19 Incident Management System on January 7, 2020.
- While the immediate risk of this new virus to the American public is believed to be low at this time
- CDC is working with healthcare and industry partners to understand supply chain for PPE to adjust response plans for potential limited supplies.
 - CDC posted guidance¹ and strategies² based on current COVID-10 situation and availability of PPE
- CDC is uploading the full genetic sequence of viruses from all identified U.S. patients into GenBank as it becomes available



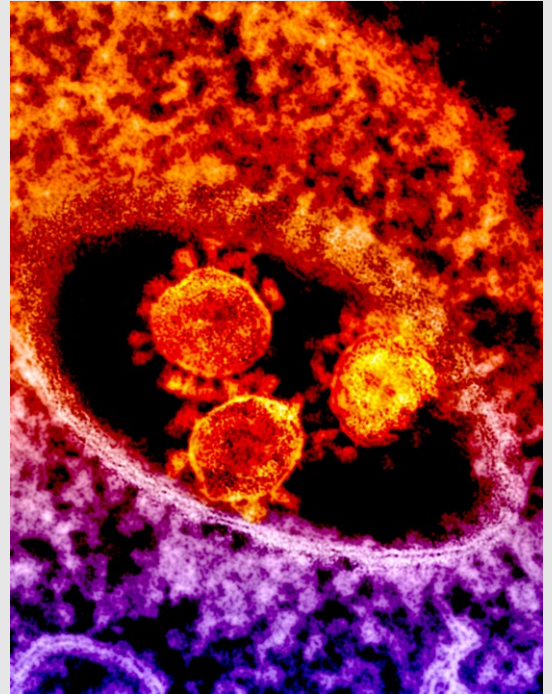
1. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/healthcare-supply-ppe.html>
2. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/healthcare-supply-ppe.html#respirator-supply-strategies>

Coronavirus Background



Coronavirus (CoV) Background

- Large family of viruses that cause respiratory illness
 - Belongs to *Coronaviridae* family
- First isolated in the 1960s
- Named for the crown-like spikes on surface
 - 4 subgroupings (alpha, beta, gamma, delta)
- Some can spread between animals and people (zoonotic)



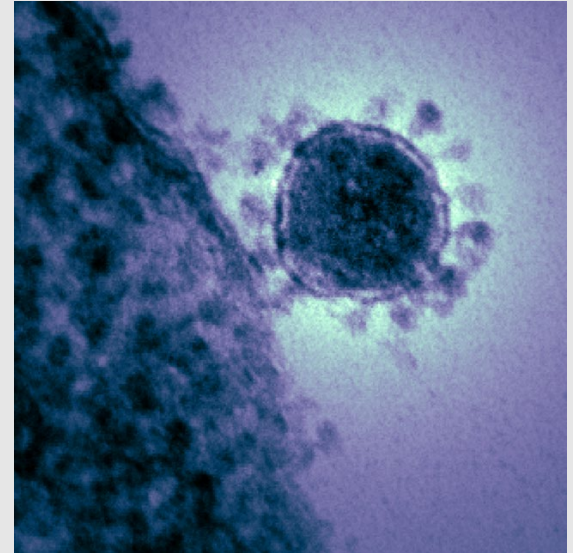
Seven Human Coronaviruses (HCoVs)

■ Common HCoVs:

- HCoV-229E (alpha)
- HCoV-OC43 (alpha)
- HCoV-NL63 (beta)
- HCoV-HKU1 (beta)

■ Other HCoVs:

- SARS-CoV (beta)
- MERS-CoV (beta)
- COVID-19* (beta)



Produced by the National Institute of Allergy and Infectious Diseases (NIAID), this highly magnified, digitally colorized transmission electron microscopic (TEM) image, reveals ultrastructural details exhibited by a single, spherical shaped, **Middle East respiratory syndrome coronavirus (MERS -CoV)** virion.



*Coronavirus Disease 2019

Common HCoVs: How They Spread

- Most commonly spread from an infected person to others through:
 - Respiratory droplets by coughing or sneezing
 - Close personal contact, such as touching or shaking hands
 - Touching an object or surface that has the virus on it
- Commonly occurs in fall and winter, but can occur year-round
- Young children are most likely to get infected
- Most people will get infected at least once in their lifetime



Common HCoVs: Clinical Presentation & Diagnosis

- Usually cause mild to moderate upper-respiratory tract illnesses, like the common cold
 - May cause more severe disease like pneumonia or bronchitis
 - More common in infants, older adults, and people with underlying conditions that weaken the immune system
 - Symptoms may include:
 - Runny nose
 - Headache
 - Cough
- Diagnosis
 - Lab tests can be used to test respiratory specimens and serum (blood) for coronavirus infection



SARS & MERS: History

- Viral respiratory illnesses first recognized
 - 2002 (SARS) in China
 - 2012 (MERS) in Saudi Arabia
- Scope of outbreaks
 - SARS: 8,000+ probable cases and 774 deaths (2002–03)
 - No known human cases since 2004
 - MERS: 2,400+ lab-confirmed cases and 850+ deaths (began 2012; as of 10/3/19)
 - 2 U.S. cases in 2014 among healthcare professionals



Coronavirus Disease 2019 Overview



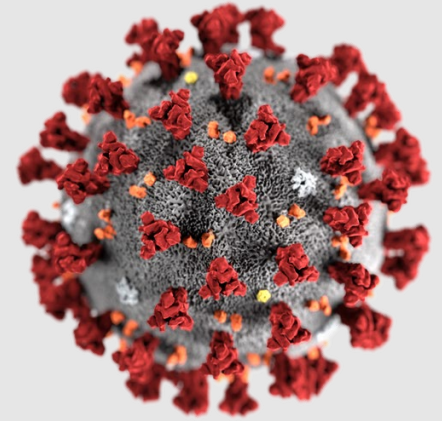
COVID-19: Emergence

- Identified in Wuhan, China in December 2019
- Early on, many patients were reported to have a link to a large seafood and live animal market
- Later patients did not have exposure to animal markets
 - Indicates person-to-person spread
- Travel-related exportation of cases reported
 - First US case: January 21, 2020
- CDC is reporting confirmed COVID-19 cases in the U.S. online at <https://www.cdc.gov/coronavirus/COVID-19/cases-in-us.html>



COVID-19: How It Spreads

- Investigations are ongoing to better understand routes of transmission
- Largely based on what is known from other coronaviruses
 - Presumed to occur primarily through close person-to-person contact
 - May occur when respiratory droplets are produced when an infected person coughs or sneezes
 - Possibly by touching a surface or object that has the virus on it and then touching the mouth, nose, or eyes



COVID-19: Symptoms & Complications

Symptoms may include

- Fever
- Cough
- Shortness of breath

Wide range of illness severity has been reported

- Mild to severe illness
- Can result in death

Estimated incubation period

- 2 to 14 days

Complications may include

- Pneumonia
- Respiratory failure
- Multisystem organ failure



COVID-19: Prevention & Treatment

Everyday preventive actions for respiratory illnesses

- Wash your hands often with soap and water for at least 20 seconds
 - Use an alcohol-based hand sanitizer with at least 60% alcohol if soap and water are not readily available
- 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 it away
- Clean and disinfect frequently touched objects and surfaces

Treatment

- No specific antiviral treatment licensed for COVID-19
- Supportive care to
 - Relieve symptoms
 - Manage pneumonia and respiratory failure
- NIH working to develop therapeutics & vaccine¹



¹ <https://www.niaid.nih.gov/diseases-conditions/coronaviruses-therapeutics-vaccines>

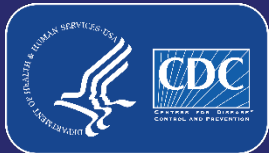
COVID-19: Summary

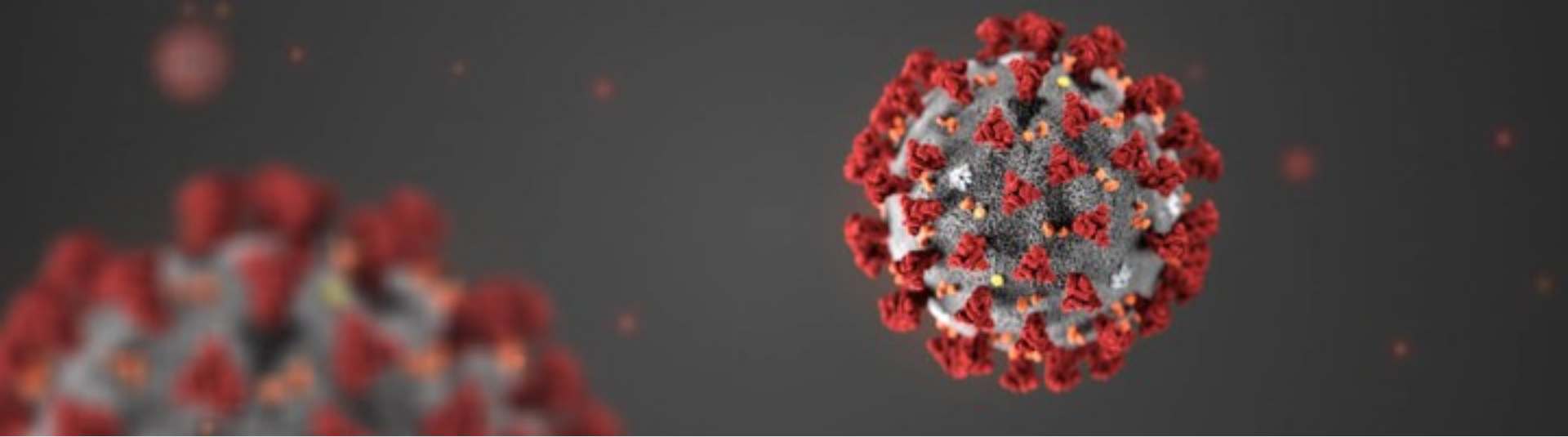
- Expanding outbreak of respiratory illness caused by novel coronavirus
- Most cases are still limited in mainland China
- The virus is able to spread from person-to-person
 - Right now, this virus does not appear to be spreading in the community in the U.S.
- Rapidly evolving situation and the risk assessment for Americans may change
- The federal government is working closely with partners to respond to this public health threat.



Questions?

Email: eocevent272@cdc.gov





For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

