Coronavirus 101

For more information: www.cdc.gov/COVID19
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 among 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)
  - SARS-CoV-2* (beta)

*Causes Coronavirus Disease (COVID-19)
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
    - Sore throat
    - Fever
    - General unwell feeling

- Diagnosis
  - Lab tests can be used to test respiratory specimens and serum (blood) for coronavirus infection in patients with more severe disease
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
COVID-19: Emergence

- Identified in Wuhan, China in December 2019
- Caused by the virus SARS-CoV-2
- 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
How It Spreads

- Investigations are ongoing to better understand spread
- 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
You can help prevent the spread of respiratory illnesses with these actions:

- Avoid close contact with people who are sick.
- Avoid touching your eyes, nose & mouth.
- Wash hands often with soap & water for at least 20 seconds.

www.cdc.gov/COVID19
COVID-19: What You Should Do

Stay informed
- Latest COVID-19 information for the public (www.cdc.gov/COVID19)
- CDC’s travel health notices (wwwnc.cdc.gov/travel/notices)

Take everyday preventive actions
- These are always recommended to prevent the spread of respiratory viruses

Seek medical care if you
- Feel sick with fever, cough, or difficulty breathing
  AND
- Have traveled to an affected area with widespread or sustained community transmission* OR had close contact with a person known to have COVID-19
Situation Update (as of March 9)

- 105,586 confirmed cases; 3,584 deaths
  - 103 (53%) of WHO Member States are affected
- Rate of new cases in mainland China decreasing and rate of new cases outside mainland China increasing
  - Over last 24 hours, 99% of new cases outside of China
- Documented human-to-human transmission amongst close contacts and health care workers
- Over the weekend, CDC recommended travelers, particularly those with underlying health issues, defer all cruise ship travel worldwide.
COVID-19 epidemic curve and major intervention measures in China implemented at the national level

A novel coronavirus was isolated by China CDC
Emergency monitoring, case investigation, close contact management and market investigation initiated, technical protocols for Wuhan released
NHC notified WHO and relevant countries and regions
Gene sequencing completed by China CDC

China CDC publicly shared the gene sequence of the novel coronavirus
NHC issued diagnosis and control technical protocols
NCIP incorporated as a notifiable disease in the Infectious Disease Law and Health and Quarantine Law in China
NHC started officially daily disease information release
State council initiated joint multisectoral mechanism
Wuhan implemented strict traffic restrictions
WHO announced PHEIC
Two new hospitals were established in Wuhan
Enhanced admission and isolated treatment of cases in Hubei
Resumption of labor and rehabilitation
Strategy and response adjustment

Outbreak announced by WHC
NHC and China CDC involved in investigation and response

Number of cases

More cases are now being reported outside of China
Epicurve of confirmed cases outside of China (March 8)
States with COVID-19 cases (as of 1200 March 9)
COVID-19 cases in the United States (as of 0800 March 9)

<table>
<thead>
<tr>
<th>Cases detected and tested in the United States</th>
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<tbody>
<tr>
<td>Total confirmed and presumptive cases</td>
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<td>Total deaths</td>
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<tr>
<td>Travel-related</td>
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<td>Person-to-person spread</td>
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<th>Cases among Persons Repatriated to the United States</th>
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<td>Wuhan, China</td>
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<td><em>Diamond Princess</em> cruise ship</td>
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U.S. Domestic Response – CDC

- Travel: conduct outreach to travelers, issue travel notices
- Laboratory and diagnostics: develop diagnostic tests, confirm all positive test results submitted by states
- Health departments: assess state and local readiness to implement community mitigation measures, link public health agencies and healthcare systems
- Healthcare professionals: develop guidance for healthcare professionals, conduct clinical outreach and education
- Healthcare systems: provide guidance for PPE supply planning, healthcare system screening, and infection control
U.S. Domestic Response – Testing

- Revisions were made to the persons under investigation (PUI) definition and were posted online March 4.
  - The revision expands the criteria for PUIs to a wider group of symptomatic patients.
  - Clinicians should use their judgment to determine if a patient has signs and symptoms compatible with COVID-19 and whether the patient should be tested.
  - Decisions on which patients receive testing should be based on the local epidemiology of COVID-19, as well as the clinical course of illness.
U.S. Domestic Response – Testing

- As of the evening of March 8, 78 state and local public health labs in 50 states and the District of Columbia have successfully verified and are currently using COVID-19 diagnostic tests.
- By the end of last week (March 6) -
  - 1,583 cases had been tested at CDC in Atlanta
    - This does not include testing being done at state and local public health laboratories, which began this week.
  - More than 1.1 million tests have been shipped to nonpublic health labs.
  - U.S. public health labs had the capacity to test 75,000 people.
Number of specimens tested by CDC labs (N=3,698) and U.S. public health laboratories* (N=4,856) by date of specimen collection (as of March 9)
U.S Domestic Response – Engagement with State and Local Partners

- State and Local Partner Calls
  - SHO and state epidemiologists touchbase are being held twice weekly
  - All State National Calls Weekly: SHOs, PHEP Directors, state epis, lab directors, APHL, ASTHO, CSTE, NACCHO—over 2,100 participants
  - 17 other partner calls reaching over 12,000 individuals representing business, associations, and universities
  - Touchbase with Partner NGOs with leadership from APHL, ASTHO, CSTE, and NACCHO every Friday from 1-2pm, weekly touchbase

- Clinician Outreach Calls
  - COCA: Interim Guidance for Clinicians—Jan 31—over 11,000 participants
  - COCA: Clinician Preparedness—March 5—47,000 participants dialed in
CDC has produced more than **30 guidance documents** on infection control, hospital preparedness assessments, personal protective equipment (PPE) supply planning, and clinical evaluation and management (as of March 5, 2020).

- CDC has developed guidance for public health departments and laboratories.
- In addition to travel notices, CDC has developed guidance for ships, airlines, and airline crew.
- CDC has additionally developed guidance for communities and businesses.
U.S. Domestic Response – Resources for Communities

Preventing COVID-19 Spread in Communities

Protect yourself and your community from getting and spreading respiratory illnesses like coronavirus disease 2019. Everyone has a role to play in getting ready and staying healthy.

Practice everyday preventive behaviors! Stay home when sick. Cover coughs and sneezes. Frequently wash hands with soap and water. Clean frequently touched surfaces.

How to prepare and take action for COVID-19

**At Home**
- Get my household ready

**At K-12 Schools and Childcare Programs**
- Get my school and childcare program ready

**At Colleges and Universities**
- Get my college or university ready

**At Work**
- Communicate with coworkers

**Community- and Faith-Based Organizations**
- Plan for suspension of in-person events

**Large Community Events/Mass Gatherings**
- Plan for suspension of in-person events
CDC Web and Media

- Record high web traffic to CDC coronavirus sites
- 19.2 million views on March 5—just coronavirus site
- Normal daily average is 3.5 million views—for ALL cdc.gov sites
- 9.6 million Facebook page views
- ~40 million twitter, other social media reach
- 7,036 participants on media telebriefings on 2/29, 3/3, and 3/9
- 5,244 calls, 4,297 emails to CDC-INFO this week (week 2/29 – 3/6)
## Travel health notices (as of 1200 March 9)

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<th>Level 3 – Widespread community Transmission</th>
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<td>China</td>
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<td>South Korea</td>
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<th>Level 2 – Sustained Community Transmission</th>
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<td>Japan</td>
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<th>Level 1 – Increased community Transmission</th>
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<td>Hong Kong</td>
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<th>Information Box – Limited Community Transmission</th>
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<td>Taiwan</td>
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<td>Thailand</td>
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U.S. International Response – CDC

- CDC has staff in over 50 countries around the world as part of its ongoing global health mission.
- CDC country teams are supporting response efforts in conjunction with public health authorities and partners in host countries with COVID-19 cases and are supporting preparedness efforts elsewhere.
- CDC has deployed experts to Indonesia, Laos, Myanmar, China, Japan, and Republic of Korea.
- CDC is collaborating with WHO to support Ministries of Health to prepare and respond to COVID-19.
- CDC is helping countries implement WHO recommendations related to identifying people who might have COVID-19, the diagnosis and care of patients, and tracking the epidemic.
- CDC staff are also working with country colleagues to conduct investigations that will help inform response efforts going forward.
Call CDC-INFO
Monday - Friday
8:00 a.m. - 8:00 p.m. ET
In English or Spanish

Extended hours for novel Coronavirus questions
Monday - Friday
8:00 p.m. - 11:00 p.m. ET
Saturday – Sunday
9:00 a.m. – 5:00 p.m. ET
In English only

800-CDC-INFO
(800-232-4636)
TTY 888-232-6348