

Coronavirus Disease 2019 (COVID-19)

Infectious Disease Epidemiology Bureau
Epidemiology and Response Division

February 21, 2020

Outbreak Caused by A Novel Corona Virus

- The International Committee of Taxonomy of Viruses (ICTV) has named the virus SARS-CoV-2
 - Due to potential for confusion with SARS-Co-V, the virus that causes COVID-19 will be used in communications
- The World Health Organization (WHO) has named the disease associated with this virus, Coronavirus Disease 2019 or COVID-19

Disclaimer

- This is a rapidly evolving response. The information and guidance contained in these slides are likely to change depending on whether:
 - Conclusive data emerges on the infectious period and the prevalence of subclinical or asymptomatic infections of COVID-19
 - The virus mutates in a way that affects its transmission or severity
 - The virus becomes widespread in the U.S. or other countries
 - Other factors we can't predict

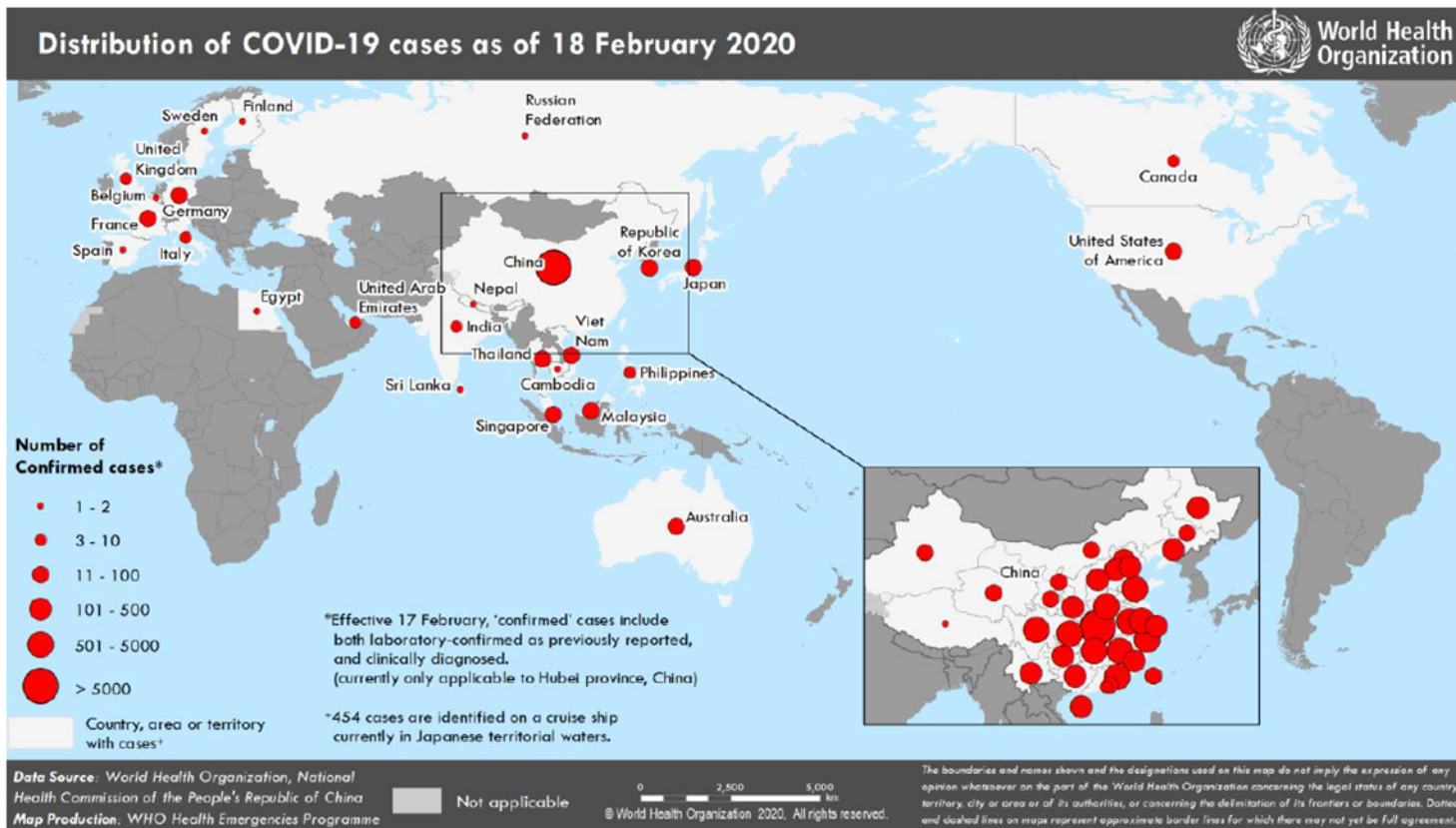
Refer to the Centers for Disease Control and Prevention (CDC) website for the most up to date information and guidance

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

Key Messages

- Call the NMDOH on-call line for consultation (505)827-0006
- Current risk of infection in the U.S. is low and focus is on containment of individual infections
- It's important to note that this virus is not spreading in the community in the United States at this time

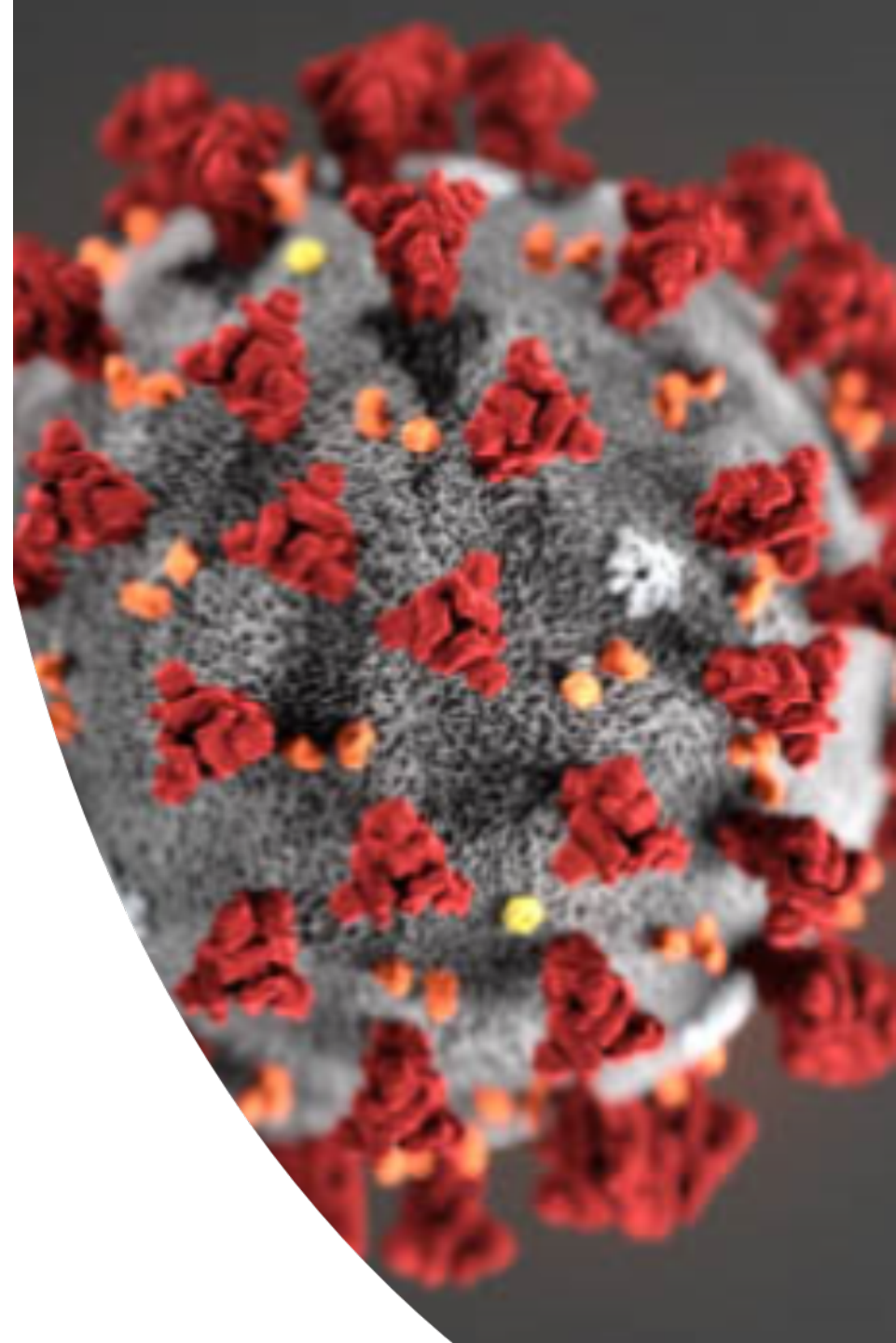
Situation Update As of February 20, 2020



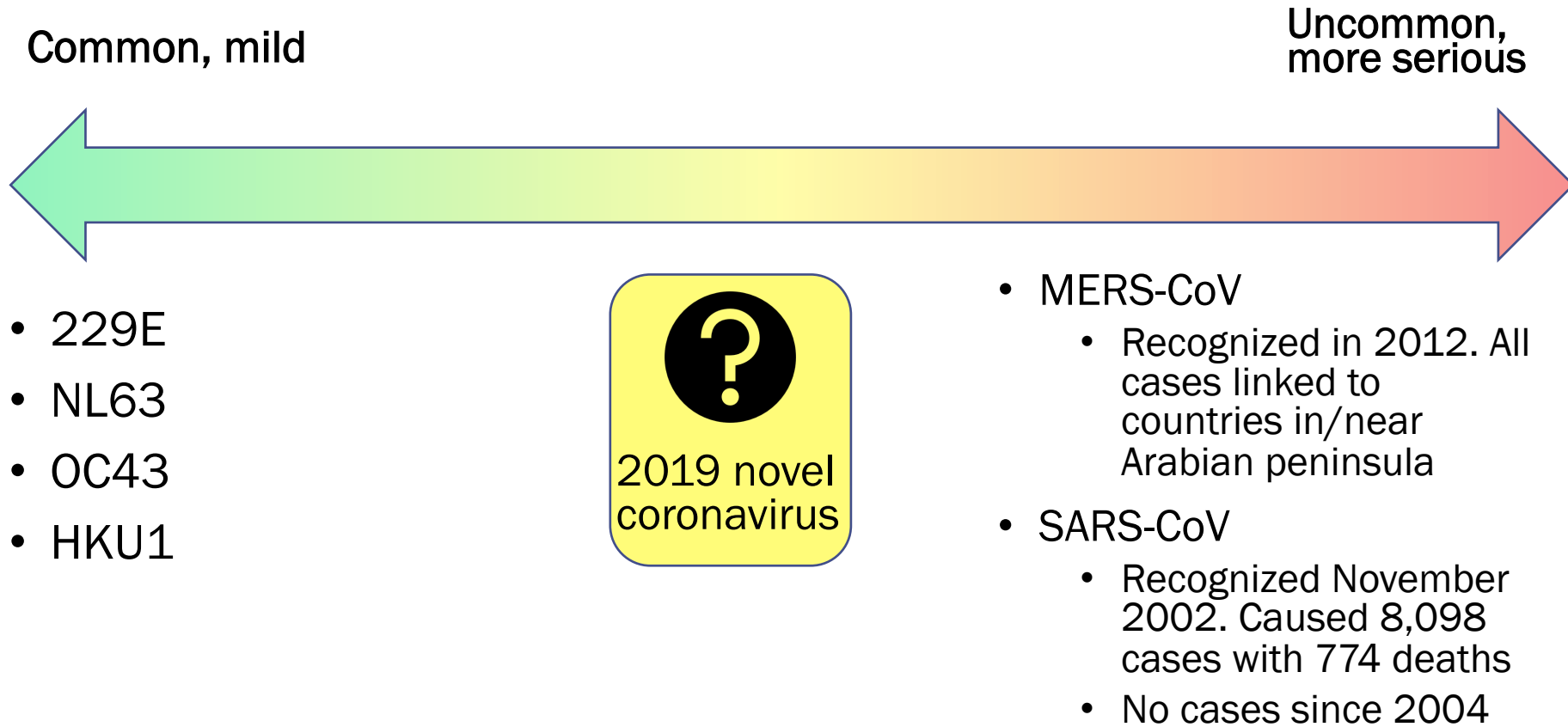
- 75,778 confirmed cases worldwide
 - 74,579 of those are in Mainland China
- 2130 associated deaths
 - Only 3 deaths outside Mainland China
- 15 cases in the US (not including Americans on the Diamond Princess)
 - Travel associated
 - 2 household contacts
- No cases in New Mexico
- No community spread in the US

Background

- 2019 Novel Coronavirus (SARS-CoV2) identified as cause of viral pneumonia outbreak among people exposed to a seafood/animal market in Wuhan, China
- Coronaviruses are a family of RNA viruses
 - “Corona” for crown-like appearance of the virus’s glycoprotein spikes
- 4 types: alpha, beta, gamma, and delta
 - Only alpha and beta types are known to infect humans
- 7 coronaviruses infect humans
 - 2019 SARS-CoV2 likely emerged in late November or early December



Spectrum of Coronaviruses





How COVID-19 Spreads

- Current understanding about how the virus that causes coronavirus disease 2019 (COVID-19) spreads is largely based on what is known about similar coronaviruses.

The virus is thought to spread mainly from person-to-person.

- Between people who are in close contact with one another (within about 6 feet)
- Via respiratory droplets produced when an infected person coughs or sneezes.
- These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs
- It may be possible that a person can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes, but this is not thought to be the main way the virus spreads.

Epidemiology

Transmission

- Reproductive Rate (R_0) ~1.5-3.5 (measles 12-18, influenza 1.3-2.1)
- Spread before the onset of symptoms has been reported, but not confirmed
- Spread is greatest during periods of severe symptoms
- Incubation period 5-6 days (range 2-14 days)
- Overall case fatality rate estimated to be 1-2%, likely to keep decreasing as more mild cases are identified

Geography

- Most COVID-19 cases of person to person spread have occurred in mainland China
- Most COVID-19 cases outside China have been associated with travel to and from China
- 15 cases of COVID-19 have been reported in the US, most associated with travel from China, but some person-person spread among close contacts
- 412 persons under investigation (PUI) in the US have tested negative

Laboratory Testing



- Currently CDC lab is the only US laboratory providing testing
- CDC is remanufacturing test kits to be distributed to state public health laboratories
- The test will not be available in US hospitals or primary care settings

Clinical Course and Severity

Clinical Presentation

- Ranges from asymptomatic or mild to severe or fatal
- Some reports suggest potential for clinical deterioration during second week of illness
 - In one report, just over half of patients developed dyspnea a median of 8 days after illness onset (range 5-13 days)
- Symptoms: fever (83-98%), cough (76-82%); myalgia/fatigue (44%)
- Fever may be prolonged and intermittent
- Overall case fatality rate estimated to be 1-2%, likely to keep decreasing as more mild cases are identified

Early reports among hospitalized patients

- 17-29% developed Acute Respiratory Distress Syndrome (ARDS)
- 10% developed secondary infection
- 23-32% required intensive respiratory care
- 11-15% case fatality rate in hospitalized patients with pneumonia

Identifying People Who May Have Been Exposed

Flowchart to Identify and Assess 2019 Novel Coronavirus

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



A.	Identify if in the <i>past 14 days since first onset of symptoms</i> a history of <i>either</i>		
	Travel to China	← OR →	Close contact with a person known to have 2019-nCoV illness*
B.	AND the person has		
	Fever or symptoms of lower respiratory illness (e.g., cough or shortness of breath)		

if both exposure and illness are present



if both exposure and illness are present



1.	Isolate		
	<ul style="list-style-type: none">Place facemask on patientIsolate the patient in a private room or a separate areaWear appropriate personal protective equipment (PPE)		
2.	Assess clinical status		
	EXAM	Is fever present? <input type="checkbox"/> Subjective? <input type="checkbox"/> Measured? _____°C/F	Is respiratory illness present? <input type="checkbox"/> Cough? <input type="checkbox"/> Shortness of breath?
3.	Inform		
	<ul style="list-style-type: none">Contact health department to report at-risk patients and their clinical statusAssess need to collect specimens to test for 2019-nCoVDecide disposition		

Exposure Criteria

- Travel to Mainland China (community-wide spread)
 - Excluding Hong Kong and Macau
 - Hubei Province is higher risk
 - Not other countries in Asia or anywhere else
- Contact with a person known to have COVID-19
- **If + exposure, call 505-827-0006 for consultation**



Clinical Criteria

- Fever
 - Can be subjective or measured
 - > 100°F
- Lower respiratory symptoms or findings
 - Cough or shortness of breath
 - Clinical exam and radiological findings
- Travelers need both fever **and** symptoms/findings
- Close contacts of known cases will be evaluated with either fever **or** symptoms/findings

Criteria to Guide Evaluation of Persons Under Investigation (PUI) for COVID-19

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 ⁵ 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 ⁵ 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. For severely ill individuals, testing can be considered when exposure history is equivocal (e.g., uncertain travel or exposure, or no known exposure) and another etiology has not been identified.

Laboratory Procedures

- Test patient for flu, RSV, and other respiratory pathogens through their routine lab(s)
- Call 505-827-0006; if nCov testing is approved, prepare to collect
 - Lower respiratory tract
 - Bronchoalveolar lavage (BAL) or tracheal aspirate, AND/OR
 - Sputum
 - Upper respiratory tract
 - Nasopharyngeal (NP) and oropharyngeal/throat swab AND/OR
 - Nasopharyngeal wash/aspirate or nasal aspirate
 - Serum



Diagnostic Respiratory Specimen Collection


- Collecting diagnostic respiratory specimens (e.g., nasopharyngeal swab) are likely to induce coughing or sneezing. Individuals in the room during the procedure should, ideally, be limited to the patient and the healthcare provider obtaining the specimen.
- HCP collecting specimens for testing for 2019-nCoV from patients with known or suspected 2019-nCoV (i.e., PUI) should adhere to Standard, Contact, and Airborne Precautions, including the use of eye protection.
- These procedures should take place in an AIIR or in an examination room with the door closed. Ideally, the patient should not be placed in any room where room exhaust is recirculated within the building without HEPA filtration.

Infection Control



Minimize Chance for Exposures

Measures should be implemented before patient arrival, upon arrival, and throughout the duration of the affected patient's presence in the healthcare setting

- Triage
 - Provide supplies for respiratory hygiene and cough etiquette (60%-95% alcohol-based hand sanitizer, tissues, no touch receptacles for disposal, and facemasks at healthcare facility entrances, waiting rooms, patient check-ins, etc.)
 - Patient placement
 - Essential personnel only
- 

PPE

- Persons under investigation (PUI) should be under contact and airborne precautions with eye protection until determined to pose no risk
 - **Before arrival:** Ask patient to call ahead to the health care provider to determine what entrance to use, how to notify staff of their arrival, and allow facility to prepare for their arrival
 - **Upon arrival and during visit:** Patient should wear a facemask at all times in the facility during which they are not in a negative-pressure airborne isolation room
 - If facility does not have a negative-pressure airborne isolation room, patient should be examined in a private room with a door, and keep a facemask on
- Facility should also keep a log of all staff who care for, enter the room of, or otherwise interact with the patient
 - The number of staff interacting with the patient should be as small as is safe and feasible for maintaining adequate care

Environmental Infection Control

- Dedicated medical equipment should be used for patient care
- All non-dedicated, non-disposable equipment should be cleaned and disinfected according to manufacturers instructions and facility policies
- Ensure environmental cleaning and disinfection procedures are followed consistently and correctly
- Routine cleaning and disinfection procedures for healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed using products with EPA-approved emerging viral pathogens claims are recommended for use against the virus causing COVID-19
- Management of laundry, food service utensils, and medical waste should also be performed in accordance with routine procedures.

PPE Donning and Doffing



Updated February 14, 2021

COVID-19 PPE: Donning and Doffing

Items Required

Gown – standard isolation
N95 Respirator
Eye protection - Face shield or goggles
Gloves

Hand
Hygiene



Donning Order

1. Hand Hygiene
2. Gown
3. Respirator
4. Eye Protection
5. Gloves



Hand
Hygiene



Hand
Hygiene



Hand
Hygiene

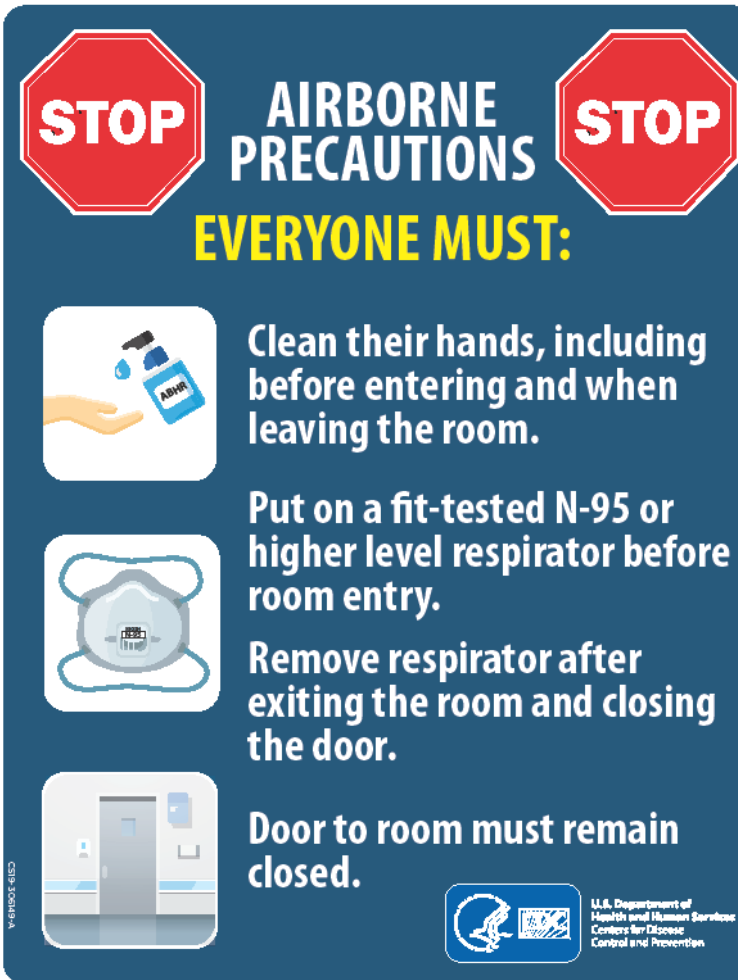
Doffing Order 1

1. Hand Hygiene
2. Gown with Gloves
3. Hand Hygiene
4. Eye Protection
5. Hand Hygiene
6. N95
7. Hand Hygiene

Doffing Order

1. Hand Hygiene
2. Gown
3. Gloves
4. Hand Hygiene
5. Eye Protection
6. Hand Hygiene
7. N95
8. Hand Hygiene

- National Ebola Training and Education Center (NETEC) has created training resources for healthcare personnel including:
 - PPE donning/doffing video
 - PPE donning/doffing infographic
 - Training checklist
 - Evaluator guide
- See links on resource slide

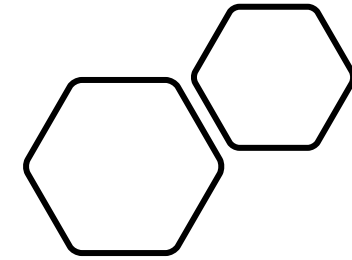




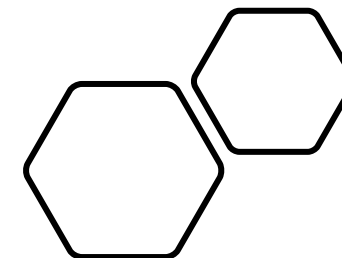
Management of Healthcare Personnel with exposure to COVID-19

Epidemiologic risk factors	Exposure category	Recommended Monitoring for 2019-nCoV (until 14 days after last potential exposure)	Work Restrictions for Asymptomatic HCP
A. HCP (with unprotected eyes, nose, or mouth) ² who perform <u>or</u> are present in the room for a procedure likely to generate higher concentrations of respiratory secretions or aerosols (e.g., cardiopulmonary resuscitation, intubation, extubation, bronchoscopy, nebulizer therapy, sputum induction).	High	Active	Exclude from work for 14 days after last exposure
B. HCP who perform or are present in the room for a procedure likely to generate higher concentrations of respiratory secretions or aerosols (e.g., cardiopulmonary resuscitation, intubation, extubation, bronchoscopy, nebulizer therapy, sputum induction) and not using a gown and gloves. Note: If the HCP's eyes, nose, <u>or</u> mouth were also unprotected they would fall into the high-risk category above.	Medium	Active	Exclude from work for 14 days after last exposure
C. HCP (with unprotected eyes, nose, <u>or</u> mouth) ² who have prolonged close contact with a patient <i>who was not wearing a facemask</i> . Note: A respirator confers a higher level of protection than a facemask. However, they are group together in this scenario because (even if a respirator or facemask was worn) the eyes remain uncovered while having prolonged close contact with a patient <i>who was not wearing a facemask</i> .	Medium	Active	Exclude from work for 14 days after last exposure

Close contact for healthcare exposures is defined as follows: a) being within approximately 6 feet (2 meters), of a person with 2019-nCoV infection for a prolonged period of time (such as caring for or visiting the patient; or sitting within 6 feet of the patient in a healthcare waiting area or room); or b) having unprotected direct contact with infectious secretions or excretions of the patient (e.g., being coughed on, touching used tissues with a bare hand).



D. HCP (with unprotected eye, nose, and mouth) ² who have prolonged close contact with a patient <i>who was wearing a facemask</i> .	Medium	Active	Exclude from work for 14 days after last exposure
E. HCP (not wearing gloves) who have direct contact with the secretions/excretions of a patient and the HCP failed to perform immediate hand hygiene Note: If the HCP performed hand hygiene immediately after contact, this would be considered low risk.	Medium	Active	Exclude from work for 14 days after last exposure
F. HCP wearing a facemask or respirator only who have prolonged close contact with a patient <i>who was wearing a facemask</i> Note: A respirator confers a higher level of protection than a facemask. However, they are grouped together in this scenario and classified as <i>low-risk</i> because the patient was wearing a facemask for source control.	Low	Self with delegated supervision	None
G. HCP using all recommended PPE (i.e., a respirator, eye protection, gloves and a gown) while caring for or having contact with the secretions/excretions of a patient	Low	Self with delegated supervision	None
H. HCP (not using all recommended PPE) who have brief interactions with a or patient regardless of whether patient was wearing a facemask (e.g., brief conversation at a triage desk; briefly entering a patient room but not having direct contact with the patient or their secretions/excretions; entering the patient room immediately after they have been discharged)	Low	Self with delegated supervision	None
I. HCP who walk by a patient or who have no direct contact with the patient or their secretions/excretions and no entry into the patient room	No identifiable risk	None	None



Preparedness and Response

NMDOH Preparedness and Response

- On Jan. 22, Jan. 31, and Feb. 7, NMDOH **disseminated health alerts** on how to identify and respond to potential COVID-19 cases
- Putting out **weekly press releases** on novel coronavirus
- Created and **published a webpage** on COVID-19, updated weekly or as needed
- **Revised the Pandemic Influenza Plan** in the event that COVID-19 becomes a pandemic
- NMDOH's Epidemiology and Response Division has **epidemiologists on call 24/7/365**. Health care providers and the public can ask questions or report possible COVID-19 cases at **(505) 827-0006**
- NMDOH is being notified by CDC of people arriving in New Mexico from China and is monitoring these persons for symptoms for 14 days from their last day in China
 - In the event of febrile respiratory illness among recent travelers, NMDOH will ensure appropriate transport and that the hospital is ready for the patient
- NMDOH's Scientific Laboratory Division (SLD) has obtained the **laboratory diagnostic test kit** developed by CDC, and it should be available for use in the coming weeks
- NMDOH is holding **conference calls with various stakeholders** to update them on the outbreak and provide any guidelines they might need

Travelers from China Arriving in the United States

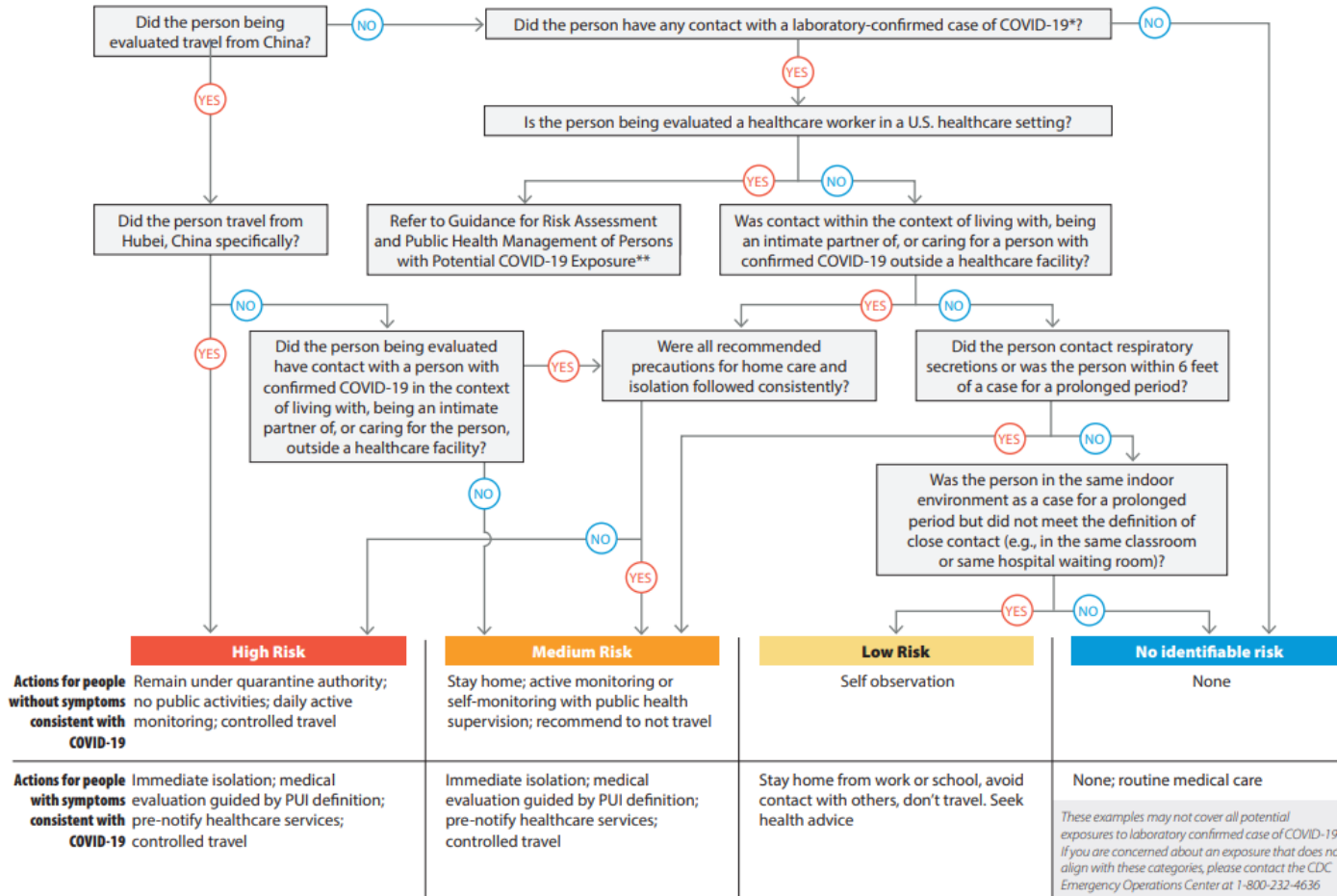
- Foreign nationals who have visited China in the past 14 days may not enter the United States.
- American citizens, lawful permanent residents, and their families who have been in China in the past 14 days will be allowed to enter the United States, but will be redirected to one of 11 airports to undergo health screening. Depending on their health and travel history, they will have some level of restrictions on their movements for 14 days from the time they left China.

If you are in the second group above and are traveling to the United States:

- Your travel will be redirected to one of 11 U.S. airports where CDC has quarantine stations.
- You will be asked about your health and travel.
- Your health will be screened for fever, cough, or trouble breathing.
- Depending on your health and travel history:
 - You will have some restrictions on your movement for a period of 14 days from the time you left China

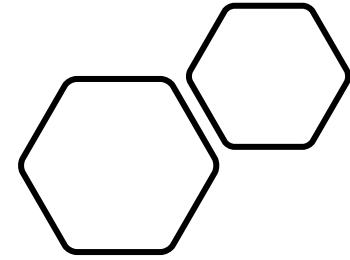
Coronavirus Disease 2019 (COVID-19) Risk Assessment and Public Health Management Decision Making

Each question refers to within the past 14 days



*Or a case diagnosed clinically with COVID-19 infection outside of the United States who did not have laboratory testing
 **Healthcare provider (HCP) guidance outlines risk categories to determine work exclusion and monitoring procedures. After identifying risk category in the HCP guidance, use the categories outlined here to determine quarantine requirements.

These examples may not cover all potential exposures to laboratory confirmed case of COVID-19. If you are concerned about an exposure that does not align with these categories, please contact the CDC Emergency Operations Center at 1-800-232-4636



Travelers who have been in Hubei Province in the past 14 days:

- **If you have fever, cough, or trouble breathing:** CDC staff at the airport will evaluate you for illness. You will be taken to a medical facility for further evaluation and care. You will not be able to complete your travel itinerary.
- **If you do not have symptoms (fever, cough, trouble breathing):** You will be placed under a federal, state or local quarantine order for a 14-day period from the time you left China. You may not be able to complete your travel itinerary until the 14-day period has elapsed.



Travelers from other parts of China (outside Hubei Province) in the last 14 days:

- **If you have fever, cough, or trouble breathing:** CDC staff at the airport will evaluate you for illness. You will be taken to a medical facility for further evaluation and care. You may not be able to complete your travel itinerary.
- **If you do not have symptoms:** You will be allowed to reach your final destination. After arrival at your final destination, you will be asked to monitor your health for a period of 14 days from the time you left China. You will receive a [health information card](#) that tells you what symptoms to look for and what to do if you develop symptoms. During that time, you should stay home and limit interactions with others as much as possible. Your state or local health department will contact you for further follow up.

HEALTH ALERT: *Travelers from China*

There is an outbreak of respiratory illness in China.

Travelers are required to be monitored for up to 14 days after leaving China.

Travelers should stay home and monitor their health within this 14-day period.

A health official will contact you to give additional instructions.

Take your temperature with a thermometer 2 times a day and watch your health.

If you develop a fever (100.4°F/38°C or higher), cough, or have difficulty breathing:

- Call your health department for advice before seeking care.
- If you can't reach your health department, call ahead before going to a doctor's office or emergency room.
- Tell them your symptoms and that you were in China.



For more information: www.cdc.gov/nCoV

Asymptomatic Travelers and Contacts

ASYMPTOMATIC

Risk Category	Movement Restrictions and Public Activities	Monitoring	Travel
High risk	Remain quarantined (voluntary or under public health orders on a case-by-case basis) in a location to be determined by public health authorities. No public activities.	Daily active monitoring	Controlled
Medium risk	To the extent possible, remain at home or in a comparable setting. Avoid congregate settings, limit public activities, and practice social distancing.	Travelers from mainland China outside Hubei Province with no known high-risk exposure: Self-monitoring with public health supervision All others in this category: Active monitoring	Recommendation to postpone additional long-distance travel after they reach their final destination. People who intend to travel should be advised that they might not be able to return if they become symptomatic during travel.
Low risk	No restriction	Self-observation	No restriction
No Identifiable Risk	No restriction	None	No restriction

Universal Messages

- Seasonal respiratory infections should be your primary focus for prevention and diagnosis
- Stay Well
 - Avoid close contact with people who are sick
 - Avoid touching your eyes, nose, and mouth
 - Wash your hands often with soap and water for at least 20 seconds (or >60% alcohol sanitizer if no soap/water)
- Sick?
 - Stay home when you are sick and limit exposure to others
 - Cover your cough
 - Clean and disinfect frequently touched surfaces

COVID-19 Messages

- Call the NMDOH on-call line for consultation 505-827-0006
- Current risk of infection in the U.S. is low and focus is on containment of individual infections
- Travel exposure is only Mainland China at this time
- Interest in COVID-19 is an opportunity to educate about the prevention of respiratory infections

Resources

New Mexico Department of Health <https://nmhealth.org/about/erd/ideb/ncov/>

Information for the Public

[CDC 2019-nCoV Website](#)

Information for Clinicians

[CDC Interim Guidance for Healthcare Professionals](#)

[CDC Interim Guidance for Healthcare Infection Prevention and Control](#)

[CDC Interim Guidance for Implementing Home Care of People Not Requiring Hospitalization for 2019 Novel Coronavirus](#)

If you suspect 2019 Novel Coronavirus in a patient, immediately notify infection control personnel at your facility and contact the New Mexico Department of Health at (505) 827-0006

Information for Infection Prevention and Control Professionals

[CDC Interim Guidance for Healthcare Infection Prevention and Control](#)

[NETEC PPE Training Resources](#)

Information for Laboratories

[CDC Interim Laboratory Biosafety Guidelines for Handling and Processing Specimens Associated with 2019 Novel Coronavirus](#)

[CDC Interim Guidance for Collecting, Handling, and Testing Clinical Specimens from Patients Under Investigation \(PUIs\) for 2019 Novel Coronavirus](#)

The CDC has developed a reverse-transcriptase polymerase chain reaction (RT-PCR) test to rapidly diagnose 2019 Novel Coronavirus. This test is currently only available at CDC, although there are plans to make the test available to state public health labs in the future.

The New Mexico Department of Health will help coordinate testing and shipping logistics.



RAPID RESPONSE PROGRAM

Rapid Response – Podcast and Webinar on Novel Coronavirus

SHEA will be launching both a podcast and webinar to address the novel Coronavirus.

The podcast will address frequently asked questions about the novel Coronavirus in an interview with Michael Bell, MD, Deputy Director of Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention, moderated by Dr. David Banach, MD, MPH.

Launch - Monday, February 24, 2020 | Michael Bell, MD

The webinar, *Healthcare Facility Outbreak Preparedness*, will address what healthcare facilities/providers can do in both the inpatient and outpatient setting to decrease the risk of outbreaks, especially regarding novel respiratory viruses. The role of planning and simulation will be discussed, as well as the need to train healthcare workers to utilize PPE correctly. This webinar will be moderated by Joan Hebden, RN, MS, CIC, FAPIC.

Live Webinar – Thursday March 5, 2020 from 3:00 – 4:00 p.m. EST | Eileen Korey, Jennifer Hanrahan, DO, Kavita Trivedi, MD, and Bruce Ribner, MD, MPH

Registration for this webinar is FREE but limited. A recording will be made available to all, on LearningCE.

Register

<https://learningce.shea-online.org/>