



COVID-19 Information for Medical Professional & Staff

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Michigan Department of Health and Human Services
March 5, 2020

Presentation Logistics

- Please remember to keep your phone on mute
- We will have a question and answer portion at the end
 - Please use the Q&A chat box on the middle left-hand side of your screen to submit your questions.

Target Audience

Healthcare providers, public health professionals, healthcare administrators, and other professionals who may have a role in screening for or taking care of patients with COVID-19.

Objectives

After participating in this webinar, attendees will be able to:

1. Identify a suspect case of COVID-19
2. Manage patients who may have or are confirmed to have COVID-19
3. Prevent the spread of COVID-19 in the health care setting and community
4. Access the most up-to-date national and Michigan specific resources regarding COVID-19

Disclaimer

Due to the fluidity of this situation, please reference the resources listed below for the most up to date information.

Michigan Department of Health and Human Services (MDHHS):
www.michigan.gov/coronavirus

Centers for Disease Control and Prevention (CDC): www.cdc.gov/coronavirus/2019-ncov/index.html

World Health Organization (WHO):
www.who.int/emergencies/diseases/novel-coronavirus-2019

Overview



Current COVID-19 situation update



Epidemiology and clinical characteristics



Public health prevention efforts

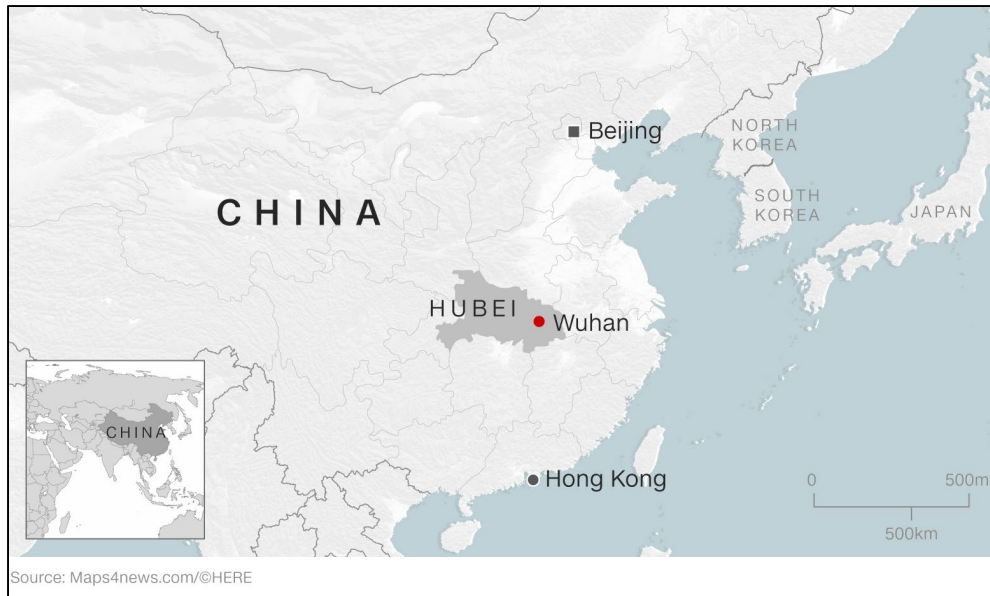


Evaluation of suspected COVID-19



Infection control in ambulatory and hospital settings

2019 Novel Coronavirus



December 31, 2019

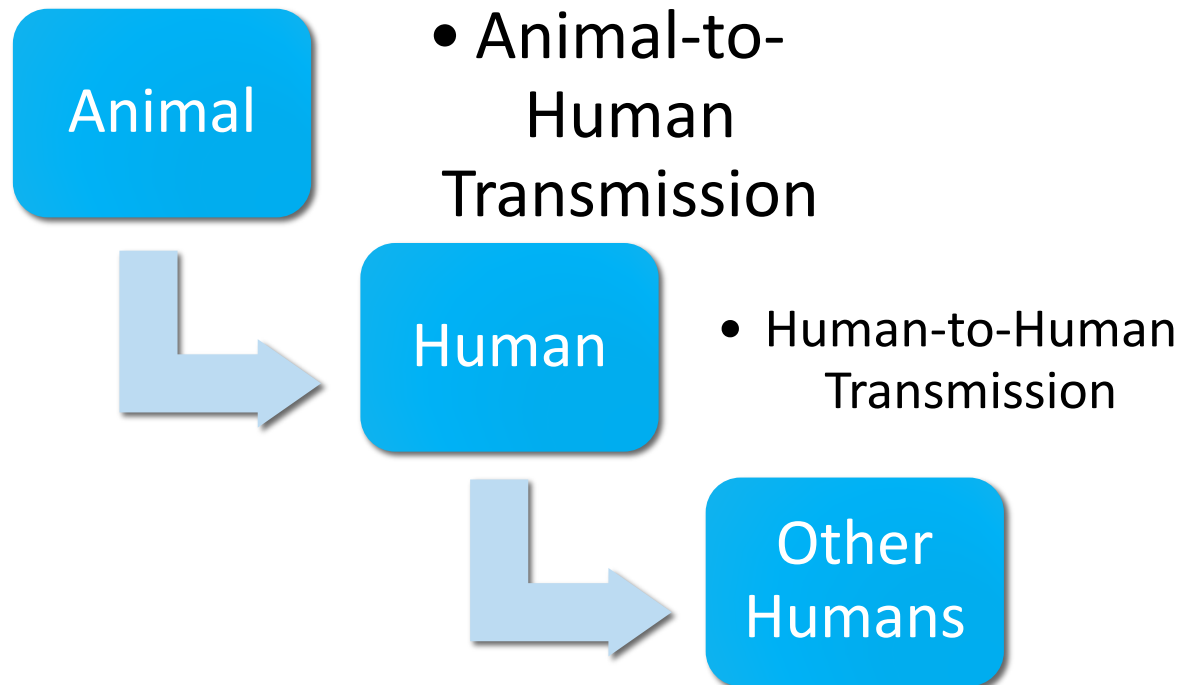
- Cluster of pneumonia cases of unknown etiology identified in Wuhan, China

January 7, 2020

- Confirmed that the cluster was associated with a novel coronavirus, 2019-nCoV
- Previously referred to as 2019 novel coronavirus (2019-nCoV)
- Now Named: **COVID-19**
 - COVID-19 – names of the disease
 - SARS-CoV-2 → virus causing COVID-19

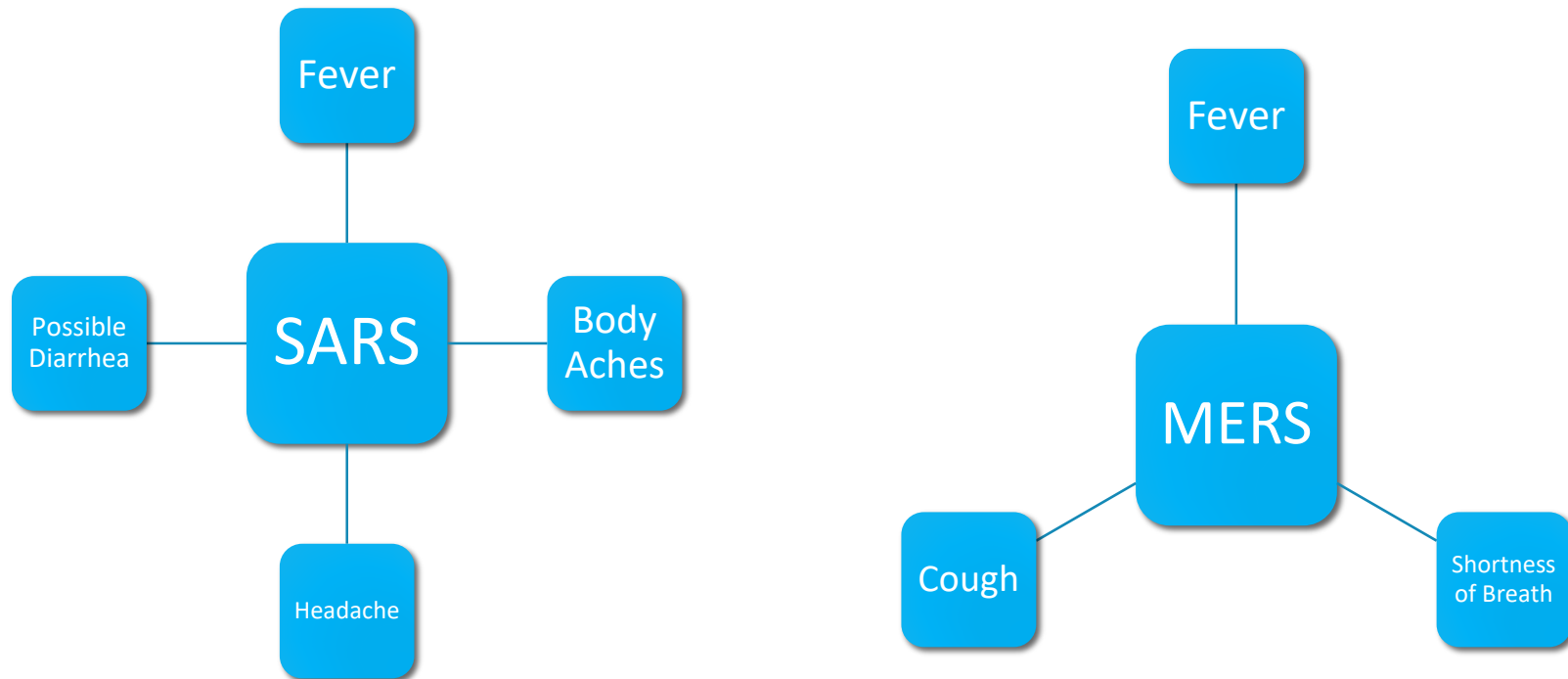
Sources: World Health Organization. Pneumonia of unknown cause-China. www.who.int/csr/don/05-january-2020-pneumonia-of-unknown-cause-china
World Health Organization. Novel coronavirus-China. www.who.int/csr/don/12-january-2020-novel-coronavirus-china

Routes of Transmission



SARS and MERS

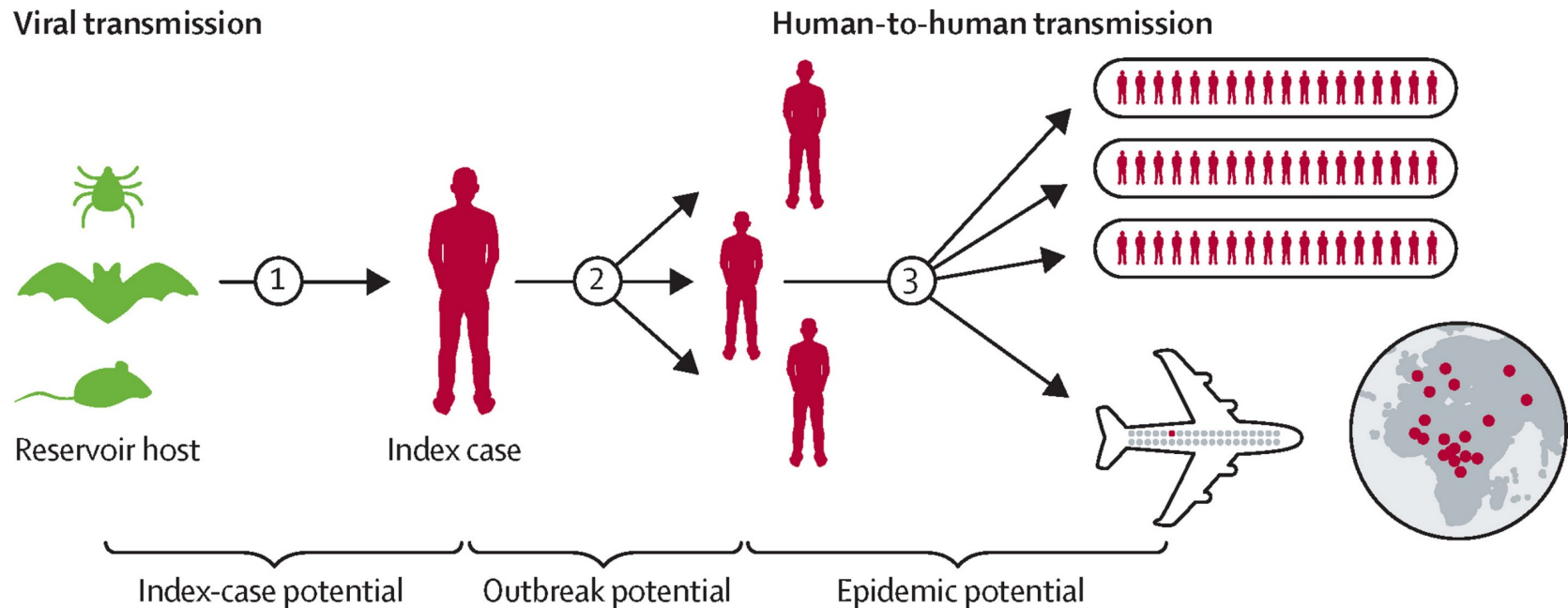
Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) were also the result of newly discovered beta coronavirus.



Sources: SARS Basics Fact Sheet. <https://www.cdc.gov/sars/about/fs-sars.html#symptoms>

Information about Middle East Respiratory Syndrome (MERS). https://www.cdc.gov/coronavirus/mers/downloads/factsheets-mers_en.pdf

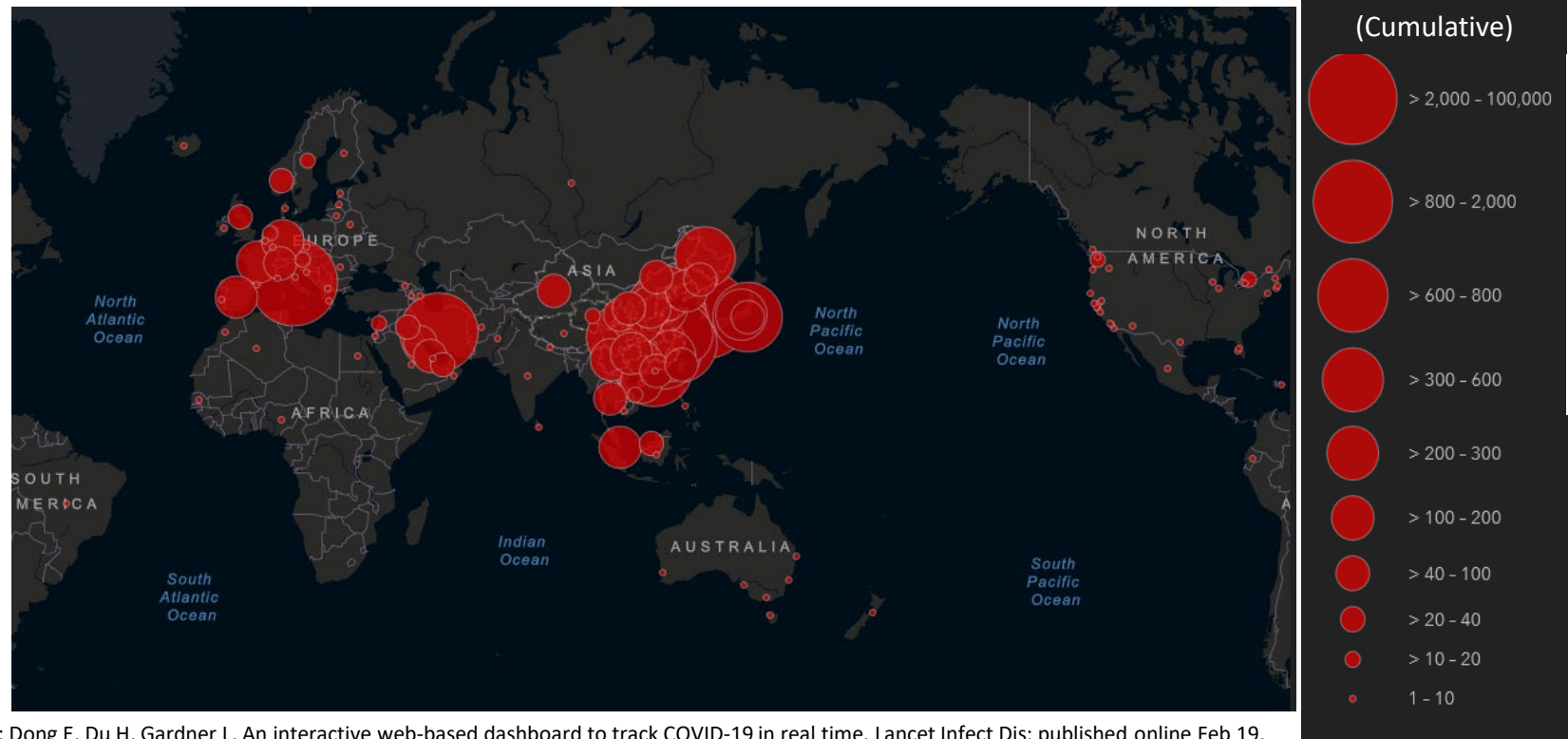
Travel Related Exportation of Cases



Source: The Lancet Published online October 11, 2017 *Lancet*. doi: [https://doi.org/10.1016/S0140-6736\(17\)32092-5](https://doi.org/10.1016/S0140-6736(17)32092-5)

COVID-19 Global Cases by the Johns Hopkins Center for Systems Science and Engineering

(as of March 2, 2020)



Source: Dong E, Du H, Gardner L. An interactive web-based dashboard to track COVID-19 in real time. Lancet Infect Dis; published online Feb 19. [https://doi.org/10.1016/S1473-3099\(20\)30120-1](https://doi.org/10.1016/S1473-3099(20)30120-1).

<https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>. Accessed Mar 2, 2020.

COVID-19 Basics

What?

COVID-19

- caused by SARS-CoV-2
- potential to cause severe illness and pneumonia

How Spread?

- Droplets
 - Close contact (6ft)
- Fomite
- Asymptomatic

Symptoms?



Fever



Cough



Difficulty Breathing

Incubation Period?

- 2-14 days

Risk?

- Currently, low overall risk for infection in Michigan
- In areas where sustained transmission seen, relatively low attack rate seen among individuals < 20 years of age (2% of total cases)
- Highest risk for severe disease
 - Elderly
 - Comorbidities

Treatment?

- Supportive care

Source: www.michigan.gov/documents/mdhhs/nCOV-2019_General_Fact_Sheet_v2-4-20_680266_7.pdf

COVID-19 Case Fatality Rate (CFR) in China*

(as of Feb 20, 2020)

Geography

- Wuhan: 5.8%
- All other locations in China: 0.7%

Stage of Outbreak (by date of symptom onset)

- Jan 1–10: 17.3%
- Since Feb 1: 0.7%

Age**

- ≥80 years: 14.8%
- 70–79 years: 8.0%
- <10 years: 0%

Sex

- Males: 4.7%
- Females: 2.8%

Comorbid Conditions

- Cardiovascular disease: 13.2%
- Diabetes: 9.2%
- Hypertension: 8.4%
- Chronic respiratory disease: 8.0%
- Cancer: 7.6%
- No comorbid condition: 1.4%

*Based on 55,924 laboratory-confirmed cases described in the WHO-China Joint Mission on Coronavirus Disease (COVID-19), 16-24 Feb 2020.

Source: <https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf>

**Based on 44,672 confirmed cases reported in JAMA, 24 Feb 2020. Source: <https://jamanetwork.com/journals/jama/fullarticle/2762130>

Coronavirus Outbreak Characteristics – COVID-19, SARS, MERS

	COVID-19 (as of Mar 3, 2020)	SARS	MERS
Cases	90870	8096	2494
Deaths	3112	774	858
Countries	73	29	27
Case-fatality rate	~2.6% overall (0.8% outside China)	9.6%	34.4%
Secondary transmission	Primarily within households and other community settings	Primarily within healthcare settings	Primarily within healthcare settings

Source: <https://jamanetwork.com/journals/jama/fullarticle/2762130>

Informational Handout for Patients

2019 NOVEL CORONAVIRUS



The Michigan Department of Health and Human Services (MDHHS) is working closely with healthcare providers, local public health departments, and the Centers for Disease Control and Prevention (CDC) to actively monitor any potential cases of 2019 Novel Coronavirus (2019-nCoV) in Michigan. MDHHS will update information as it becomes available at: michigan.gov/coronavirus.

What Is 2019 Novel Coronavirus?

2019 Novel Coronavirus is a virus strain that has only spread in people since December 2019. Health experts are concerned because little is known about this new virus and it has the potential to cause severe illness and pneumonia.

How does 2019 Novel Coronavirus spread?

Health experts are still learning the details about how this new coronavirus spreads. Other coronaviruses spread from an infected person to others through:

- the air by coughing and sneezing.
- close personal contact, such as touching or shaking hands.
- touching an object or surface with the virus on it, then touching your mouth, nose, or eyes.
- in rare cases, contact with feces.

What are the symptoms of 2019 Novel Coronavirus?

People who have been diagnosed with 2019 Novel Coronavirus have reported symptoms that may appear in as few as two days or as long as 14 days after exposure to the virus:



Fever



Cough



Difficulty Breathing

michigan.gov/coronavirus

Who is at risk for 2019 Novel Coronavirus?

Currently the risk to the general public is low. At this time, there are a small number of individual cases in the United States. To minimize the risk of spread, health officials are working with healthcare providers to promptly identify and evaluate any suspected cases.

Travelers to and from certain areas of the world may be at increased risk. See cdc.gov/travel for the latest travel guidance from the CDC.

How can I protect myself from getting 2019 Novel Coronavirus?

If you are traveling overseas (to China but also to other places) follow the CDC's guidance: cdc.gov/travel.

Right now, there are no additional precautions recommended for the general public. Steps you can take to prevent spread of flu and the common cold will also help prevent 2019 Novel Coronavirus:



Wash your hands often with soap and water. If not available, use hand sanitizer.



Avoid touching your eyes, nose or mouth with unwashed hands.



Cover your mouth and nose with a tissue when coughing.



Avoid contact with people who are sick.



Stay home if you are sick, and contact your healthcare provider.

How Is 2019 Novel Coronavirus treated?

There are no medications specifically approved for coronavirus. People infected with 2019 Novel Coronavirus should receive supportive care to help relieve symptoms. For severe cases, treatment should include care to support vital organ functions.

2019 Novel Coronavirus Information Updates:

Centers for Disease Control and Prevention: cdc.gov/coronavirus

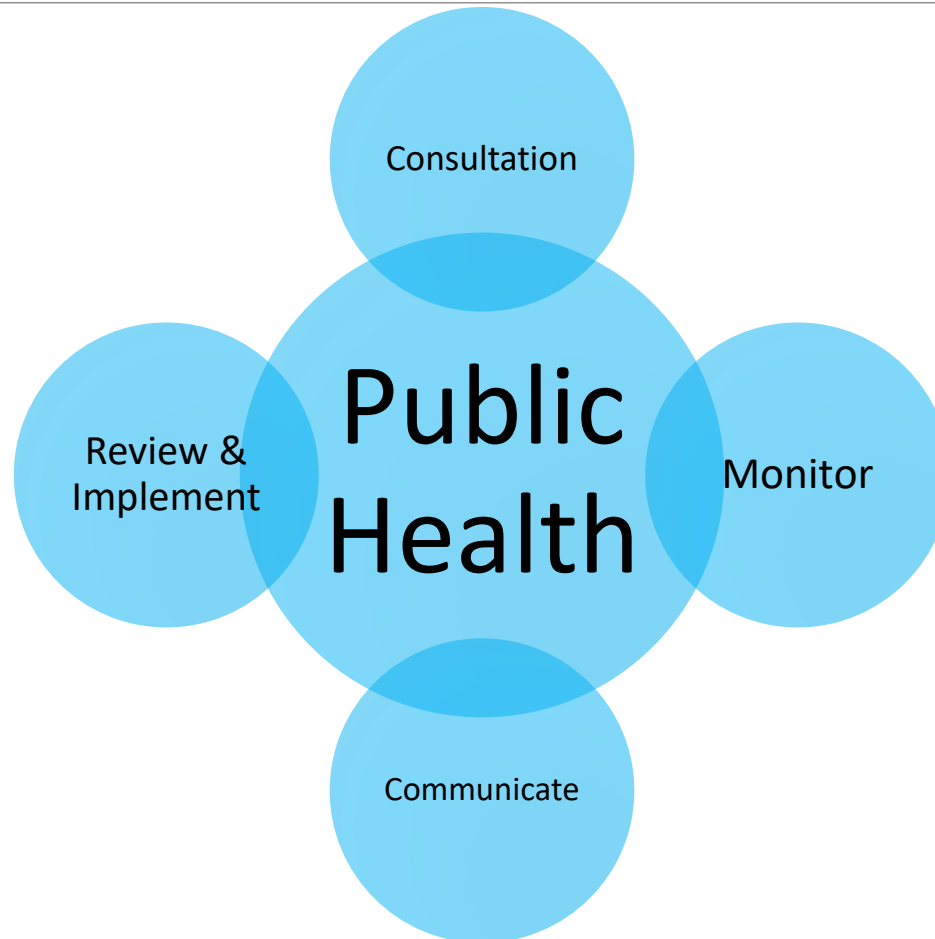
Michigan Department of Health and Human Services: michigan.gov/coronavirus

Thank you to Public Health - Seattle & King County for significant contributions to this document.

2/10/2020

Source: www.michigan.gov/documents/mdhhs/nCOV-2019_General_Fact_Sheet_v2-4-20_680266_7.pdf

Role of Public Health?



Does the Patient Meet Criteria for Testing?

Decisions on which patients receive testing should be based on the local epidemiology of COVID-19, as well as the clinical course of illness

Most patients with confirmed COVID-19 have developed fever and/or symptoms of acute respiratory illness (e.g., cough, difficulty breathing)

Clinicians are strongly encouraged to test for other causes of respiratory illness, including infections such as influenza

Epidemiologic factors to help guide decisions on testing:

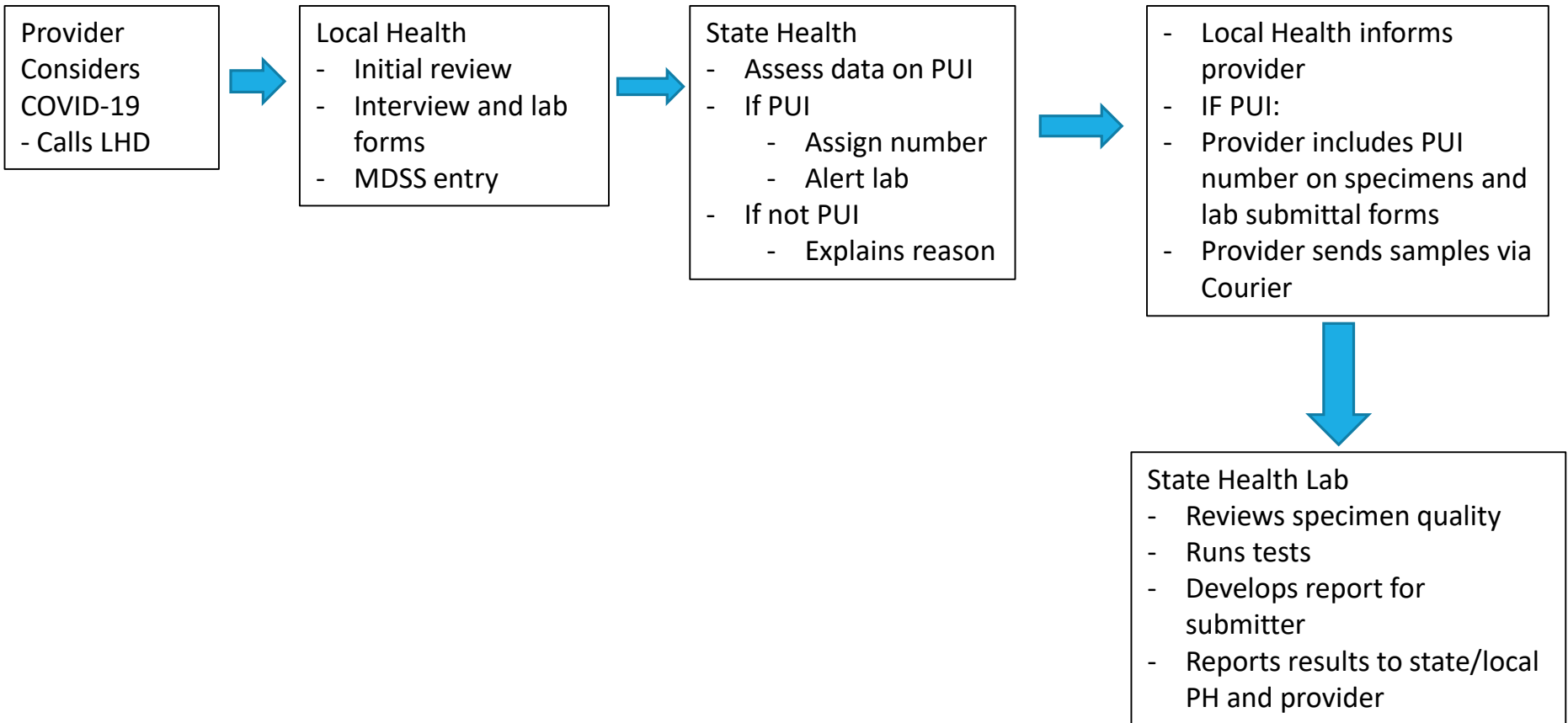
- 1) Any persons, including healthcare workers, who have had close contact with a laboratory-confirmed COVID-19 patient within 14 days of symptom onset
- 2) A history of travel from affected geographic areas within 14 days of symptom onset
 - Updated list of affected geographic areas available under the heading “International Areas with Sustained (Ongoing) Transmission” at: <https://www.cdc.gov/coronavirus/2019-nCoV/hcp/clinical-criteria.html>

Phone Triage of Patients with Concerning History and Symptoms

Evaluate symptoms, travel history, and history of close contact with ill persons:

- If at home and stable, patient should remain at home, be provided with, and adhere to home care instructions until further directives are given regarding potential testing.
- If urgent medical care is needed, patient should wear a surgical mask when exiting their home and notify provider's office/facility so infection control procedures can be implemented.

Public Health Coordination Around Cases



Home Care Instructions

People with confirmed or suspected COVID-19 (including persons under investigation) who do not need to be hospitalized

and

People with confirmed COVID-19 who were hospitalized and determined to be medically stable to go home

1. Stay at home except to get medical care
2. Call ahead before visiting doctor
3. Separate from other people or animals at home
4. Wear a facemask
5. Cover cough and sneezes
6. Clean hands often
7. Avoid sharing personal household items
8. Clean all “high touch” surfaces everyday
9. Monitor symptoms and seek prompt attention if illness is worsening

Source: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-prevent-spread.html>

Is Your Clinic Ready?

Have a plan in place:

- Consider signage at front desk
- Triage & Screening protocols
- Travel history at check-in
- PPE
- Safe, culturally sensitive environment

4 P's

- ***Plan***
- ***Prepare***
- ***Practice***
- ***PPE***

More Information:

Healthcare Professional Preparedness Checklist For Transport and Arrival of Patients With Confirmed or Possible COVID-19

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/hcp-personnel-checklist.html>

Interim Infection Prevention and Control Recommendations for Patients with Confirmed Coronavirus Disease 2019 (COVID-19) or Persons Under Investigation for COVID-19 in Healthcare Settings

<https://www.cdc.gov/coronavirus/2019-nCoV/hcp/infection-control.html>

Healthcare Infection Prevention and Control FAQs for COVID-19

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-prevention-control-faq.html>

Evaluation of Patients with Concerning History and Symptoms

- Ensure that patients with symptoms of suspected COVID-19 or other respiratory infection (e.g., fever, cough) are not allowed to wait among other patients seeking care.
- Identify a separate, well-ventilated space that allows waiting patients to be separated by 6 or more feet, with easy access to respiratory hygiene supplies.
- In some settings, medically-stable patients might opt to wait in a personal vehicle or outside the healthcare facility where they can be contacted by mobile phone when it is their turn to be evaluated.

Source: https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fhcp%2Finfection-control.html

Evaluation of Patients with Concerning History and Symptoms

GOAL: Mask patient & staff within 2 minutes.



Provider mask/
N95 Respirator

Patient mask



Evaluation of Patients with Concerning History and Symptoms

Place patient in an airborne infection isolation room (AIIR) aka negative pressure isolation room

IF NOT AVAILABLE.....

Place the patient in a private room, ensure that the facemask remains on, and keep the door closed.

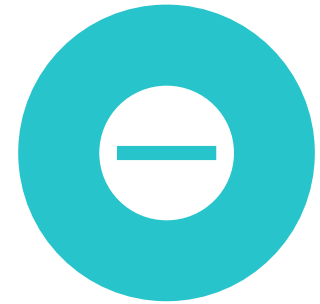
- Ideally, a room where exhaust is not recirculated without HEPA filtration.

Source: https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fhcp%2Finfection-control.html

Airborne Isolation Infection Rooms (AIIR)



A MINIMUM OF 6 AIR CHANGES PER HOUR (12 AIR CHANGES PER HOUR ARE RECOMMENDED FOR NEW CONSTRUCTION OR RENOVATION).



ROOM DOORS SHOULD BE KEPT CLOSED EXCEPT WHEN ENTERING OR LEAVING THE ROOM, AND ENTRY AND EXIT SHOULD BE MINIMIZED.



FACILITIES SHOULD MONITOR AND DOCUMENT THE PROPER NEGATIVE-PRESSURE FUNCTION OF THESE ROOMS.



ONLY ESSENTIAL PERSONNEL SHOULD ENTER THE ROOM.

Appropriate PPE

Personal Protective Equipment (PPE):

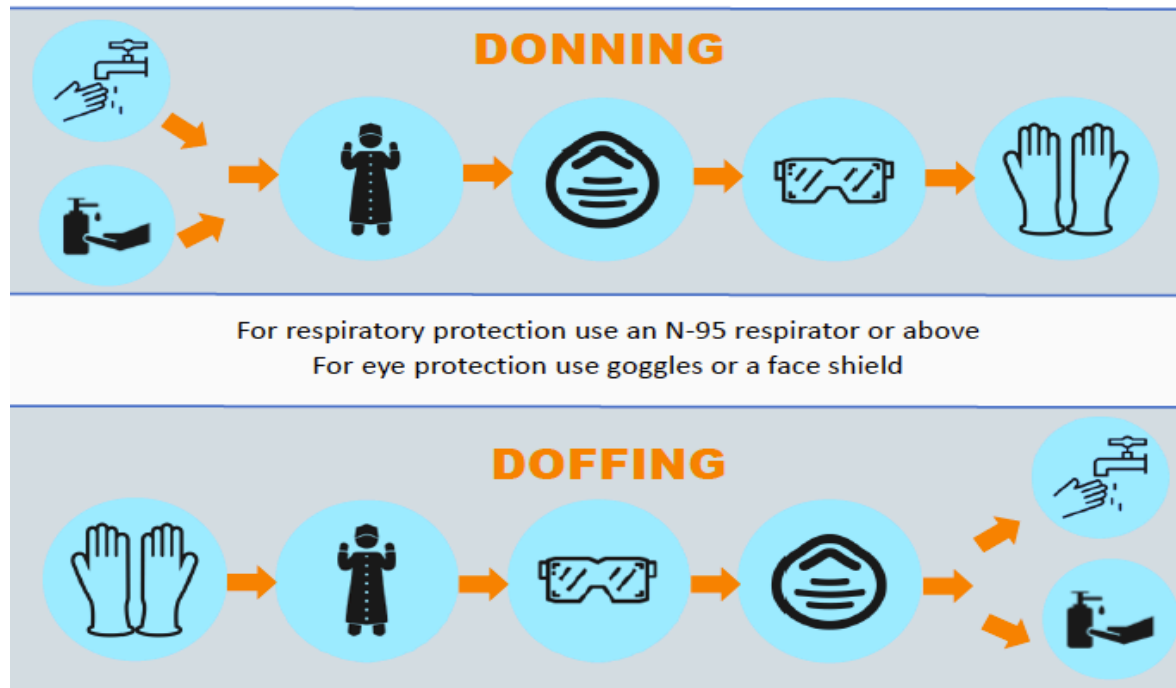
- Standard precautions
- Contact precautions (gloves, gowns)
- Eye protection (goggles or face shield)
- Airborne precautions (fit-tested N95 mask or PAPR or better)



Source: https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fhcp%2Finfection-control.html

Appropriate PPE for COVID-19

Personal Protective Equipment For 2019-Novel Coronavirus



Source: <http://publichealth.lacounty.gov/acd/docs/CoVPPEPoster.pdf>

Ensure Respirator Is Effective

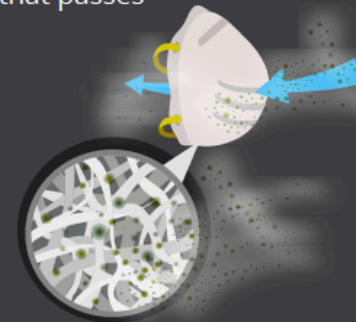
Three Key Factors Required for a Respirator to be Effective



- ① The respirator must be put on correctly and worn during the exposure.
- ② The respirator must fit snugly against the user's face to ensure that there are no gaps between the user's skin and respirator seal.



- ③ The respirator filter must capture more than 95% of the particles from the air that passes through it.



Source: <https://www.cdc.gov/niosh/nppt/pdfs/KeyFactorsRequiredResp01042018-508.pdf>

*If your respirator has a metal bar or a molded nose cushion, it should rest over the nose and not the chin area.

Reminders

Remove all PPE before exiting the patient room EXCEPT a respirator, if worn.



Wash hands with soap and water for at least 20 seconds or use an 60-95% alcohol-based hand sanitizer (ABHS)

**Before & after
all patient
contact**

**Contact with
potentially
infectious
material**

**Before donning
and doffing
PPE, including
gloves**

Aerosol Generating Procedures

Procedures that are likely to induce coughing (e.g., sputum induction, open suctioning of airways) should be performed cautiously and avoided if possible.

If performed:

- Should take place in an AIIR
- Essential healthcare personnel with appropriate respiratory protection

Promptly & properly clean and disinfect procedure room surfaces

Respiratory Specimen Collection

MDHHS Bureau of Laboratories (BOL) can now test specimens for the SARS-CoV-2 virus:

- Upper and lower respiratory specimens
 - Nasopharyngeal swab (NP)
 - Oropharyngeal swab (OP)
 - Sputum
- Transported to BOL in an appropriate transport media (VTM, UTM, M4, etc)
- Positive results at BOL are considered **PRESUMPTIVE**
 - CDC will perform **CONFIRMATORY** testing of specimens

Respiratory Specimen Collection

Please Note:

- Coordination by the MDHHS Communicable Diseases (CD) Division is required for samples to be tested by the BOL
- CDC may request additional specimens
- Providers should have **ALREADY PERFORMED** a respiratory panel (RPAN)
- Results and follow-up recommendations will be provided by the local health department (LHD) and the MDHHS CD Division

Respiratory Specimen Collection

- Collecting diagnostic respiratory specimens (e.g., nasopharyngeal swab) are likely to induce coughing or sneezing.
- Ideally, should be limited to the patient and the healthcare provider obtaining the specimen.
- Standard, Contact, and Airborne Precautions, including the use of eye protection.
- 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.

Source: https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fhcp%2Finfection-control.html

Michigan Person Under Investigation (PUI)/ Case Report Form

Michigan.gov

MDHHS HOME Q SEARCH

Coronavirus

RESOURCES ▼ PRESS RELEASES

CORONAVIRUS / RESOURCES / FOR HEALTH PROFESSIONALS

For Health Professionals

- [Michigan 2019 Novel Coronavirus \(COVID-19\) Person Under Investigation \(PUI\) and Case Report Form](#)
- [Michigan EMS Coronavirus Disease \(COVID-19\) Response](#)
- [Center for the Study of Traumatic Stress Coronavirus and Emerging Infectious Disease Outbreak Response Fact Sheets](#)
- [CDC Resources for Health Care Facilities](#)
 - [Steps Healthcare Facilities Can Take](#)
 - [Interim Guidance for Healthcare Facilities](#)
 - [Strategies to Prevent the Spread of COVID-19 in Long-Term Care Facilities](#)
 - [Updated CDC N95 mask guidance](#)



**CLICK
HERE for
PUI/Case
Report
Form**



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Source: michigan.gov/coronavirus

Environmental Infection Control

- Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly.
- Management of laundry, food service utensils, and medical waste should also be performed in accordance with routine procedures.
- Standard practices using an EPA-registered, hospital-grade disinfectant with an emerging viral pathogens claim are recommended for use against SARS-CoV-2.
- If there are no available EPA-registered products with an approved viral pathogen claim, products with label claims against human coronavirus should be used in accordance with label instructions.

Environmental Infection Control

PPE for Staff Performing Environmental Cleaning of PUI Rooms

- Hospitalized patients
 - Full PPE
 - Contact, airborne, eye protection
- Discharged patients
 - Delay entry into the room
 - PPE
 - Gowns, gloves, mask & eye protection if splashes possible



Environmental Infection Control

- **For Terminal Cleaning:**

- Should delay entry into the room until a sufficient time has elapsed for enough air exchanges to remove potentially infectious particles
- Typical air exchanges per hour (ACH) are indicated in the colored box
- If the ACH is unknown, then wait at least 2 hours before entering the room prior to cleaning

ACH*	Time (min) required for removal of 99.9% efficiency
2	207
4	104
6	69
8	52
10	41
12	35
15	28
20	21

Source: <https://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html#tableb1>
Source: https://www.cdc.gov/coronavirus/2019-ncov/infection-control/infection-prevention-control-faq.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fhcp%2Finfection-prevention-control-faq.html

Discontinuation of Transmission-Based Precautions and Discharge

Interim Guidance for Discontinuation of Transmission-Based Precautions and Disposition of Hospitalized Patients with COVID-19

Summary Page

Who this is for: Healthcare providers and public health officials managing patients with coronavirus disease (COVID-19).

What this is for: To help prevent the spread of COVID-19 in healthcare facilities.

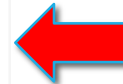
How to use: Reference to guide healthcare staff and public health officials regarding discontinuing transmission-based precautions and discharging hospitalized patients with COVID-19.

Summary of Recent Changes

Revisions were made on February 11, 2020, to use of laboratory testing results:

- Negative rRT-PCR results from at least 2 consecutive sets of nasopharyngeal and throat swabs collected at least 24 hours apart from a patient with COVID-19 are needed before discontinuing Transmission-Based Precautions is considered. A total of four negative specimens are needed to meet this requirement.

DO NOT discontinue precautions or discharge COVID-19 patients without consultation and approval from MDHHS and the LHD



Source: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-hospitalized-patients.html>

Questions

To receive healthcare related updates on COVID-19 please register for an account on the Michigan Health Alert Network (MIHAN).

MIHAN is a key resource for clinicians tasked with infection prevention, emergency preparedness, mitigation and response. It is a primary method of communication from Michigan Department of Health and Human Services and local health departments to healthcare providers.

To register, visit the [MIHAN website](#) and click “Register Now” at the bottom of the page.

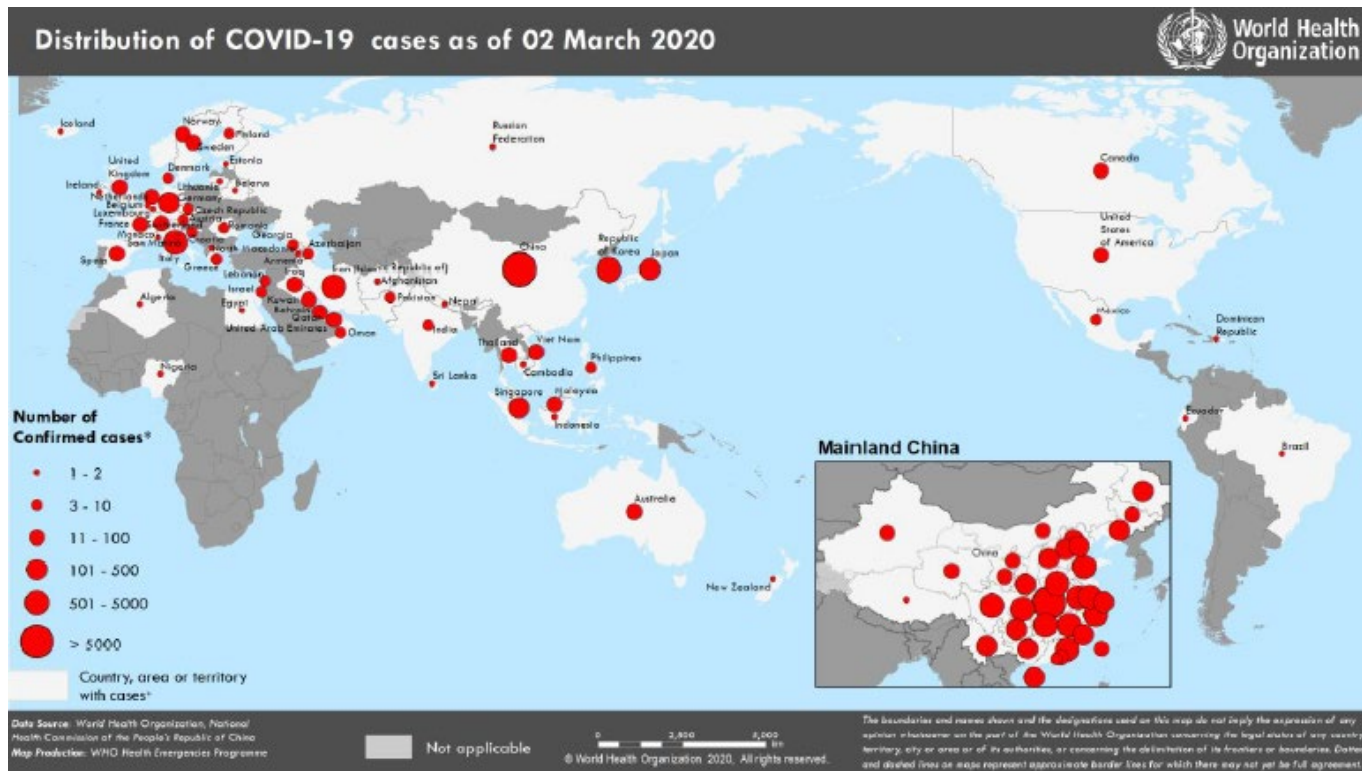
Questions about this webinar: checcdeptcoor@Michigan.gov

ADDITIONAL
LINKS AND
USEFUL
INFORMATION

Appendix

WHO COVID-19 Daily Situation Report

March 2, 2020



SITUATION IN NUMBERS total and new cases in last 24 hours

Globally

88 948 confirmed (1804 new)

China

80 174 confirmed (206 new)
2915 deaths (42 new)

Outside of China

8774 confirmed (1598 new)
64 countries (6 new)
128 deaths (24 new)

WHO RISK ASSESSMENT

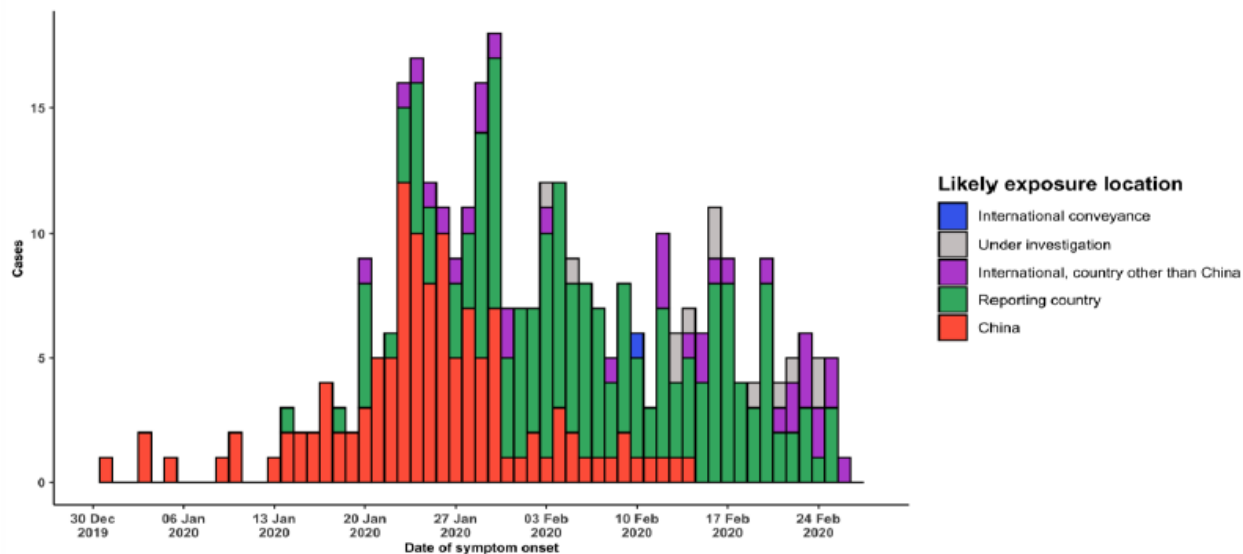
China	Very High
Regional Level	Very High
Global Level	Very High

Source: https://www.who.int/docs/default-source/coronaviruse/20200302-sitrep-42-covid-19.pdf?sfvrsn=d863e045_2

WHO COVID-19 Daily Situation Report

February 27, 2020

Figure 3. Epidemic curve of COVID-19 cases (n=338) identified outside of China, by date of onset of symptoms and likely exposure location, 27 February 2020



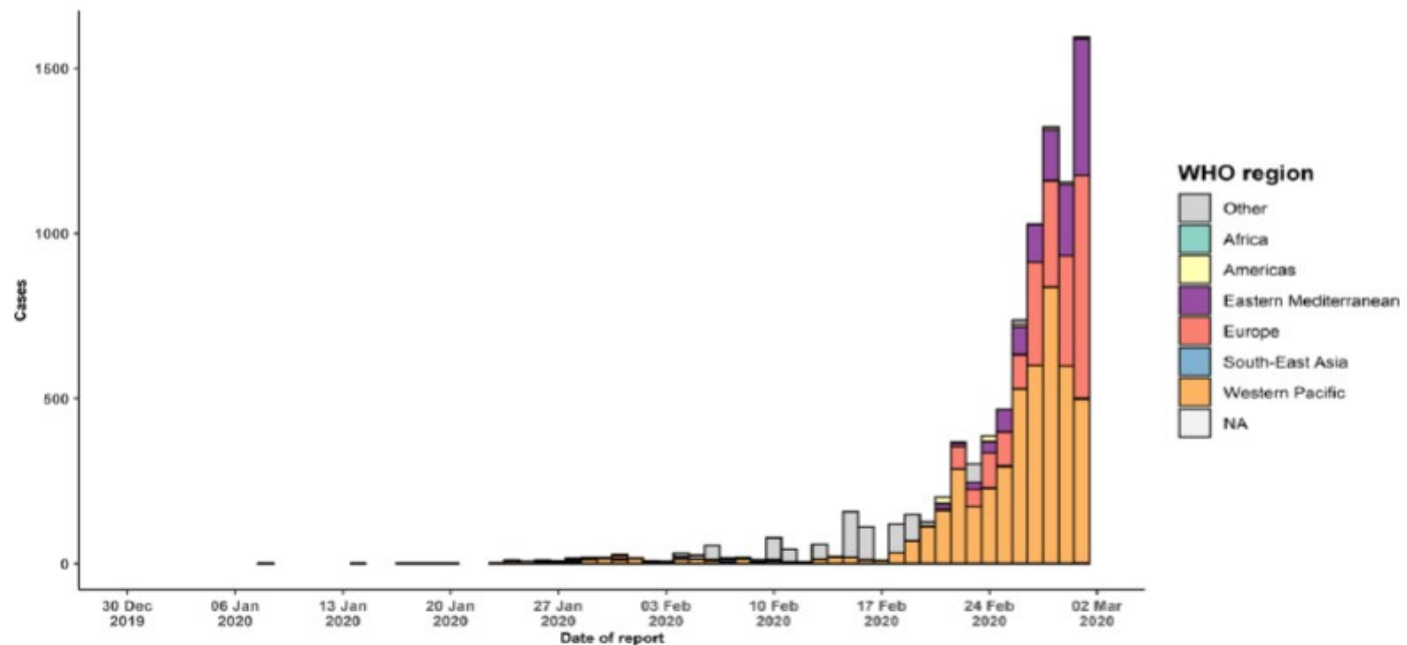
Note for figure 2: Of the 3664 cases reported outside China, 92 were detected while apparently asymptomatic. For the remaining 3572 cases, information on date of onset is available only for the 338 cases presented in the epidemiologic curve.

Source: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200224-sitrep-35-covid-19.pdf?sfvrsn=1ac4218d_2

WHO COVID-19 Daily Situation Report

March 2, 2020

Figure 2. Epidemic curve of confirmed COVID-19 cases reported outside of China, by date of report and WHO region with complete days of reporting through 01 March 2020



Source: https://www.who.int/docs/default-source/coronaviruse/20200302-sitrep-42-covid-19.pdf?sfvrsn=d863e045_2

Previous Lessons Learned?



Novel Coronavirus: A Physician's Guide (February 13, 2020 Update)



Lessons Learned:

- Spread of SARS and MERS between people has generally occurred between close contacts, mainly via respiratory droplets (coughs, sneezes).
- Testing is performed based on a patient's clinical history and presentation, with rRT-PCR testing of respiratory and serum specimens.
- An outbreak such as SARS can be fully contained through coordinated infection control efforts.

Source: Novel Coronavirus: A Physician's Guide (February 13, 2020 Update).
https://assets.acponline.org/coronavirus/scormcontent/?&_ga=2.247857220.238474492.1582497482-260997361.1582497482#/lessons/kF9uSyd1HnqP_4KpUbfz72nZWl6kDj6

JAMA | **Original Investigation** | **CARING FOR THE CRITICALLY ILL PATIENT**

Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus–Infected Pneumonia in Wuhan, China

Dawei Wang, MD; Bo Hu, MD; Chang Hu, MD; Fangfang Zhu, MD; Xing Liu, MD; Jing Zhang, MD; Binbin Wang, MD; Hui Xiang, MD; Zhenshun Cheng, MD; Yong Xiong, MD; Yan Zhao, MD; Yirong Li, MD; Xinghuan Wang, MD; Zhiyong Peng, MD

Retrospective, single center case series of the 138 consecutive hospitalized patients with confirmed COVID-19 at Zhongnan Hospital in Wuhan, China from January 1 – January 28, 2020

KEY QUESTION: What are the clinical characteristics of hospitalized patients with COVID-19 in Wuhan China?

Source: JAMA Published online February 7, 2020 JAMA. doi:10.1001/jama.2020.1585

Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China

Dawei Wang, MD; Bo Hu, MD; Chang Hu, MD; Fangfang Zhu, MD; Xing Liu, MD; Jing Zhang, MD; Binbin Wang, MD; Hui Xiang, MD; Zhenshun Cheng, MD; Yong Xiong, MD; Yan Zhao, MD; Yirong Li, MD; Xinghuan Wang, MD; Zhiyong Peng, MD

Signs and symptoms	
Fever	136 (98.6)
Fatigue	96 (69.6)
Dry cough	82 (59.4)
Anorexia	55 (39.9)
Myalgia	48 (34.8)
Dyspnea	43 (31.2)
Expectoration	37 (26.8)

Source: JAMA Published online February 7, 2020 JAMA. doi:10.1001/jama.2020.1585

Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China

Dawei Wang, MD; Bo Hu, MD; Chang Hu, MD; Fangfang Zhu, MD; Xing Liu, MD; Jing Zhang, MD; Binbin Wang, MD; Hui Xiang, MD; Zhenshun Cheng, MD; Yong Xiong, MD; Yan Zhao, MD; Yirong Li, MD; Xinghuan Wang, MD; Zhiyong Peng, MD

Median time from symptom onset to:

- Dyspnea → 5 days (IQR: 1 -10 days)
- Hospitalization → 7 days
- ARDS → 8 days

Clinical Outcomes:

- 26% required ICU
- 16% developed ARDS
- 4% died

Median length of hospital stay:

- 10 days

Source: JAMA Published online February 7, 2020 JAMA. doi:10.1001/jama.2020.1585

VIEWPOINT

Characteristics and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China Summary of a Report of 72 314 Cases From the Chinese Center for Disease Control and Prevention

Largest case series of COVID-19 cases in mainland China through February 11, 2020

Box. Key Findings From the Chinese Center for Disease Control and Prevention Report

72 314 Cases (as of February 11, 2020)

- Confirmed cases: 44 672 (62%)
- Suspected cases: 16 186 (22%)
- Diagnosed cases: 10 567 (15%)
- Asymptomatic cases: 889 (1%)

Age distribution (N = 44 672)

- ≥80 years: 3% (1408 cases)
- 30-79 years: 87% (38 680 cases)
- 20-29 years: 8% (3619 cases)
- 10-19 years: 1% (549 cases)
- <10 years: 1% (416 cases)

Spectrum of disease (N = 44 415)

- Mild: 81% (36 160 cases)
- Severe: 14% (6168 cases)
- Critical: 5% (2087 cases)

Case-fatality rate

- 2.3% (1023 of 44 672 confirmed cases)
- 14.8% in patients aged ≥80 years (208 of 1408)
- 8.0% in patients aged 70-79 years (312 of 3918)
- 49.0% in critical cases (1023 of 2087)

Health care personnel infected

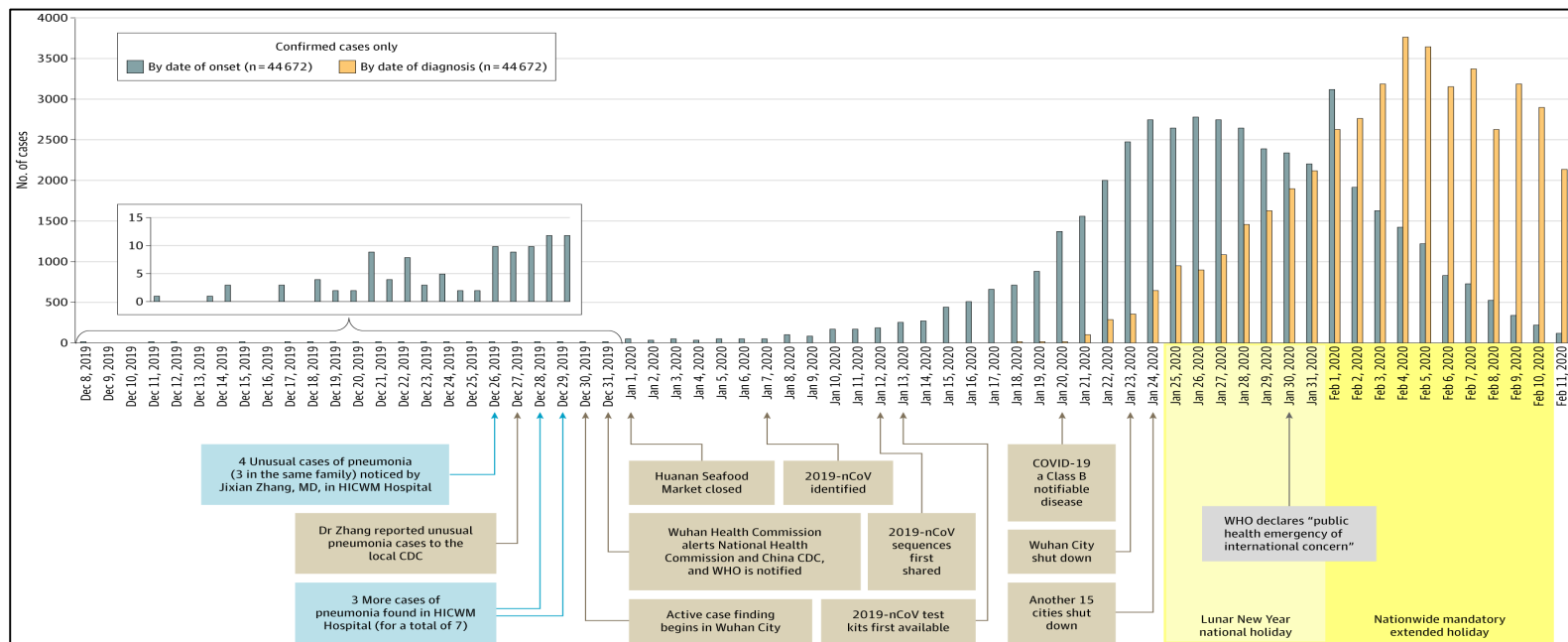
- 3.8% (1716 of 44 672)
- 63% in Wuhan (1080 of 1716)
- 14.8% cases classified as severe or critical (247 of 1668)
- 5 deaths

Source: JAMA. Published online February 24, 2020. doi:10.1001/jama.2020.2648

VIEWPOINT

Characteristics of and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China

Summary of a Report of 72 314 Cases From the Chinese Center for Disease Control and Prevention



Source: JAMA. Published online February 24, 2020. doi:10.1001/jama.2020.2648

Home Care Not Requiring Hospitalization

Refer to the following CDC guidance documents for more information:

Interim Guidance for Implementing Home Care of People Not Requiring Hospitalization for 2019 Novel Coronavirus (2019-nCoV)

https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-home-care.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fguidance-home-care.html

Interim Guidance for Preventing the Spread of Coronavirus Disease 2019 (COVID-19) in Homes and Residential Communities

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-prevent-spread.html>

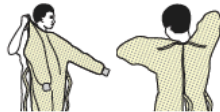
How to Properly Put On & Take Off PPE

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



4. GLOVES

- Extend to cover wrist of isolation gown



USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene

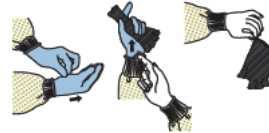


HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. Remove all PPE before exiting the patient room except a respirator, if worn. Remove the respirator after leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container



2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container



3. GOWN

- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Put gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container

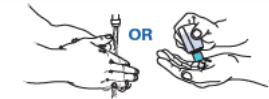


4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

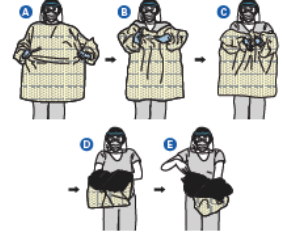


HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 2

Here is another way to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Remove all PPE before exiting the patient room except a respirator, if worn. Remove the respirator after leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GOWN AND GLOVES

- Gown front and sleeves and the outside of gloves are contaminated!
- If your hands get contaminated during gown or glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands
- While removing the gown, fold or roll the gown inside-out into a bundle
- As you are removing the gown, peel off your gloves at the same time, only touching the inside of the gloves and gown with your bare hands. Place the gown and gloves into a waste container



2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band and without touching the front of the goggles or face shield
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

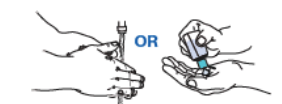


3. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



4. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE



Source: <https://www.cdc.gov/hai/pdfs/ppe/PPE-Sequence.pdf>

Environmental Infection Control

For more information, please refer to the CDC guidance documents below:

Healthcare Infection Prevention and Control FAQs for COVID-19

- <https://www.cdc.gov/coronavirus/2019-ncov/infection-control/infection-prevention-control-faq.html>

Interim Infection Prevention and Control Recommendations for Patients with Confirmed Coronavirus Disease 2019 (COVID-19) or Persons Under Investigation for COVID-19 in Healthcare Settings

- <https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html>

Strategies for Optimizing the Supply of N95 Respirators

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

Strategies to Prevent the Spread of COVID-19 in Long-Term Care Facilities (LTCF)

- <https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/prevent-spread-in-long-term-care-facilities.html>

Preparing for Community Transmission

Steps Healthcare Facilities Can Take Now to Prepare for Coronavirus Disease 2019 (COVID-19)

<https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/steps-to-prepare.html>

Interim Guidance for Healthcare Facilities: Preparing for Community Transmission of COVID-19 in the United States

<https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/guidance-hcf.html>

More Information

Due to the fluidity of this situation, please reference the resources listed below for the most up to date information

Michigan Department of Health
and Human Services (MDHHS)

Centers for Disease Control and
Prevention (CDC)

World Health Organization
(WHO)

www.michigan.gov/coronavirus

www.cdc.gov/coronavirus/2019-ncov/index.html

www.who.int/emergencies/diseases/novel-coronavirus-2019

More Information

How to find your local health department:

- Michigan Association for Local Public Health

<https://www.malphp.org/resources/directory>

- Centers for Disease Control and Prevention
Coronavirus Disease 2019 (COVID-19), What's New (Latest Guidance)

<https://www.cdc.gov/coronavirus/2019-ncov/whats-new-all.html>

Important Links For More Information

What Healthcare Personnel should know:

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/caring-for-patients.html>

Strategies for Optimizing the Supply of N95 Respirators: **Crisis/Alternate Strategies:** <https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/crisis-alternate-strategies.html>

Includes:

- Use of respirators beyond the manufacturer-designated shelf life for healthcare delivery
- Use of respirators approved under standards used in other countries that are similar to NIOSH-approved N95 respirators
- Limited re-use of N95 respirators for COVID-19 patients
- Use of additional respirators beyond the manufacturer-designated shelf life for healthcare delivery
- Prioritize the use of N95 respirators and facemasks by activity type
- When No Respirators are Left