

## *EMERGENCY PREPAREDNESS WEBINAR*

# Coronavirus (COVID-19) Preparedness and Response for Primary Care Providers



Thursday, February 20, 2020

**Neil Gupta, MD, MPH**

Chief, Epidemiology & Surveillance Branch  
Division of Viral Hepatitis  
Centers for Disease Control and Prevention



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NNCC provides expertise to support comprehensive, community-based primary care.

- Direct, nurse-led healthcare services
- Policy research and advocacy
- Training and technical assistance support



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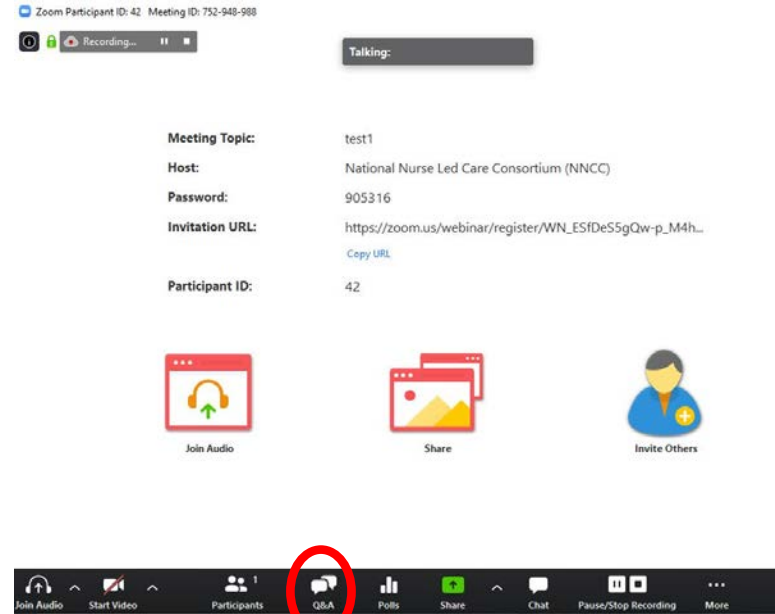
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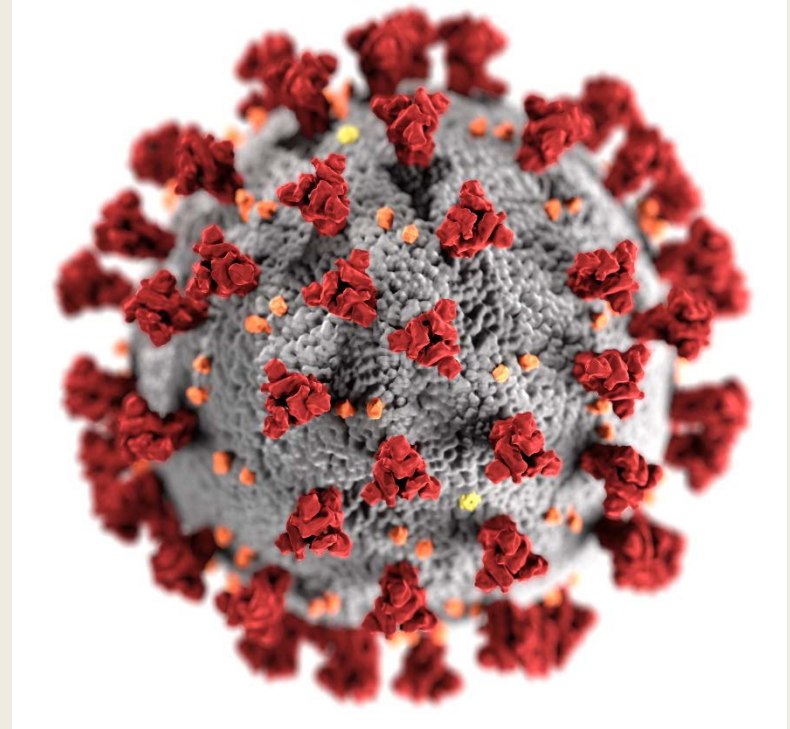


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## Coronavirus (COVID-19) Preparedness and Response for Primary Care Providers

Neil Gupta, MD, MPH  
CDC COVID-19 Response  
February 20, 2020



# Overview of Presentation

- Coronavirus Disease 2019 (COVID-19)
- Clinical Overview
- Identify, Isolate, and Inform
- Preventing Transmission
- Tools and Resources
- Questions



# Coronavirus Disease 2019 (COVID-19)





# Name Update: 2019-nCoV → COVID-19

- On February 11, 2020:
  - The International Committee on Taxonomy of Viruses, charged with naming new viruses, named the novel coronavirus for this outbreak to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)
    - The virus is related to SARS-CoV, however it is not the same virus.
  - The World Health Organization [announced](#) an official name for the illness caused by SARS-COV2. The new name is coronavirus disease 2019 (COVID-19)
- CDC will be updating our website and other CDC materials to reflect the updated name





# 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
- CDC is reporting confirmed COVID-19 cases in the US online at [www.cdc.gov/coronavirus/2019-ncov/cases-in-us.html](https://www.cdc.gov/coronavirus/2019-ncov/cases-in-us.html)



# COVID-19: Situation Overview

- As of February 19, 2020:
  - 28 international locations (in addition to the U.S.) have reported confirmed cases of SARS-CoV-2 infection
  - 15 infections reported in the U.S. in seven states
    - Most recent U.S. cases are people who recently returned from China on U.S. State Department chartered flights
  - 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

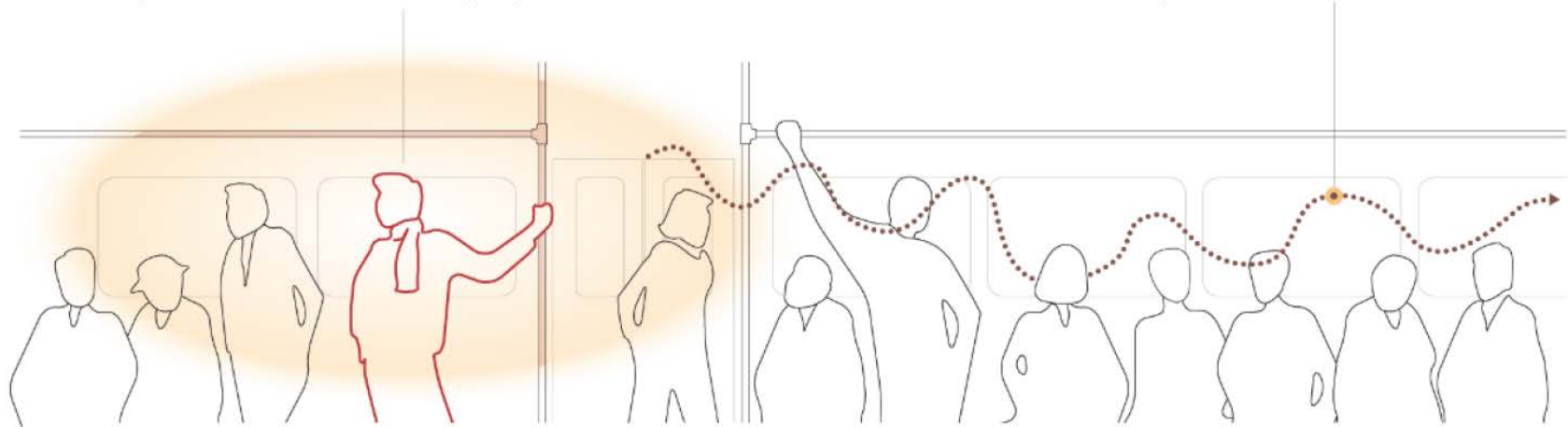


# Virus Characteristics

## How far viruses travel

Coronaviruses like the **Wuhan virus** can travel only about six feet from the infected person. It's unknown how long they live on surfaces.

Some other viruses, like **measles**, can travel up to 100 feet and stay alive on surfaces for hours.



# COVID-19: CDC Response

- CDC established a COVID-19 Incident Management System on January 7, 2020.
- The immediate risk of this new virus to the American public is believed to be low at this time.
- CDC has developed, released, and is socializing guidance in various areas for healthcare, public health and the public.
  - This includes topics such as how to care of patients, infection control, patient monitor and movement, hospital, community, schools, and business preparedness and response, conservation strategies for respirators
- Working closely with healthcare system (hospitals, clinics, pharmacies, telehealth) to develop solutions for surge to meet potential wider spread of disease.



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>

# COVID-19: CDC Response

- CDC is working with healthcare and industry partners to understand supply chain for PPE to adjust response plans for potential limited supplies.
  - CDC posted guidance<sup>1</sup> and strategies<sup>2</sup> based on current COVID-19 situation and availability of PPE
- Over the coming days and weeks, state and local public health departments will begin to test for COVID-19 in their laboratories.
- 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>

# Clinical Overview



# COVID-19: 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 (about 6 feet)
    - 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
  - People are thought to be most contagious when they are symptomatic.





# COVID-19: Clinical Presentation

- Limited case reports and case series describe the clinical presentation of patients with
- Incubation period estimated ~2-14 days
- Sign & Symptoms
  - Fever (83–98%)
  - Cough (46–82%)
  - Myalgia or fatigue (11–44%)
  - Shortness of breath (31%)
  - Nausea, vomiting and diarrhea (10% reported in one case series)



# COVID-19: Clinical Course

- Varies in severity from asymptomatic infection (1%), mild to moderate respiratory illness (80%) to severe (15%) or critical illness/ fatal disease
  - Nonspecific signs and symptoms
  - Fever may be intermittent or prolonged
- Potential for clinical deterioration during the second week of illness
- Hospitalized patients may require intensive care (23-33%)
  - Advanced organ support with endotracheal intubation and mechanical ventilation
  - Extracorporeal membrane oxygenation
- Fatality among hospitalized patients with pneumonia (4–15%)



# COVID-19: Risk Factors for Severe Disease

- Older adults
- One-third to one-half of reported patients had underlying medical comorbidities, including:
  - Diabetes
  - Hypertension
  - Cardiovascular disease



# COVID-19: Clinical Management and Treatment

- Clinical signs and symptoms may worsen with progression to lower respiratory tract disease in the second week of illness; patients should be monitored closely
- No specific treatment for COVID-19 is currently available
  - Prompt implementation of recommended infection prevention and control measures and supportive management of complications
- Corticosteroids should be avoided unless indicated for other reasons



# Identify, Isolate and Inform



# COVID-19: Identify Travel History and Exposures

- Identify patients with symptoms of respiratory illness as soon as possible and place in mask
- Obtain travel history as soon as possible
  - Has patient traveled to [areas of interest](#)
  - Contact with a confirmed case or another Person Under Investigation (PUI)



# COVID-19: Criteria to Guide Evaluation of PUI

- For any patient meeting criteria for evaluation for COVID-19, clinicians are encouraged to contact and collaborate with their state or local health department.
- For patients that are severely ill, evaluation for COVID-19 may be considered even if a known source of exposure has not been identified.

Clinical Features	&	Epidemiologic Risk
Fever <sup>1</sup> <b>or</b> 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 <sup>2</sup> with a laboratory-confirmed <sup>3,4</sup> 2019-nCoV patient within 14 days of symptom onset
Fever <sup>1</sup> <b>and</b> signs/symptoms of a lower respiratory illness (e.g., cough or shortness of breath)	AND	A history of travel from <b>Hubei Province</b> , China <sup>5</sup> within 14 days of symptom onset
Fever <sup>1</sup> <b>and</b> signs/symptoms of a lower respiratory illness (e.g., cough or shortness of breath) requiring hospitalization <sup>4</sup>	AND	A history of travel from mainland <b>China</b> <sup>5</sup> within 14 days of symptom onset





# COVID-19: Risk Factors for Severe Disease

## ■ Identify

### –Clinical features

- Fever
- Symptoms of lower respiratory illness

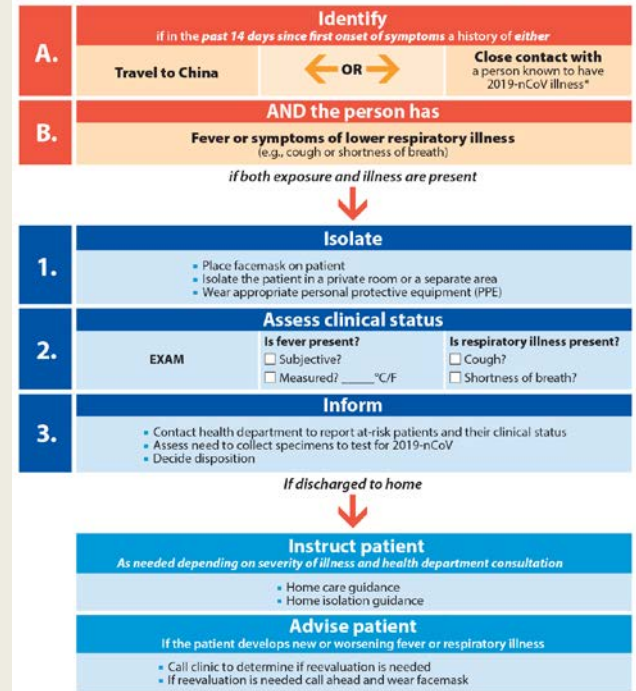
### –Epidemiological Risk Factors

- Travel to one of the areas of risk
- Close contact with a person known to have COVID-19



## Flowchart to Identify and Assess 2019 Novel Coronavirus

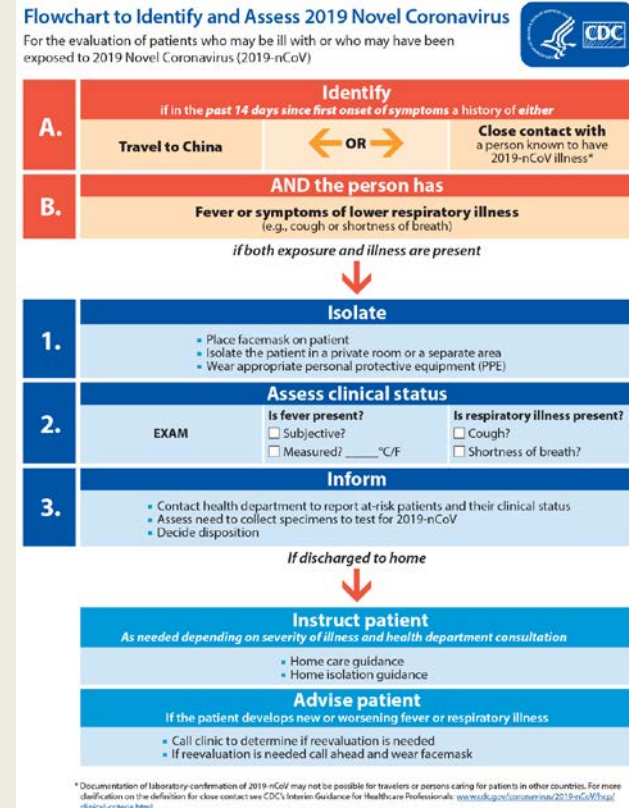
For the evaluation of patients who may be ill with or who may have been exposed to 2019 Novel Coronavirus (2019-nCoV)



\* Documentation of laboratory confirmation of 2019-nCoV may not be possible for travelers or persons caring for patients in other countries. For more details on the definition for close contact see CDC's Interim Guidance for Healthcare Professionals: [www.cdc.gov/coronavirus/2019-nCoV/healthcare-providers.html](https://www.cdc.gov/coronavirus/2019-nCoV/healthcare-providers.html)

# COVID-19: Risk Factors for Severe Disease

- Isolate
  - Place facemask on patient
  - Isolate the patient in a private room or separate area
  - Wear appropriate personal protective equipment (\*PPE)
- Assess clinical status
  - Fever present
  - Respiratory illness present
- Inform
  - Contact health department to report at-risk patients
  - Assess need to collect specimens to test
  - Decide disposition



# COVID-19: Risk Factors for Severe Disease

## ■ Instruct Patient

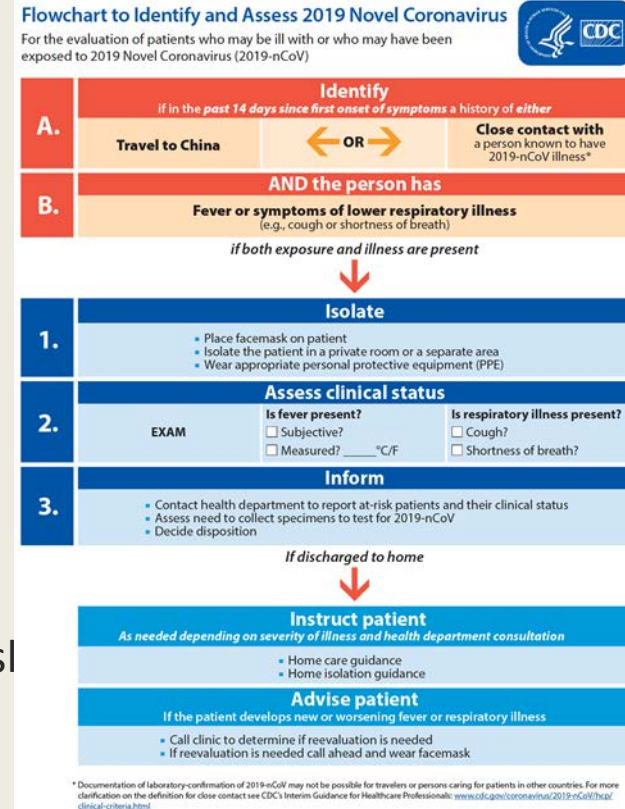
–As needed depending on severity of illness and health department consultation

- Home Care guidance
- Home isolations guidance

## ■ Advise Patient

–If the patient develops new or worsening fever or respiratory illness

- Call clinic to determine if reevaluation is needed
- If reevaluation is needed call ahead and wear facemask



# Preventing Transmission



# COVID-19: Preventing Transmission

- The U.S. healthcare system responds to infectious disease threats every day.\*
- CDC's recommended actions and strategies to stop the spread of COVID-19 are **not new**. They work and most are not reliant on PPE.
  - Established infection control strategies.
- CDC's goal—provide sound infection prevention control recommendations that protect healthcare workers AND are feasible and acceptable to implement.



\*For a summary of routine outpatient infection control guidance see:  
<https://www.cdc.gov/hai/settings/outpatient/outpatient-care-guidelines.html>

# COVID-19: IPC Guidance

- CDC's current guidelines are designed to prevent the spread of COVID-19 within healthcare facilities to HCP and other patients who may be exposed
- CDC's Interim Infection Prevention and Control Guidance for HCP caring for patients with confirmed or possible COVID-19 is available at <https://www.cdc.gov/coronavirus/2019-nCoV/hcp/infection-control.html>

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

Updated February 12, 2020



# COVID-19: Preventing Transmission

- Healthcare Personnel Preparedness Checklist for COVID-19
  - Key steps for HCP in preparation for transport and arrival of patients potentially infected with COVID-19
  - <https://www.cdc.gov/coronavirus/2019-ncov/hcp/hcp-personnel-checklist.html>

## Healthcare Personnel Preparedness Checklist for 2019-nCoV

*Front-line healthcare personnel in the United States should be prepared to evaluate patients for 2019 novel coronavirus (2019-nCoV). The following checklist highlights key steps for healthcare personnel in preparation for transport and arrival of patients potentially infected with 2019-nCoV.*

- Stay up to date on the latest information about signs and symptoms, diagnostic testing, and case definitions for 2019-nCoV disease (<https://www.cdc.gov/coronavirus/2019-ncov/summary.html>).
- Review your infection prevention and control policies and CDC infection control recommendations for 2019-nCoV (<https://www.cdc.gov/coronavirus/2019-ncov/infection-control.html>) for:
  - Assessment and triage of patients with acute respiratory symptoms
  - Patient placement
  - Implementation of Standard, Contact, and Airborne Precautions, including the use of eye protection
  - Visitor management and exclusion
  - Source control measures for patients (e.g., put facemask on suspect patients)
  - Requirements for performing aerosol generating procedures
- Be alert for patients who meet the persons under investigation (PUI) [<https://www.cdc.gov/coronavirus/2019-ncov/infection-control.html>] definition
- Know how to report a potential 2019-nCoV case or exposure to facility infection control leads and public health officials
- Know who, when, and how to seek evaluation by occupational health following an unprotected exposure (i.e., not wearing recommended PPE) to a suspected or confirmed nCoV patient
- Remain at home, and notify occupational health services, if you are ill
- Know how to contact and receive information from your state or local public health agency





# COVID-19: Preventing Transmission

- Healthcare personnel caring for patients with confirmed or possible 2019-nCoV should adhere to CDC recommendations for [infection prevention and control](#) (IPC)
  - Assess and triage patients with acute respiratory symptoms and risk factors to minimize chances of exposure
    - Place a facemask on the patient
    - Isolate them in an Airborne Infection Isolation Room (AIIR), if available
  - Use [Standard Precautions](#), [Contact Precautions](#), and [Airborne Precautions](#) and eye protection when caring for patients with confirmed or possible COVID-19
  - Perform hand hygiene



# COVID-19: Preventing Transmission

## Airborne Infection Isolation Rooms (AIIR)

- Evaluation of PUIs and confirmed COVID-19 should occur in either
  - AIIR
  - or
  - Examination room with the door closed
    - Room should ideally not have exhaust that is recirculated within the building without HEPA filtration.
- PUIs or patients with confirmed disease who require hospitalization should preferably be cared for in an AIIR.
  - If AIIR is not immediately available, consideration transferring patient to a facility with AIIR availability.



# COVID-19: Preventing Transmission

## ■ How You Can Protect Yourself

–Perform hand hygiene with alcohol-based hand rub

- before and after all patient contact
- after contact with potentially infectious material
- before putting on and upon removal of PPE, including gloves
- use soap and water if hands are visibly soiled

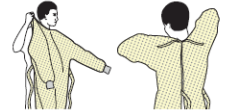
–Practice how to properly [don, use, and doff PPE](#)

### 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



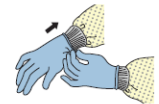
#### 3. GOGGLES OR FACE SHIELD

- 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



# COVID-19: Preventing Transmission

- **Environmental Cleaning and Disinfection**

- Routine cleaning and disinfection procedures are appropriate for COVID-19 in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.
- Products with [EPA-approved](#) emerging viral pathogens claims are recommended for use against SARS-CoV-2 (the virus that causes COVID-19).
- Management of laundry, food service utensils, and medical waste should also be performed in accordance with routine procedures.



# Strategies for Optimizing the Supply of N95 Respirators

## On This Page

[Engineering Controls](#)

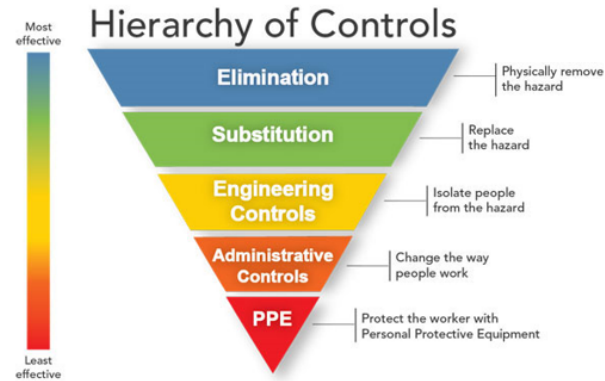
[Personal Protective Equipment and Respiratory Protection](#)

[Administrative Controls](#)

This document offers guidance on how to optimize supplies of N95 filtering facepiece respirators (commonly called “N95 respirators”) in healthcare settings in the face of potential ongoing 2019 Novel Coronavirus (2019-nCoV) transmission in the United States. The recommendations are intended for use by professionals who manage respiratory protection programs, occupational health services, and infection prevention programs in healthcare institutions to protect healthcare personnel (HCP) from job-related risks of exposure to infectious respiratory illnesses.

Controlling exposures to occupational hazards is a fundamental way to protect personnel. Traditionally, a [hierarchy of controls](#) approach has been used to achieve feasible and effective control. Some of the control measures may fall into multiple categories. It should also be emphasized that multiple control strategies can be implemented concurrently and or sequentially. This hierarchy can be represented as follows:

- Elimination
- Substitution
- Engineering controls
- Administrative controls
- Personal protective equipment (PPE)



# Tools and Resources



# COVID-19: Tools and Resources

- **Current Interim Guidance**
  - [Evaluating and Reporting Persons Under Investigation \(PUI\)](#)
  - [Healthcare Infection Control Guidance](#)
  - [Clinical Care Guidance](#)
  - [Home Care Guidance](#)
  - [Guidance for EMS](#)
  - [Healthcare Personnel with Potential Exposure Guidance](#)
- **Persons Under Investigation (PUIs)**
  - [Evaluating and Reporting PUI Guidance](#)
  - [Flowchart to Identify and Assess COVID-19](#)
  - [Reporting a PUI for COVID-19](#)
- **Clinical Care**
  - [Clinical Care Guidance](#)
  - [Disposition of Hospitalized Patients with COVID-2019](#)



# COVID-19: Tools and Resources (cont'd.)

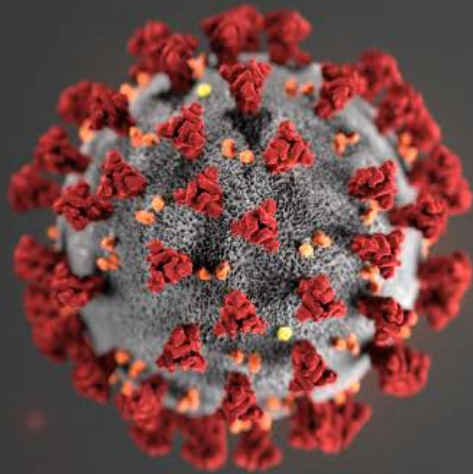
- **Infection Control**
  - [Infection Control](#)
  - [Frequently Asked Questions: Healthcare Infection Prevention and Control](#)
- **Supply of Personal Protective Equipment (PPE)**
  - [Healthcare Supply of Personal Protective Equipment](#)
  - [Strategies for Optimizing Supply of N95 Respirators](#)
  - [FAQ about Respirators](#)
- **Home Care**
  - [Implementing Home Care of People Not Requiring Hospitalization](#)
  - [Preventing COVID-19 from Spreading in Homes and Communities](#)
  - [Disposition of Non-Hospitalized Patients with COVID-19](#)





# Questions?





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



*Setting the Record Straight Webinar Series*

## **Part 1: The CMS Rule for Emergency Preparedness**

Wednesday, February 26, 2020 at 2:00 pm ET

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