

# Coronavirus Disease 2019 (COVID-19)

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

Update April 13, 2020

### Summary of Changes to the Guidance

Below are changes to the guidance as of April 13, 2020:

- To address asymptomatic and pre-symptomatic transmission, implement source control for everyone entering a healthcare facility (e.g., healthcare personnel, patients, visitors), regardless of symptoms.
  - This action is recommended to help prevent transmission from infected individuals who may or may not have symptoms of COVID-19.
  - Cloth face coverings are not considered PPE because their capability to protect healthcare personnel (HCP) is unknown. Facemasks, if available, should be reserved for HCP.
  - For visitors and patients, a cloth face covering may be appropriate. If a visitor or patient arrives to the healthcare facility without a cloth face covering, a facemask may be used for source control if supplies are available.
- Actively screen everyone for fever and symptoms of COVID-19 before they enter the healthcare facility.
- As community transmission intensifies within a region, healthcare facilities could consider foregoing contact tracing for exposures in a healthcare setting in favor of universal source control for HCP and screening for fever and symptoms before every shift.
- Added links to updated guidance for:
  - [Strategies to Optimize the Supply of PPE and other Equipment](#)
  - [Interim Guidance for Discontinuation of Transmission-Based Precautions and Disposition of Hospitalized Patients with COVID-19](#)
  - [Interim Guidance on Criteria for Return to Work for Healthcare Personnel with Confirmed or Suspected COVID-19](#).
  - [Strategies to Mitigate Staffing Shortages](#)

### Key Concepts in This Guidance

- **Reduce facility risk.** Cancel elective procedures, use telemedicine when possible, limit points of entry and manage visitors, screen everyone entering the facility for COVID-19 symptoms, implement source control for everyone entering the facility, regardless of symptoms.
- **Isolate symptomatic patients as soon as possible.** Set up separate, well-ventilated triage areas, place patients with suspected or confirmed COVID-19 in private rooms with the door closed and with private bathrooms (as possible). Reserve AIRs for patients with COVID-19 undergoing aerosol generating procedures and for care of patients with pathogens transmitted by the airborne route (e.g., tuberculosis, measles, varicella).
- **Protect healthcare personnel.** Emphasize hand hygiene, install barriers to limit contact with patients at triage, cohort patients with COVID-19, limit the numbers of staff providing their care, prioritize respirators for aerosol generating procedures.

### Background

This interim guidance has been updated based on currently available information about COVID-19 and the current situation in the United States, which includes community transmission, infections identified in healthcare personnel (HCP), and shortages of facemasks, N95 filtering facepiece respirators (FFRs) (commonly known as N95 respirators), eye protection, gloves, and gowns.

**Mode of transmission:** Current data suggest person-to-person transmission most commonly happens during close exposure to a person infected with the virus that causes COVID-19, primarily via respiratory droplets produced when the infected person speaks, coughs, or sneezes. Droplets can land in the mouths, noses, or eyes of people who are nearby or possibly be inhaled into the lungs of those within close proximity. Transmission also might occur through contact with contaminated surfaces followed by self-delivery to the eyes, nose, or mouth. The contribution of small respirable particles, sometimes called aerosols or droplet nuclei, to close proximity transmission is currently uncertain. However, airborne transmission from person-to-person over long distances is unlikely. Recent [experience with outbreaks in nursing homes](#) has reinforced that residents with COVID-19 frequently do not report typical symptoms such as fever or respiratory symptoms; some may not report any symptoms. Unrecognized asymptomatic and pre-symptomatic infections likely contribute to transmission in these and other healthcare settings. Source control, which involves having the infected person wear a cloth face covering or facemask over their mouth and nose to contain their respiratory secretions, might help reduce the risk of transmission of SARS CoV-2 from both symptomatic and asymptomatic people.




This guidance is applicable to all U.S. healthcare settings. This guidance is not intended for non-healthcare settings (e.g., schools) OR for persons outside of healthcare settings. For recommendations regarding clinical management, air or ground medical transport, or laboratory settings, refer to the main CDC [COVID-19 website](#).

**Shortage of personal protective equipment:** Controlling exposures to sources of occupational infections is a fundamental method of protecting HCP. Traditionally, a hierarchy of controls has been used as a means of determining how to implement feasible and effective control solutions. The hierarchy ranks controls according to their reliability and effectiveness and includes engineering controls, administrative controls, and ends with personal protective equipment (PPE). PPE is the least effective control because it involves a high level of worker involvement and is highly dependent on proper fit and correct, consistent use.

Major distributors in the United States have reported shortages of PPE, including N95 respirators, facemasks, eye protection, gowns, and gloves. Healthcare facilities are responsible for protecting their HCP from exposure to pathogens, including by providing appropriate PPE.

In times of shortages, alternatives to N95s should be considered, including powered air-purifying respirators (PAPRs), other classes of disposable FFRs, elastomeric half-mask, and full facepiece air-purifying respirators where feasible. Special care should be taken to ensure that respirators are reserved for situations where respiratory protection is most important, such as performance of aerosol generating procedures on patients with suspected or confirmed COVID-19 or provision of care to patients with other infections for which respiratory protection is strongly indicated (e.g., tuberculosis, measles, varicella).

The anticipated timeline for return to routine levels of PPE is not yet known. Information about [strategies to optimize the current supply of N95 respirators](#), including the use of devices that provide higher levels of respiratory protection (e.g., powered air-purifying respirators [PAPRs]) when N95s are in limited supply and a [companion summary list](#) to help healthcare facilities prioritize the implementation of the strategies, is available. [Strategies to optimize the supply of other PPE and equipment](#), including tools to calculate the burn rate of PPE are also available.

**Capacity across the healthcare continuum:** Use of N95 or higher-level respirators are recommended for HCP who have been medically cleared, trained, and fit tested, in the context of a facility's [respiratory protection program](#) . However, the majority of nursing homes and outpatient clinics, including hemodialysis facilities, do not have respiratory protection programs nor have they fit tested HCP, making use of respirators currently unachievable. Without an alternative, this can lead to transfer of patients with known or suspected COVID-19 to another facility (e.g., acute care hospital) for evaluation and care. In areas with community transmission, acute care facilities could be quickly overwhelmed by transfers of patients who have only mild illness and do not require hospitalization. To address potential for an increased number of patients seeking healthcare, guidance for establishing [Alternate Care Sites](#)   has been created.

Many of the recommendations described in this guidance (e.g., triage procedures, source control) should already be part of an infection control program designed to prevent transmission of seasonal respiratory infections. As it might be challenging to distinguish COVID-19 from other respiratory infections, interventions will need to be applied broadly and not limited to patients with confirmed COVID-19.

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## Definitions:

**Healthcare Personnel (HCP):** HCP include, but are not limited to, emergency medical service personnel, nurses, nursing assistants, physicians, technicians, therapists, phlebotomists, pharmacists, students and trainees, contractual staff not employed by the healthcare facility, and persons not directly involved in patient care, but who could be exposed to infectious agents that can be transmitted in the healthcare setting (e.g., clerical, dietary, environmental services, laundry, security, engineering and facilities management, administrative, billing, and volunteer personnel).

**Cloth face covering:** Textile (cloth) covers that are intended to keep the person wearing one from spreading respiratory secretions when talking, sneezing, or coughing. They are not PPE and it is uncertain whether cloth face coverings protect the wearer. Guidance on design, use, and maintenance of cloth face coverings is available.

**Facemask:** Facemasks are PPE and are often referred to as surgical masks or procedure masks. Use facemasks according to product labeling and local, state, and federal requirements. FDA-cleared surgical masks are designed to protect against splashes and sprays and are prioritized for use when such exposures are anticipated, including surgical procedures. Facemasks that are not regulated by FDA, such as some procedure masks, which are typically used for isolation purposes, may not provide protection against splashes and sprays.

**Respirator:** A respirator is a personal protective device that is worn on the face, covers at least the nose and mouth, and is used to reduce the wearer's risk of inhaling hazardous airborne particles (including dust particles and infectious agents), gases, or vapors. Respirators are certified by the CDC/NIOSH, including those intended for use in healthcare. Refer to the Appendix for a summary of different types of respirators.

# Recommendations

## 1. Minimize Chance for Exposures

Ensure facility policies and practices are in place to minimize exposures to respiratory pathogens including SARS-CoV-2, the virus that causes COVID-19. Measures should be implemented before patient arrival, upon arrival, throughout the duration of the patient's visit, and until the patient's room is cleaned and disinfected. It is particularly important to protect individuals at increased risk for adverse outcomes from COVID-19 (e.g., older individuals with comorbid conditions), including HCP who are in a recognized risk category.

- **Universal Source Control**

Continued community transmission has increased the number of individuals potentially exposed to and infectious with SARS-CoV-2. Fever and symptom screening have proven to be relatively ineffective in identifying all infected individuals, including HCP. Symptom screening also will not identify individuals who are infected but otherwise asymptomatic or pre-symptomatic; additional interventions are needed to limit the unrecognized introduction of SARS-CoV-2 into healthcare settings by these individuals. As part of aggressive source control measures, healthcare facilities should consider implementing policies requiring everyone entering the facility to wear a cloth face covering (if tolerated) while in the building, regardless of symptoms. This approach is consistent with a [recommendation to the general public](#) advising them to wear a cloth face covering whenever they must leave their home.

- **Patient and Visitors**

Patients and visitors should, ideally, be wearing their own cloth face covering upon arrival to the facility. If not, they should be offered a facemask or cloth face covering as supplies allow, which should be worn while they are in the facility (if tolerated). They should also be instructed that if they must touch or adjust their cloth face covering they should perform hand hygiene immediately before and after. Facemasks and cloth face coverings should not be placed on young children under age 2, anyone who has trouble breathing, or anyone who is unconscious, incapacitated or otherwise unable to remove the mask without assistance. Patients may remove their cloth face covering when in their rooms but should put them back on when leaving their room or when others (e.g., HCP, visitors) enter the room. Screening for symptoms and appropriate triage, evaluation, and isolation of individuals who report symptoms should still occur.

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- **Healthcare Personnel**

As part of source control efforts, HCP should wear a facemask at all times while they are in the healthcare facility. When available, facemasks are generally preferred over cloth face coverings for HCP as facemasks offer both source control and protection for the wearer against exposure to splashes and sprays of infectious material from others. **If there are anticipated shortages of facemasks, facemasks should be prioritized for HCP and then for patients with symptoms of COVID-19 (as supply allows). Cloth face coverings should NOT be worn instead of a respirator or facemask if more than source control is required.**

Some HCP whose job duties do not require PPE (e.g., clerical personnel) might continue to wear their cloth face covering for source control while in the healthcare facility. Other HCP (e.g., nurses, physicians) might wear their cloth face covering for part of the day when not engaged in direct patient care activities, only switching to a respirator or facemask when PPE is required. To avoid risking self-contamination, HCP should consider continuing to wear their respirator or facemask ([extended use](#)) instead of intermittently switching back to their cloth face covering. Of note, N95s with an exhaust valve might not provide source control. HCP should remove their respirator or facemask and put on their cloth face covering when leaving the facility at the end of their shift. They should also be instructed that if they must touch or adjust their facemask or cloth face covering they should perform hand hygiene immediately before and after.


HCP should have received job-specific training on PPE and demonstrated competency with selection and proper use (e.g., putting on and removing without self-contamination).

Because cloth face coverings can become saturated with respiratory secretions, care should be taken to prevent self-contamination. They should be changed if they become soiled, damp, or hard to breathe through, laundered regularly (e.g., daily and when soiled), and, hand hygiene should be performed immediately before and after any contact with the cloth face covering. Facilities should also provide training about when, how, and where cloth face coverings can be used (e.g., frequency of laundering, guidance on when to replace, circumstances when they can be worn in the facility, importance of hand hygiene to prevent contamination).

- **Before Arrival**

- When scheduling appointments for routine medical care (e.g., annual physical, elective surgery), instruct patients to call ahead and discuss the need to reschedule their appointment if they develop fever or symptoms of COVID-19 on the day they are scheduled to be seen. Advise them that they should put on their own cloth face covering, regardless of symptoms, before entering the facility.
- When scheduling appointments for patients requesting evaluation for possible COVID-19, use nurse-directed triage protocols to determine if an appointment is necessary or if the patient can be managed from home.
  - If the patient must come in for an appointment, instruct them to call beforehand to inform triage personnel that they have symptoms of COVID-19 and to take appropriate preventive actions (e.g., follow triage procedures, put on their own cloth face covering prior to entry and throughout their visit or, if a cloth face covering cannot be tolerated, hold a tissue against their mouth and nose to contain respiratory secretions).
- If a patient is arriving via transport by [emergency medical services \(EMS\)](#), EMS personnel should contact the receiving emergency department (ED) or healthcare facility and follow previously agreed upon local or regional transport protocols. This will allow the healthcare facility to prepare for receipt of the patient.

- **Upon Arrival and During the Visit**

- Limit and monitor points of entry to the facility.
- Advise patients and visitors entering the facility, regardless of symptoms, to put on a cloth face covering or facemask before entering the building and await screening for fever and symptoms of COVID-19.
- Take steps to ensure everyone adheres to respiratory hygiene and cough etiquette, hand hygiene, and all patients follow triage procedures throughout the duration of the visit.
  - Post [visual alerts](#)  (e.g., signs, posters) at the entrance and in strategic places (e.g., waiting areas, elevators, cafeterias) to provide instructions (in appropriate languages) about hand hygiene and respiratory hygiene and cough etiquette. Instructions should include wearing a cloth face covering or facemask for source control, and how and when to perform hand hygiene.
  - Provide supplies for respiratory hygiene and cough etiquette, including alcohol-based hand rub (ABHR) with 60-95% alcohol, tissues, and no-touch receptacles for disposal, at healthcare facility entrances, waiting rooms, and patient check-ins.
  - Install physical barriers (e.g., glass or plastic windows) at reception areas to limit close contact between triage personnel and potentially infectious patients.
  - Consider establishing triage stations outside the facility to screen individuals before they enter

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- Ensure rapid, safe triage and isolation of patients with symptoms of suspected COVID-19 or other respiratory infection (e.g., fever, cough).
  - Ensure triage personnel who will be taking vitals and assessing patients wear a respirator (or facemask if respirators are not available), eye protection, and gloves for the primary evaluation of all patients presenting for care until COVID-19 is deemed unlikely.
  - Prioritize triage of patients with symptoms of suspected COVID-19.
  - Triage personnel should have a supply of facemasks or cloth face coverings; these should be provided to all patients who are not wearing their own cloth face covering at check-in, assuming a sufficient supply exists.
  - Ensure that, at the time of patient check-in, all patients are asked about the presence of fever, symptoms of COVID-19, or contact with patients with possible COVID-19.
  - Isolate patients with symptoms of COVID-19 in an examination room with the door closed. If an examination room is not readily available ensure the patient is 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, 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.
- Incorporate questions about new onset of COVID-19 symptoms into daily assessments of all admitted patients. Monitor for and evaluate all new fevers and symptoms consistent with COVID-19 among patients. Place any patient with unexplained fever or symptoms of COVID-19 on appropriate Transmission-Based Precautions and evaluate.
- Prioritize patients with suspected COVID-19 who require admission to a hospital or congregate care setting (e.g., nursing home) for testing.
- **Additional Strategies to Minimize Chances for Exposure:**
  - Implement alternatives to face-to-face triage and visits.
  - Learn more about how healthcare facilities can [Prepare for Community Transmission](#)
  - Designate an area at the facility (e.g., an ancillary building or temporary structure) or identify a location in the area to be a “respiratory virus evaluation center” where patients with fever or COVID-19 symptoms can seek evaluation and care.
  - Cancel group healthcare activities (e.g., group therapy, recreational activities).
  - Postpone elective procedures, surgeries, and non-urgent outpatient visits.

## 2. Adhere to Standard and Transmission-Based Precautions

Standard Precautions assume that every person is potentially infected or colonized with a pathogen that could be transmitted in the healthcare setting. Elements of Standard Precautions that apply to patients with respiratory infections, including COVID-19, are summarized below. Attention should be paid to training and proper donning (putting on), doffing (taking off), and disposal of any PPE. This document does not emphasize all aspects of Standard Precautions (e.g., injection safety) that are required for all patient care; the full description is provided in the [Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings](#).

HCP (see Section 5 for measures for non-HCP visitors) **who enter the room of a patient with known or suspected COVID-19 should adhere to Standard Precautions and use a respirator (or facemask if a respirator is not available), gown, gloves, and eye protection.** When available, respirators (instead of facemasks) are preferred; they should be prioritized for situations where respiratory protection is most important and the care of patients with pathogens requiring Airborne Precautions (e.g., tuberculosis, measles, varicella). Information about the recommended duration of Transmission-Based Precautions is available in the [Interim Guidance for Discontinuation of Transmission-Based Precautions and Disposition of Hospitalized Patients with COVID-19](#)

- **Hand Hygiene**
  - HCP should perform hand hygiene before and after all patient contact, contact with potentially infectious material, and before putting on and after removing PPE, including gloves. Hand hygiene after removing PPE is particularly important to remove any pathogens that might have been transferred to bare hands during the removal process.
  - HCP should perform hand hygiene by using ABHR with 60-95% alcohol or washing hands with soap and water for at least 20 seconds. If hands are visibly soiled, use soap and water before returning to ABHR.

- Healthcare facilities should ensure that hand hygiene supplies are readily available to all personnel in every care location.

- Personal Protective Equipment

## COVID-19 Personal Protective Equipment (PPE) for Healthcare Personnel

**Preferred PPE – Use N95 or Higher Respirator**

Face shield or goggles

N95 or higher respirator  
When respirators are not available, use the best available alternative, like a facemask.

One pair of clean, non-sterile gloves

Isolation gown

**Acceptable Alternative PPE – Use Facemask**

Face shield or goggles

Facemask  
N95 or higher respirators are preferred but facemasks are an acceptable alternative.

One pair of clean, non-sterile gloves

Isolation gown

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Employers should select appropriate PPE and provide it to HCP in accordance with [OSHA PPE standards \(29 CFR 1910 Subpart I\)](#) . HCP must receive training on and demonstrate an understanding of:

- when to use PPE
- what PPE is necessary
- how to properly don, use, and doff PPE in a manner to prevent self-contamination
- how to properly dispose of or disinfect and maintain PPE
- the limitations of PPE.

Any reusable PPE must be properly cleaned, decontaminated, and maintained after and between uses. Facilities should have policies and procedures describing a recommended sequence for safely donning and doffing PPE. The PPE recommended when caring for a patient with known or suspected COVID-19 includes:

- Respirator or Facemask (Cloth face coverings are NOT PPE and should not be worn for the care of patients with known or suspected COVID-19 or other situations where a respirator or facemask is warranted)**
  - Put on an N95 respirator (or higher level respirator) or facemask (if a respirator is not available) before entry into the patient room or care area, if not already wearing one as part of extended use or reuse [strategies to optimize PPE supply](#). Higher level respirators include other disposable filtering facepiece respirators, PAPRs, or elastomeric respirators.
  - N95 respirators or respirators that offer a higher level of protection should be used instead of a facemask when performing or present for an aerosol generating procedure (See Section 4). See appendix for respirator definition. Disposable respirators and facemasks should be removed and discarded after exiting the patient's room or care

area and closing the door unless implementing extended use or reuse. Perform hand hygiene after removing the respirator or facemask.

- If reusable respirators (e.g., powered air-purifying respirators [PAPRs]) are used, they must be cleaned and disinfected according to manufacturer's reprocessing instructions prior to re-use.
- When the supply chain is restored, facilities with a respiratory protection program should return to use of respirators for patients with known or suspected COVID-19. Those that do not currently have a respiratory protection program, but care for patients with pathogens for which a respirator is recommended, should implement a respiratory protection program.
- **Eye Protection**
  - Put on eye protection (i.e., goggles or a disposable face shield that covers the front and sides of the face) upon entry to the patient room or care area, if not already wearing as part of extended use or reuse [strategies to optimize PPE supply](#). Personal eyeglasses and contact lenses are NOT considered adequate eye protection.
  - Remove eye protection before leaving the patient room or care area.
  - Reusable eye protection (e.g., goggles) must be cleaned and disinfected according to manufacturer's reprocessing instructions prior to re-use. Disposable eye protection should be discarded after use unless following protocols for extended use or reuse.
- **Gloves**
  - Put on clean, non-sterile gloves upon entry into the patient room or care area.
    - Change gloves if they become torn or heavily contaminated.
  - Remove and discard gloves when leaving the patient room or care area, and immediately perform hand hygiene.
- **Gowns**
  - Put on a clean isolation gown upon entry into the patient room or area. Change the gown if it becomes soiled. Remove and discard the gown in a dedicated container for waste or linen before leaving the patient room or care area. Disposable gowns should be discarded after use. Cloth gowns should be laundered after each use.
  - If there are shortages of gowns, they should be prioritized for:
    - aerosol generating procedures
    - care activities where splashes and sprays are anticipated
    - high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of HCP. Examples include:
      - dressing
      - bathing/showering
      - transferring
      - providing hygiene
      - changing linens
      - changing briefs or assisting with toileting
      - device care or use
      - wound care
  - Additional [strategies for optimizing supply of gowns](#) are available.
- Facilities should work with their [health department](#) and [healthcare coalition](#)  to address shortages of PPE.

### 3. Patient Placement

- For patients with COVID-19 or other respiratory infections, evaluate need for hospitalization. If hospitalization is not medically necessary, [home care](#) is preferable if the individual's situation allows.
- If admitted, place a patient with known or suspected COVID-19 in a single-person room with the door closed. The patient should have a dedicated bathroom.
  - Airborne Infection Isolation Rooms (AIIRs) (See definition of AIIR in appendix) should be reserved for patients who will be undergoing aerosol generating procedures (See Aerosol Generating Procedures Section)
- As a measure to limit HCP exposure and conserve PPE, facilities could consider designating entire units within the facility, with dedicated HCP, to care for patients with known or suspected COVID-19. Dedicated means that HCP are assigned to care only for these patients during their shift.
  - Determine how staffing needs will be met as the number of patients with known or suspected COVID-19 increases and HCP become ill and are excluded from work.

- It might not be possible to distinguish patients who have COVID-19 from patients with other respiratory viruses. As such, patients with different respiratory pathogens might be housed on the same unit. However, only patients with the same respiratory pathogen may be housed in the same room. For example, a patient with COVID-19 should ideally not be housed in the same room as a patient with an undiagnosed respiratory infection.
- Limit transport and movement of the patient outside of the room to medically essential purposes.
  - Consider providing portable x-ray equipment in patient cohort areas to reduce the need for patient transport.
- To the extent possible, patients with known or suspected COVID-19 should be housed in the same room for the duration of their stay in the facility (e.g., minimize room transfers).
- Patients should wear a facemask or cloth face covering to contain secretions during transport. If patients cannot tolerate a facemask or cloth face covering or one is not available, they should use tissues to cover their mouth and nose while out of their room.
- Personnel entering the room should use PPE as described above.
- Whenever possible, perform procedures/tests in the patient's room.
- Once the patient has been discharged or transferred, HCP, including environmental services personnel, should refrain from entering the vacated room until sufficient time has elapsed for enough air changes to remove potentially infectious particles (more information on [clearance rates under differing ventilation conditions](#) is available). After this time has elapsed, the room should undergo appropriate cleaning and surface disinfection before it is returned to routine use.

#### 4. Take Precautions When Performing **Aerosol Generating Procedures (AGPs)**

- Some procedures performed on patients with known or suspected COVID-19 could generate infectious aerosols. Procedures that pose such risk should be performed cautiously and avoided if possible.
- If performed, the following should occur:
  - HCP in the room should wear an N95 or higher-level respirator such as disposable filtering facepiece respirators, PAPRs, and elastomeric respirators, eye protection, gloves, and a gown.
  - The number of HCP present during the procedure should be limited to only those essential for patient care and procedure support. Visitors should not be present for the procedure.
  - AGPs should ideally take place in an AIIR.
  - Clean and disinfect procedure room surfaces promptly as described in the section on environmental infection control below.

#### 5. Collection of Diagnostic Respiratory Specimens

- When collecting [diagnostic respiratory specimens](#) (e.g., nasopharyngeal swab) from a patient with possible COVID-19, the following should occur:
  - Specimen collection should be performed in a normal examination room with the door closed.
  - HCP in the room should wear an N95 or higher-level respirator (or facemask if a respirator is not available), eye protection, gloves, and a gown.
    - If respirators are not readily available, they should be prioritized for other procedures at higher risk for producing infectious aerosols (e.g., intubation), instead of for collecting nasopharyngeal swabs.
  - The number of HCP present during the procedure should be limited to only those essential for patient care and procedure support. Visitors should not be present for specimen collection.
  - Clean and disinfect procedure room surfaces promptly as described in the section on environmental infection control below.

#### 6. Manage Visitor Access and Movement Within the Facility

- Limit visitors to the facility to only those essential for the patient's physical or emotional well-being and care (e.g., care partners).
- Encourage use of alternative mechanisms for patient and visitor interactions such as video-call applications on cell phones or tablets.
- Limit points of entry to the facility and visitation hours to allow screening of all potential visitors.

- Actively assess all visitors for fever and COVID-19 symptoms upon entry to the facility. If fever or COVID-19 symptoms are present, the visitor should not be allowed entry into the facility.
- Establish procedures for monitoring, managing, and training all visitors, which should include:
  - All visitors should be instructed to wear a facemask or cloth face covering at all times while in the facility, perform frequent hand hygiene, and restrict their visit to the patient's room or other area designated by the facility.
  - Informing visitors about appropriate PPE use according to current facility visitor policy.
- If visitation to patients with COVID-19 occurs, visits should be scheduled and controlled to allow for the following:
  - Facilities should evaluate risk to the health of the visitor (e.g., visitor might have underlying illness putting them at higher risk for COVID-19) and ability to comply with precautions.
  - Facilities should provide instruction, before visitors enter patients' rooms, on hand hygiene, limiting surfaces touched, and use of PPE according to current facility policy while in the patient's room.
  - Visitors should not be present during AGPs or other procedures.
  - Visitors should be instructed to only visit the patient room. They should not go to other locations in the facility.

## 7. Implement Engineering Controls

- Design and install engineering controls to reduce or eliminate exposures by shielding HCP and other patients from infected individuals. Examples of engineering controls include:
  - physical barriers or partitions to guide patients through triage areas
  - curtains between patients in shared areas
  - air-handling systems (with appropriate directionality, filtration, exchange rate, etc.) that are properly installed and maintained

## 8. Monitor and Manage Ill and Exposed Healthcare Personnel

- Facilities and organizations providing healthcare should implement [sick leave policies](#) for HCP that are non-punitive, flexible, and consistent with public health guidance.
- As part of routine practice, HCP should be asked to regularly monitor themselves for fever and symptoms of COVID-19.
  - HCP should be reminded to stay home when they are ill.
  - If HCP develop fever ( $T \geq 100.0^\circ\text{F}$ ) or symptoms consistent with COVID-19\* while at work they should keep their cloth face covering or facemask on, inform their supervisor, and leave the workplace.
- Screen all HCP at the beginning of their shift for fever and symptoms consistent with COVID-19\*
  - Actively take their temperature and document absence of symptoms consistent with COVID-19\*. If they are ill, have them keep their cloth face covering or facemask on and leave the workplace.
  - \*Fever is either measured temperature  $\geq 100.0^\circ\text{F}$  or subjective fever. Note that fever may be intermittent or may not be present in some individuals, such as those who are elderly, immunosuppressed, or taking certain medications (e.g., NSAIDs). Clinical judgement should be used to guide testing of individuals in such situations. Respiratory symptoms consistent with COVID-19 are cough, shortness of breath, and sore throat. Medical evaluation may be warranted for lower temperatures ( $< 100.0^\circ\text{F}$ ) or other symptoms (e.g., muscle aches, nausea, vomiting, diarrhea, abdominal pain headache, runny nose, fatigue) based on assessment by occupational health. Additional information about clinical presentation of patients with COVID-19 is [available](#).
- HCP with suspected COVID-19 should be [prioritized for testing](#).
- Information about when HCP with confirmed or suspected COVID-19 may return to work is available in the [Interim Guidance on Criteria for Return to Work for Healthcare Personnel with Confirmed or Suspected COVID-19](#).
- As community transmission intensifies within a region, benefits of [formal contact tracing for exposures in healthcare settings](#) might be limited unless residing in a community that is not yet affected by COVID-19. Healthcare facilities should consider foregoing contact tracing in favor of universal source control for HCP and screening for fever and symptoms before every shift.
- As the COVID-19 pandemic progresses, staffing shortages will likely occur due to HCP exposures, illness, or need to care for family members at home. Healthcare facilities must be prepared for potential staffing shortages and have plans and

processes in place to mitigate these, including providing [resources](#) to assist HCP with anxiety and stress. [Strategies to mitigate staffing shortages](#) are available.

## 9. Train and Educate Healthcare Personnel

- Provide HCP with job- or task-specific education and training on preventing transmission of infectious agents, including refresher training.
- Ensure that HCP are educated, trained, and have practiced the appropriate use of PPE prior to caring for a patient, including attention to correct use of PPE and prevention of contamination of clothing, skin, and the environment during the process of removing such equipment.

## 10. Implement Environmental Infection Control

- Dedicated medical equipment should be used when caring for patients with known or suspected COVID-19.
  - All non-dedicated, non-disposable medical equipment used for patient care should be cleaned and disinfected according to manufacturer's instructions and facility policies.
- Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly.
- Routine cleaning and disinfection procedures (e.g., using cleaners and water to pre-clean surfaces prior to applying an EPA-registered, hospital-grade disinfectant to frequently touched surfaces or objects for appropriate contact times as indicated on the product's label) are appropriate for SARS-CoV-2 in healthcare settings, including those patient-care areas in which aerosol generating procedures are performed.
  - Refer to [List N](#) [↗](#) on the EPA website for EPA-registered disinfectants that have qualified under EPA's emerging viral pathogens program for use against SARS-CoV-2.
- Management of laundry, food service utensils, and medical waste should also be performed in accordance with routine procedures.
- Additional information about recommended practices for terminal cleaning of rooms and PPE to be worn by environmental services personnel is available in the [Healthcare Infection Prevention and Control FAQs for COVID-19](#)

## 11. Establish Reporting within and between Healthcare Facilities and to Public Health Authorities

- Implement mechanisms and policies that promote situational awareness for facility staff including infection control, healthcare epidemiology, facility leadership, occupational health, clinical laboratory, and frontline staff about patients with known or suspected COVID-19 and facility plans for response.
- Communicate and collaborate with public health authorities.
  - Facilities should designate specific persons within the healthcare facility who are responsible for communication with public health officials and dissemination of information to HCP.
  - Communicate information about patients with known or suspected COVID-19 to appropriate personnel before transferring them to other departments in the facility (e.g., radiology) and to other healthcare facilities.

## 12. Appendix: Additional Information about Airborne Infection Isolation Rooms, Respirators and Facemasks

Information about Airborne Infection Isolation Rooms (AIIRs):

- AIIRs are single-patient rooms at negative pressure relative to the surrounding areas, and with a minimum of 6 air changes per hour (12 air changes per hour are recommended for new construction or renovation).
- Air from these rooms should be exhausted directly to the outside or be filtered through a high-efficiency particulate air (HEPA) filter directly before recirculation.
- 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.

Information about Respirators:

- A respirator is a personal protective device that is worn on the face, covers at least the nose and mouth, and is used to reduce the wearer's risk of inhaling hazardous airborne particles (including dust particles and infectious agents), gases, or vapors. Respirators are certified by the CDC/NIOSH, including those intended for use in healthcare.
- Respirator use must be in the context of a complete respiratory protection program in accordance with OSHA Respiratory Protection standard ([29 CFR 1910.134](#) ). HCP should be medically cleared and fit tested if using respirators with tight-fitting facepieces (e.g., a NIOSH-approved N95 respirator) and trained in the proper use of respirators, safe removal and disposal, and medical contraindications to respirator use.
- [NIOSH information about respirators](#)
- [OSHA Respiratory Protection eToo](#)
- [Strategies for Optimizing the Supply of N-95 Respirators](#)

#### Filtering Facepiece Respirators (FFR) including N95 Respirators

- A commonly used respirator in healthcare settings is a filtering facepiece respirator (commonly referred to as an N95). FFRs are disposable half facepiece respirators that filter out particles.
- To work properly, FFRs must be worn throughout the period of exposure and be specially fitted for each person who wears one. This is called "fit testing" and is usually done in a workplace where respirators are used.
- [Three key factors for an N95 respirator to be effective](#)
- FFR users should also perform a user seal check to ensure proper fit each time an FFR is used.
- Learn more about how to perform a [user seal check](#)
- For more information on how to perform a user seal check: [Click here](#)

#### NIOSH-approved N95 respirators list

- PAPRs have a battery-powered blower that pulls air through attached filters, canisters, or cartridges. They provide protection against gases, vapors, or particles, when equipped with the appropriate cartridge, canister, or filter.
- Loose-fitting PAPRs do not require fit testing and can be used with facial hair.
- A list of NIOSH-approved PAPRs is located on the [NIOSH Certified Equipment List](#).

#### Information about Facemasks:

- If worn properly, a facemask helps block respiratory secretions produced by the wearer from contaminating other persons and surfaces (often called source control).
- Surgical facemasks are cleared by the U.S. Food and Drug Administration (FDA) for use as medical devices. Facemasks should be used once and then thrown away in the trash.