

## UPDATED PPE POLICY FOR KNOWN OR SUSPECTED COVID-19 PATIENTS

**VERSIONS:****March 18, 2020: Update****March 19, 2020: Update**

The following are updated personal protective equipment (PPE) guidelines for working with known or suspected COVID-19 patients.

- Surgical facemasks are an acceptable alternative until the supply chain is stabilized. N95 or higher respirators should be prioritized for procedures that are likely to generate respiratory aerosols, which would pose the highest exposure risk to HCP.
- Eye protection, gown, and gloves continue to be recommended. However, they should be prioritized for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of HCP.
- Added Strategies for Optimizing the Supply of N95 Respirators
- Added provider surgical mask use when entering facilities with at risk populations (nursing homes, rehabilitation facilities, etc.)

**1.0 Implementation:**

- This revised PPE guidance is made in accordance with current CDC recommendations to ensure a sustainable PPE supply. Implementation is effective upon receipt of this guidance.

**1.1 Definitions**

- **Extended use:** refers to the practice of wearing the same N95 respirator for repeated close contact encounters with several patients, without removing the N95 respirator between patient encounters.
- **Reuse:** refers to the practice of using the same N95 respirator for multiple encounters with patients but removing it ('doffing') after each encounter. The N95 respirator is stored in between encounters to be put on again ('donned') prior to the next encounter with a patient. For pathogens in which contact transmission (e.g., fomites) is not a concern, non-emergency reuse has been practiced for decades. For example, for tuberculosis prevention, CDC recommends that a respirator classified as disposable can be reused by the same worker as long as it remains functional and is used in accordance with local infection control procedures.

**1.2 Appropriate Use**

One of the most important components of preventing infection and spread of disease is the appropriate use of Personal Protective Equipment (PPE). Based on all available evidence to date and current CDC recommendation, employees who will directly care for or transport a patient with possible COVID-19 infection or who will be in the vehicle or aircraft with the patient follow Standard, Contact, and Airborne Precautions in accordance with organizational policy.

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Specifically, recommended PPE for clinical staff, drivers, pilot or other affected employees includes:

- Drivers or pilots, if they provide direct patient contact or transport (e.g., moving patients onto stretchers), should wear all recommended PPE in accordance with this document
- Surgical facemask (if a patient is masked and NOT performing or present for aerosolizing procedure). Surgical mask use is strongly encouraged when entering certain facilities where at risk populations exist (nursing homes, rehabilitation facilities, etc.).
- N95 respirators or respirators that offer a higher level of protection are used instead of a surgical facemask when patient IS NOT masked or when performing or present for an aerosol-generating procedure
- Eye protection (i.e., goggles or disposable face shield that fully covers the front and sides of the face).
- Staff engaged in or present for aerosolizing procedures will follow eye protection guidance above
- A single pair of disposable patient examination gloves. Change gloves if they become torn or heavily contaminated.
- Isolation Gown—If there are shortages of gowns, they will be prioritized for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of EMS clinicians (e.g., moving patient onto a stretcher).
- All personnel should avoid touching their face while working. After completing patient contact and before entering the driver's compartment or aircraft, the driver or pilot should remove and dispose of PPE except for the appropriate mask (see provided donning and doffing poster) and perform hand hygiene to avoid soiling the compartment.

If the transport vehicle (aircraft or ambulance) does not have an isolated (separate) compartment, the driver or pilot for operation of the transport vehicle should remove the face shield or goggles, gown and gloves and perform hand hygiene. An appropriate mask or respirator should continue to be used in accordance with these guidelines during transport by the driver or pilot. For pilots, the N95 respirator is appropriate to wear in the presence of helmets, visors and/or night vision goggles.

On arrival, after the patient is released to the facility and the vehicle or aircraft is appropriately decontaminated, affected staff should remove and discard PPE and perform hand hygiene. All personnel should follow appropriate donning and doffing procedures (see provided donning and doffing poster). Used PPE should be discarded in accordance with routine procedures.

### 1.3 Appropriate N95 Respirator Fit Testing and Facial Hair

To be optimally effective at reducing the risk of airborne exposures, N95 respirators must fit appropriately on the face of the wearer. N95 respirators are appropriately fit tested for all employees engaged in the treatment or transport of patients. Fit testing must occur with applicable safety equipment in place (e.g. helmets, safety glasses). In addition, facial hair that comes between the sealing

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surface of the N95 respirator and the face must be removed. Individuals that do not remove facial hair that interferes with a proper seal will not be permitted to engage in the treatment or transportation of patients given the substantial risk to themselves, other providers and the community. There are no medical or religious exemptions allowed in accordance with OSHA standard 190.134.

### 1.4 GMR strategies for Optimizing the Supply of N95 Respirators

- 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

### 1.5 Respirator Extended Use Recommendations

Extended use is favored over reuse because it is expected to involve less touching of the respirator and therefore less risk of contact transmission. A key consideration for safe extended use is that the respirator must maintain its fit and function. The following criteria apply to extended use of N95 respirators:

- Discard N95 respirators following use during aerosol generating procedures.
- Discard N95 respirators contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.
- Discard N95 respirators following close contact with, or exit from, the care area of any patient co-infected with an infectious disease requiring contact precautions.
- Consider use of a cleanable face shield (preferred) over an N95 respirator and/or other steps (e.g., masking patients) to reduce surface contamination.
- Perform hand hygiene with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the respirator (if necessary for comfort or to maintain fit). Extended use alone is unlikely to degrade respiratory protection. However, healthcare facilities should develop clearly written procedures to advise staff to:
- Discard any respirator that is obviously damaged or becomes hard to breathe through.

### 1.6 Respirator Reuse Recommendations:

Safe N95 respirator reuse is affected by a number of variables that impact respirator function and contamination over time. The recommendations below are designed to provide practical advice so that N95 respirators are discarded before they become a significant risk for contact transmission or their functionality is reduced:

- Discard N95 respirators following use during aerosol generating procedures.

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- Discard N95 respirators contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.
- Discard N95 respirators following close contact with any patient co-infected with an infectious disease requiring contact precautions.
- Use a cleanable face shield (preferred) or a surgical mask over an N95 respirator and/or other steps (e.g., masking patients, use of engineering controls), when feasible to reduce surface contamination of the respirator.
- Hang used respirators in a designated storage area or keep them in a clean, breathable container such as a paper bag between uses. To minimize potential cross-contamination, store respirators so that they do not touch each other and the person using the respirator is clearly identified. Storage containers should be disposed of or cleaned regularly.
- Avoid touching the inside of the respirator. If inadvertent contact is made with the inside of the respirator, perform hand hygiene as described above. Clean hands with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the respirator (if necessary for comfort or to maintain fit).
- Use a pair of clean (non-sterile) gloves when donning a used N95 respirator and performing a user seal check. Discard gloves after the N95 respirator is donned and any adjustments are made to ensure the respirator is sitting comfortably on your face with a good seal.
- Continue to use the N95 Respirator unless it is damaged, wet or exposed to aerosolized procedures.

Prior to each use;

Perform a user seal check (see user seal check guidance below)

After each use;

Inspect the device for physical damage (e.g., Are the straps stretched out so much that they no longer provide enough tension for the respirator to seal to the face?, Is the nosepiece or other fit enhancements broken?, etc.).

- Discard any respirator that is obviously damaged or becomes hard to breathe through.
- Pack or store respirators between uses so that they do not become damaged or deformed. Secondary exposures can occur from respirator reuse if respirators are shared among users and at least one of the users is infectious (symptomatic or asymptomatic). Thus, N95 respirators must only be used by a single wearer.
- Label containers used for storing respirators or label the respirator itself (e.g., on the straps) between uses with the user's name to reduce accidental usage of another person's respirator.

### 1.7 Seal Check & Donning and Doffing Protocols

## Filtering out Confusion: Frequently Asked Questions about Respiratory Protection

### User Seal Check

Over 3 million United States employees in approximately 1.3 million workplaces are required to wear respiratory protection. The Occupational Safety and Health Administration (OSHA) (29 CFR 1910.134) requires an annual fit test to confirm the fit of any respirator that forms a tight seal on the wearer's face before it is used in the workplace.<sup>1</sup> Once a fit test has been done to determine the best respirator model and size for a particular user, a **user seal check** should be done every time the respirator is to be worn to ensure an adequate seal is achieved.



### What is a User Seal Check?

A user seal check is a procedure conducted by the respirator wearer to determine if the respirator is being properly worn. The user seal check can either be a positive pressure or negative pressure check.

During a **positive pressure user seal check**, the respirator user **exhales** gently while blocking the paths for air to exit the facepiece. A successful check is when the facepiece is slightly pressurized before increased pressure causes outward leakage.

During a **negative pressure user seal check**, the respirator user **inhales** sharply while blocking the paths for air to enter the facepiece. A successful check is when the facepiece collapses slightly under the negative pressure that is created with this procedure.

A user seal check is sometimes referred to as a fit check. A user seal check should be completed each time the respirator is donned (put on). It is only applicable when a respirator has already been successfully fit tested on the individual.

### How do I do a User Seal Check while Wearing a Filtering Facepiece Respirator?

Not every respirator can be checked using both positive and negative pressure. Refer to the manufacturer's instructions for conducting user seal checks on any specific respirator. This information can be found on the box or individual respirator packaging.

The following positive and negative user seal check procedures for filtering facepiece respirators are provided as examples of how to perform these procedures.



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### How to do a positive pressure user seal check

Once the particulate respirator is properly donned, place your hands over the facepiece, covering as much surface area as possible. Exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure is being built up inside the facepiece without any evidence of outward leakage of air at the seal. Examples of such evidence would be the feeling of air movement on your face along the seal of the facepiece, fogging of your glasses, or a lack of pressure being built up inside the facepiece.

If the particulate respirator has an exhalation valve, then performing a positive pressure check may be impossible. In such cases, a negative pressure check should be performed.

### How to do a negative pressure user seal check



Negative pressure seal checks are typically conducted on particulate respirators that have exhalation valves. To conduct a negative pressure user seal check, cover the filter surface with your hands as much as possible and then inhale. The facepiece should collapse on your face and you should not feel air passing between your face and the facepiece.

In the case of either type of seal check, if air leaks around the nose, use both hands to readjust the nosepiece by placing your fingertips at the top of the metal nose clip. Slide your fingertips down both sides of the metal strip to more efficiently mold the nose area to the shape of your nose. Readjust the straps along the sides of your head until a proper seal is achieved.<sup>2</sup>

If you cannot achieve a proper seal due to air leakage, you may need to be fit tested for a different respirator model or size.

## Can a user seal check be considered a substitute for a fit testing?

No. The user seal check does not have the sensitivity and specificity to replace either fit test methods, qualitative or quantitative, that are accepted by OSHA (29 CFR 1910.134). A user should only wear respirator models with which they have achieved a successful fit test within the last year. NIOSH data suggests that the added care from performing a user seal check leads to higher quality donnings (e.g., reduces the chances of a donning with a poor fit).<sup>3</sup>

## Where can I Find More Information?

This information and more is available on the [NIOSH Respirator Trusted-Source webpage](#).

#### References

1. OSHA [1998]. Respiratory Protection. 29 CFR 1910.134. Final rule. Fed Regist 63:1152-1300.
2. NIOSH [2010]. How to properly put on and take off a disposable respirator. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2010-133 <https://www.cdc.gov/niosh/docs/2010-133/pdf/2010-133.pdf>
3. Viscusi DJ, Bergman MS, Zhuang Z, and Shaffer RE [2012]. Evaluation of the benefits of the user seal check on N95 filtering facepiece respirator fit. J Occup and Environ Hyg. 9(6):408-416. Photos courtesy of NIOSH

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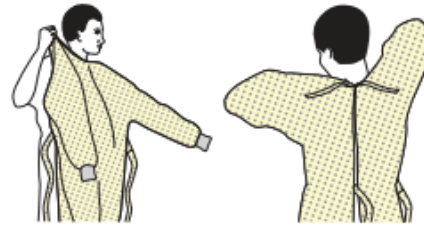
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## SEQUENCE FOR **PUTTING ON** PERSONAL PROTECTIVE EQUIPMENT (PPE)

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



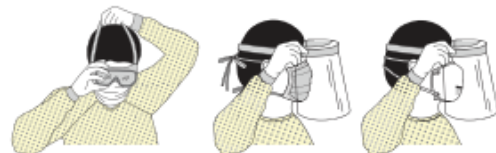
### 2. MASK OR RESPIRATOR

- 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



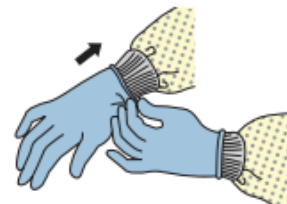
### 3. GOGGLES OR FACE SHIELD

- 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

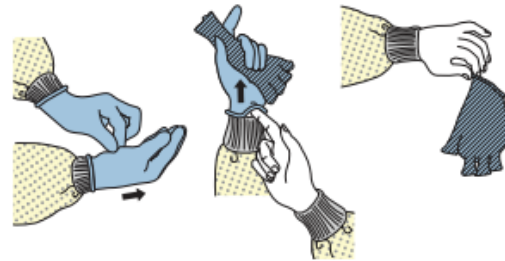


## HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

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
- Pull 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

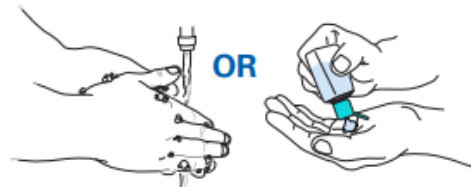


### 4. MASK OR RESPIRATOR

- 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

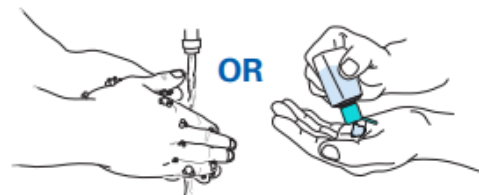


### 3. MASK OR RESPIRATOR

- 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  
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