



Personal Protective Equipment for Healthcare Workers in a COVID-19 Environment
March 16, 2020

Healthcare workers face a real risk of acquiring COVID-19 through their jobs, and the precautions recommended for them are stringent. To prevent transmission of COVID-19 in healthcare settings, Personal Protective Equipment (PPE) appropriate for standard, contact and airborne precautions, in addition to eye protection, is recommended for all contact with COVID-19 infected or suspected patients. Standard precautions include hand washing. Contact precautions include the use of gown and gloves for contact with the patient or the patient's environment. Airborne precautions include the use of a respirator approved by the National Institute for Occupational Safety and Health (NIOSH).

PPE is only effective if used correctly. COVID-19 infection in health care workers has been reported in locations where infection control precautions were not followed and PPE was not appropriately used. Special attention should be given to the use of disposable PPE (or proper disinfection of re-usable PPE) and proper donning and doffing procedures to prevent the spread of infectious particles through PPE use.

Employers should select appropriate PPE and provide it to healthcare workers in accordance with OSHA PPE standards. Healthcare workers must receive training on and demonstrate an understanding of:

- When to use PPE.
- Which 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:

- **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. 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.
- **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 during which splashes and sprays are anticipated.
 - High-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of healthcare workers.

Respirator Considerations for Healthcare Facilities

Respirators should be used in the context of a complete respiratory protection program in accordance with OSHA's Respiratory Protection regulations. Appropriate respirators are NIOSH approved and are at least as effective as N-95. Hood or helmet powered air-purifying respirators (PAPRs) provide protection for workers who have fit limitations (e.g. facial hair). PAPRs and higher levels of respirator protection (e.g. full-face piece) have been used during certain aerosol-generating procedures.

Although surgical masks provide protection for large droplets, they are not adequate protection against airborne or aerosol particles. Due to documented transmission through contaminated objects, disposable respirators and other PPE should be discarded after use. Reusable respirators should be decontaminated after each use according to manufacturer recommendations. Removal of PPE should minimize the potential for self-contamination and workers should be educated on standard procedures. Hand cleansing is necessary following the removal of PPE.

- **Respirator**
 - Put on a respirator before entry into the patient room or care area.
 - 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. Disposable respirators should be removed and discarded after exiting the patient's room or care area and closing the door. Perform hand hygiene after discarding the respirator or facemask.
 - If reusable respirators (e.g., powered air purifying respirators [PAPRs]) are used, they must be cleaned and disinfected according to the manufacturer's reprocessing instructions prior to re-use.
 - Employers 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.