



PPE Usage Guidance

A resource for personal protective equipment usage during the COVID-19 pandemic for CMMB beneficiary facilities



Healthier Lives Worldwide



The following guidance will help facilities to conserve limited PPE

As the spread of COVID-19 continues, health facilities throughout the world must address the safety of their staff, community health workers, patients, and the local communities. Facilities of all sizes will face operational challenges. Treating patients infected with COVID-19 and preventing transmission to other patients and healthcare providers (HCPs) will require shifts in policy, practices, and mindset.

A critical component of protecting the healthcare workforce from this highly contagious disease is the use of personal protective equipment (PPE). This guidance explains mechanisms for conserving PPE while ensuring the safety of healthcare workers and patients. All recommendations are based on CDC and WHO guidelines as well as emerging best practices.

Key Highlights

- Many facilities are facing PPE shortages.
- Adjusting patient intake, spatial organization, and staffing protocols can cut down on the need for PPE and contribute towards conservation.
- Reuse of PPE beyond the recommended time frame should take into consideration the below advice and involve consultation with all HCPs.
- Substitutions for PPE can serve as a last resort solution, but their protective capacity is not known and therefore not guaranteed.

Limiting Healthcare Providers' Exposure to COVID-19

To reduce overall use of PPE and to conserve these limited resources, the following recommendations outline approaches that health facilities may take to limit exposure to contagious patients, including steps to adjust patient intake, staffing, and spatial organization:

- Instruct patients to call and describe their symptoms—in advance of coming to the facility—in order for staff to screen community members for COVID-19 by phone and avoid unnecessary exposure.
 - Those who can manage the symptoms at home should be informed of how to do so; and when to contact the health facility regarding worsening symptoms.
- Explore options for telemedicine so that the population may observe quarantine measures, while still receiving consultations/care.
- Set up a separate area (building, tent, etc.), for triage of suspected COVID-19 patients.
- Dedicate a single entrance of the facility to admit incoming COVID-19 patients. This will ensure that any patients coming to the facility for other services face a decreased risk of exposure/transmission.
- Adhere to social distancing between patients (6 feet/2 meters).
- Consider cancelling or limiting all elective and non-urgent procedures and appointments for which PPE is typically used by HCPs.
- Dedicate a limited group of HCPs to treatment and care of COVID-19 patients. Avoid assigning HCPs who are at a higher risk for contracting the virus. Consideration should be given for age, underlying conditions, and the immunocompromised.
- If any HCPs acquire and recover from COVID-19, consider dedicating them to treating incoming patients as they may have a level of immunity from fighting the infection.
- Dedicated planning will be necessary to navigate caring for patients while also protecting staff, and the wider beneficiary/patient community.



Emergency Conservation of PPE

The unprecedented global impact of COVID-19 has led to widespread shortages of PPE items required to respond safely and effectively.

While manufacturers work to scale up their production to meet the overwhelming need, many facilities are going to be unable to acquire the necessary products.

The most frequently utilized PPE for COVID-19 includes:

- Facemasks and faceshields
- Medical gloves
- Protective eyewear
- N95 respirators
- Isolation gowns

FACEMASKS

Recommendations:

As the mouth and nose are the most susceptible point for the virus to enter the body, it is crucial for HCPs treating COVID-19 patients to have access to facemasks when working.

- Care should be taken to ensure that HCP does not touch outer surfaces of the facemask.
- Care should be taken to ensure that facemask removal and replacement be done in a careful and deliberate manner.
- HCP should leave patient care area if they need to remove the facemask.
- The facemask should be removed and discarded if soiled, damaged, or hard to breathe through.
- If there is no expiration date available on the facemask label or packaging, the user should visually inspect the product prior to use and, if there are concerns (such as degraded materials or visible tears), discard. Facility may also choose to contact the manufacturer for additional information (if so, prepare to provide the product name, description, item number, and lot number).

During COVID-19 pandemic, prioritize facemasks for both activities related to infected patients and for selected non-coronavirus related activities such as:

- Aerosol generating procedures, if respirators are no longer available.
- Provision of essential surgeries and procedures.
- During care activities where splashes and sprays are anticipated.
- During activities where prolonged face-to-face or close contact with a potentially infectious patient is unavoidable.

Conservation and Re-use:

This is practice of one HCP using a single disposable facemask for an extended period of time, removing in-between patient encounters and when they are passing through non-COVID parts of the facility.

- NOTE: Not all facemasks can be re-used.
- Facemasks with elastic ear hooks may be more suitable for re-use.
- Facemasks that fasten via ties may not be able to be undone without tearing and should be considered only for extended single use.
- Facemasks should be carefully folded so that the outer surface is held inward and against itself to reduce contact with the outer surface during storage. The folded facemask can be stored between uses in a clean sealable paper bag or breathable container in order to be protected and to dry.
- Alternatively, HCPs can also dedicate a single facemask to each patient and reuse it for multiple consultations with that patient. When not in use, the facemask should be stored as outlined above.

When none are available:

Consider limiting the staff treating COVID-19 patients as described on page 1.

- HCP use of homemade masks: In settings where facemasks are not available, HCP might use homemade masks (e.g., bandana, scarf) for care of patients with COVID-19 as a last resort. However, **note:** *homemade masks are not considered PPE*, since their capability to protect HCP is unknown. Caution should be exercised when considering this option. Homemade masks should ideally be used in combination with a face shield that covers the entire front (that extends to the chin or below) and sides of the face.

MEDICAL GLOVES

Recommendations:

Medical gloves are crucial PPE for examination of any patient with COVID-19 as the HCP is almost always going to be touching the patient or other items/surfaces in the room.

Rigorous hand washing (20 seconds minimum) must be practiced before and after wearing medical gloves.

Conservation and Re-use:

Use medical gloves beyond the manufacturer-designated shelf life in a setting where there is a lower risk of transmission (settings with higher risk of infection include surgical wards or sterile environments for immune-compromised patients).

Re-use of medical gloves/alternatives to gloves for HCPs:

- Medical gloves can be reused by an HCP between patients with the same infectious disease diagnosis or exposure and no other infections.
- The user should visibly inspect the medical gloves prior to use and, if there are concerns (for example, discolored or visible tears, holes), discard the gloves.
- During extended use of medical gloves, gloved hands can be cleaned between patients and at other times when hand hygiene would normally be performed during routine patient care.
 - Alcohol-based hand sanitizers may degrade vinyl gloves. If a glove becomes damaged (for example, discolored, deteriorated, visible tears, holes) or contaminated (for example, body fluids, chemotherapy drugs), replace it.
- Radiographic protective gloves or radiation attenuating surgeon's gloves offer fluid barrier protection. These gloves cannot be sterilized. They should be cleaned following the manufacturer's labeling.

When none are available:

Consider using non-medical gloves such as those sold for food service, embalming, cleaning, or other industrial-grade gloves.



PROTECTIVE EYEWEAR

Recommendations:

Goggles or face shields are strongly recommended for any HCPs who are working with COVID-19 patient as the eyes are one of the primary points for the virus to enter the body. Prioritize eye protection for selected activities such as:

- During activities where prolonged face-to-face or close contact with a potentially infectious patient is unavoidable.
- During care activities where splashes and sprays are anticipated, which typically include aerosol generating procedures.

Conservation and Re-use:

Use protective eyewear beyond the manufacturer-designated shelf life during patient care activities:

- The user should visually inspect the product prior to use and,
- If there are concerns (such as degraded materials), discard the product.
- Adhere to manufacturer instructions for cleaning and disinfection.

When none are available:

When cleaning instructions are not available, such as for single use disposable face shields:

1. While wearing gloves, carefully wipe the 1) *inside*, followed by 2) *the outside* of the face shield or goggles using a clean cloth with neutral detergent solution or cleaner wipe.
2. Carefully wipe the *outside* of the face shield or goggles using a wipe or clean cloth saturated with hospital disinfectant solution (e.g. 60% alcohol-based solution).
3. Wipe the outside of face shield or goggles with A) soap and clean water or B) alcohol to remove residue.
4. Fully dry (air dry or manually dry with clean absorbent towels).
5. Remove gloves and wash hands thoroughly.

N95 RESPIRATORS

Recommendations:

These are the ideal method for protection of the mouth and nose when treating COVID-19 patients as they are tight-fitting and filter out 95% of airborne particulate.

- There may be local resources available for training HCPs on N95 use.
- The individual fitting and seal check should be performed in accordance with direction on the packaging every time, regardless of whether the respirators are being put through re-use.
- When N95 masks are being used beyond the recommended period of time, it is suggested that HCPs wear a facemask over the N95 mask as an added precaution.

Conservation and Re-use:

There is no consensus on the length of time N95 respirators can be reused. When not in use, they should be stored in a paper bag to facilitate drying. In the event that the straps break, or the seal becomes warped, then discard the unit.

When none are available:

Consider limiting the staff dedicated to treating COVID-19 patients as described in 'Limiting HCP's exposure to COVID-19' section.

ISOLATION GOWNS

Recommendations:

In healthcare settings where infectious disease is diagnosed and treated, isolation gowns are employed to protect against microbial contamination. They ensure that microbes that may be in a room are not carried to other parts of a facility on the bodies of HCPs.

Apart from treatment of COVID-19, gowns should be prioritized for the following activities:

- During care activities where splashes and sprays are anticipated, which typically includes aerosol generating procedures.
- During high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of HCPs, such as:
 - Dressing, bathing/showering, transferring, providing hygiene, changing linens, changing briefs or assisting with toileting, device care or use, wound care.
- Surgical gowns should be prioritized for surgical and other sterile procedures. Facilities may consider suspending use of gowns for endemic multidrug resistant organisms (e.g., MRSA, VRE, ESBL-producing organisms).

Conservation and Re-use:

Considerations can be made to extend the use of isolation gowns (disposable or cloth) such that the same gown is worn by the same HCP when interacting with more than one patient known to be infected with the same infectious disease provided these patients are housed in the same location. The goal of this strategy is to minimize exposures of HCP and not necessarily prevent transmission between patients.

- Re-use of isolation gowns can be considered only if there are no additional co-infectious diagnoses transmitted by contact (such as *Clostridioides difficile*) among patients.
- If isolation gown becomes visibly soiled, it should be removed and disposed of as per usual practices.
- Cloth isolation gowns could potentially be untied and retied and could be considered for re-use without washing in between provided the guidelines from bullet one are strictly observed. If the gowns become stained, then they must be washed before continued use.
- Disposable gowns usually cannot be washed and re-used because ties and fasteners break.
- As with facemasks, HCPs can dedicate a single isolation gown to each patient and reuse it for multiple consultations with that patient. When not in use, the gown should be stored in a safe and isolated location.

When none are available:

In situations of severely limited or no available isolation gowns, the following pieces of clothing can be considered as a last resort for care of COVID-19 patients as single use. However, NOTE: none of these options can be considered PPE, since their capability to protect HCP is unknown. Preferable features include long sleeves and closures (snaps, buttons) that can be fastened and secured.

- Disposable laboratory coats.
- Reusable (washable) patient gowns.
- Reusable (washable) laboratory coats.
- Disposable aprons.
- Combinations of Clothing: Combinations of pieces of clothing can be considered for activities that may involve body fluids and when there are no gowns available:
 - Long sleeve aprons in combination with long sleeve patient gowns or laboratory coats.
 - Open back gowns with long sleeve patient gowns or laboratory coats.
 - Sleeve covers in combination with aprons and long sleeve patient gowns or laboratory coats.



Especially during this time, try to provide adequate opportunities for rest and psychological support for your health care providers as they work to ensure care. Please exercise all recommended distancing and hygiene precautions for yourselves and your loved ones. We will get through this together, and CMMB will be here to support you throughout, and after this crisis has subsided.

