

# COVID-19 PPE EXTENDED USE AND REUSE STRATEGIES

(Version 1 – Updated: June 23, 2020)

Health care facilities should review [CDC's guidance on PPE optimization](#) and NIOSH's guidance on extended use and limited reuse of N95 respirators for full information.

## Key Concepts

### All U.S. healthcare facilities should be using PPE contingency strategies now.

- Maximize use of engineering controls, such as barriers and maintained ventilation systems, and administrative controls, such as altering work practices to minimize patient contacts.
- Cancel elective and non-urgent procedures/appointments.
- Reserve PPE for Healthcare Personnel (HCP) and replace PPE normally used for source control with other barrier precautions such as cloth masks or tissues.
- Use re-usable PPE that can be reprocessed.
- Use PPE beyond the manufacturer-designated shelf life for training.
- Consider allowing HCP to extend use of respirators, facemasks, gowns, and eye protection, beyond a single patient contact.

**NOTE:** All healthcare facilities that require respirator use by employees (including fitted facepiece N95s or equivalent) must have a formal Respiratory Protection Program in place that includes medical clearance by a qualified health care professional; fit testing; and training on how to maintain and use the respirator.

**U.S. healthcare facilities experiencing PPE shortages should consider crisis capacity strategies, which must be carefully planned before implementation.** The effectiveness of crisis strategies is uncertain and they may pose a risk for transmission between HCP and patients.

- Consider using intact PPE that is beyond the manufacturer-designated shelf life for patient care activities.
- Carefully prioritize PPE use for selected care activities (exposing the worker to respiratory aerosols, droplets, splashes, or sprays) with residents suspected or confirmed with airborne-transmitted disease risks, like COVID-19, tuberculosis, measles, and varicella.
- If no commercial PPE is available, carefully consider if alternative approaches will reduce the risk of HCP exposure and are safe for patient care.

**As PPE becomes available, healthcare facilities should promptly resume standard practices.**

## PPE Extended Use/ Re-use Concepts

**Extended use** refers to the practice of wearing the same N95 respirator or other PPE (except gloves) for repeated close contact encounters with several patients, without removing the PPE between patient encounters. Extended use is well suited to situations wherein multiple patients/ residents with the same infectious disease diagnosis, whose care requires use of a respirator, are cohorted (e.g., housed on the same unit).

**Reuse** refers to the practice of using the same N95 respirator or other PPE (except gloves) for multiple encounters with patients but removing it ('doffing') after each encounter. Extended use is favored over reuse because it is expected to involve less touching of the respirator and therefore less risk of contact transmission.

If extended use or reuse of N95 respirators/ other PPE (except gloves) is permitted, **health care facilities should consider additional training and reminders** for staff to reinforce the need to minimize unnecessary contact with the contaminated PPE surfaces, strict adherence to hand hygiene practices, and proper donning and doffing technique.

For extended use or reuse of N95 respirators, health care facilities should advise staff to take the following steps to **reduce contact transmission**:

- Ensure respirators are only used by a single wearer.
- Ensure the respirator maintains its fit and function.
- Discard respirators following use during aerosol generating procedures.
- Discard respirators contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.
- Discard respirators following close contact with, or exit from, the care area of any patient co-infected with an infectious disease requiring contact precautions.
- Discard any respirator that is obviously damaged or becomes hard to breathe through.
- Consider use of a cleanable face shield (preferred) over the respirator and/or other steps (for example, masking patients, use of engineering controls) 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).

Additionally, for reuse of N95 respirators, health care facilities should advise staff to take the following steps:

- Follow the employer's maximum number of donnings (or up to five if the manufacturer does not provide a recommendation).
- 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. Storage containers should be disposed of or cleaned regularly. Pack or store respirators between uses so that they do not become damaged or deformed.
- Label containers used for storing respirators and/or label the respirator itself (for example, on the straps) between uses with the user's name to reduce accidental usage of another person's respirator.
- Avoid touching the inside of the respirator. If inadvertent contact is made with the inside of the respirator, perform hand hygiene.
- Use proper respirator donning techniques including inspection of the device for physical damage (for example, 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?)
- Use a pair of clean (non-sterile) gloves when donning a used respirator and performing a user seal check. Discard gloves after the respirator is donned and any adjustments are made to ensure the respirator is sitting comfortably on your face with a good seal.

More information can be found at: [CDC COVID-19 for instructions in how to perform a seal check](#).

## Decontamination of Filtering Facepiece Respirators (FFRs)

Decontamination procedures are not considered standard use by any of the FFR manufacturers or CDC's National Institute for Occupational Safety and Health (NIOSH); however, in light of the existing shortages, [CDC published guidance on their website](#).

### Wisconsin Battelle N95 Decontamination System:

Through a partnership with the Federal Emergency Management Agency (FEMA) and Defense Logistics Agency (DLA), the system is being provided without costs to Wisconsin's health care workers and first responders through a federal grant.

**Step 1: SIGN UP** – Download the [Services Agreement](#) [doc], have your authorized representative sign it and return by email to [ppecontaminationcontracts@battelle.org](mailto:ppecontaminationcontracts@battelle.org). We will issue back a countersigned agreement.

**Step 2:** Once your signed services agreement has been sent, download and complete the [Site Locations and POC Information form](#) and return by email to Ben Presson [presson@battelle.org](mailto:presson@battelle.org). *Note: Each row of data in the excel sheet should be for a physical location at which you would like to send and receive masks. Example a countywide fire department would want to put in a line for each firehouse so each can send and receive masks directly.*

**Step 3:** 3-digit site codes for each location will be provided to you after the services agreement is executed. The 3-digit codes are to be marked on each N95 respirator you collect. Begin collecting and labeling your N95 respirators. Each N95 respirator must be handled and labeled properly to be decontaminated. Below are specific instructions for details on how to collect, label, and package your respirators for shipment.

1. [Instructions for Healthcare Personnel](#) (mask marking)
2. [Instructions for Healthcare Facilities](#)
3. [HCP - Fact Sheet](#)

**It is VERY IMPORTANT that every N95 is properly labeled and free of any visible soiling** such as blood, bodily fluids, and makeup. We cannot decontaminate N95s that do not meet these requirements.

**Step 4: SEND RESPIRATORS!** When you prepare to send your N95s, you will need to download and fill out the [Chain of Custody Form](#). Please provide one form per shipment.

Other important details about the service are located in the [Battelle CCDS™ FAQs](#).

## Alternative to Decontamination of Respirators ([WI DHS](#))

An alternative suggested strategy to decontamination of FFRs is to issue five respirators to each health care worker who may care for patients with suspected or confirmed COVID-19. The health care worker will wear one respirator each day and at the end of each shift store it in its own breathable paper bag. (Each bag should be placed in a second paper bag that is disposed after each use). The order of FFR use should be repeated, so that a minimum of five days passes between each FFR use. This will result in each worker requiring a minimum of five FFRs, providing that they put on, take off, care for them, and store them properly each day.

## UV Decontamination of Respirators & Other PPE

UV decontamination sites, which can service N95 respirators as well as other types of PPE, are also in place in Wisconsin. The UV site map and contact information can be [found here](#) or contact your county [Emergency Manager](#).

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