

Interim Guidance for Extended Use and Limited Reuse of N95 Respirators in Healthcare Settings during the COVID-19 Pandemic, June 12, 2020

Healthcare facilities may consider extended use and limited reuse of disposable N95 filtering facepiece respirators (FFR or “N95 respirators”) as a crisis capacity strategy to ensure continued availability. The decision to implement policies that permit extended use or reuse of N95 respirators should be made by the institution’s respiratory protection program manager, in consultation with their occupational health and infection control departments.

Extended use refers to the practice of wearing the same N95 respirator for repeated close contact encounters with several patients infected with the same respiratory pathogen, without removing the 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 respirator is stored in between encounters to be put on again (‘donned’) prior to the next encounter with a patient.

Recommendations for N95 Respirator Extended Use and Reuse

Respiratory protection program administrators should ensure adherence to administrative and engineering controls to limit potential N95 respirator surface contamination (e.g., use of barriers to prevent droplet spray contamination) and consider additional training and reminders (e.g., posters) for staff to reinforce the need to minimize unnecessary contact with the respirator surface, strict adherence to hand hygiene practices, and proper Personal Protective Equipment (PPE) donning and doffing technique. The following steps should be taken with both extended use and limited reuse to reduce contact transmission:

- 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 using a cleanable face shield over an N95 respirator and/or other steps (e.g., 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.
- Discard any respirator that is obviously damaged or becomes hard to breathe through.

Additional Recommendations for Extended Use

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. When practicing extended use of N95 respirators, the maximum recommended extended use period is 8–12 hours. Respirators should

not be worn for multiple work shifts and should not be reused after extended use. N95 respirators should be removed (doffed) and discarded before activities such as meals and restroom breaks.

Additional Recommendations for Reuse

It is important to consult with the respirator manufacturer regarding the maximum number of donnings or uses they recommend for the N95 respirator model. If no manufacturer guidance is available, limit the number of reuses to no more than five uses per device. N95 and other disposable respirators should not be shared by multiple healthcare personnel.

When practicing reuse of N95 respirators, healthcare personnel should:

- Hang used respirators in a designated storage area or keep them in a clean, breathable container such as a paper bag between uses.
- 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.
- 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.
- Clean hands with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the respirator.
- Avoid touching the inside of the respirator. If inadvertent contact is made with the inside of the respirator, discard the respirator and perform hand hygiene as described above.
- 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.

Decontamination of N95 Respirators

When shortages exist, FFR decontamination and subsequent reuse may be necessary as a crisis capacity strategy. Based on the limited research available, ultraviolet germicidal irradiation, vaporous hydrogen peroxide, and moist heat appear to be the most effective methods to decontaminate FFRs. The respirator manufacturer should be consulted about the impact of the method on their respirators before considering the use of any method.

Decontamination might cause poorer fit, filtration efficiency, and breathability of disposable FFRs as a result of changes to the filtering material, straps, nose bridge material, or strap attachments of the FFR. No current data exist to support the effectiveness of these decontamination methods specifically against SARS-CoV-2 on an FFR. Given the uncertainties about the impact of decontamination on respirator performance, these FFRs should not be worn by healthcare providers (HCPs) when performing or present for an aerosol-generating procedure.

Alternatives to N95 Respirators

NIOSH-approved alternatives to N95 respirators should be used where feasible. These include other classes of filtering facepiece respirators (N99, N100, P95, P99, P100, R95, R99, and

R100), elastomeric half-mask and full facepiece air purifying respirators, and powered air purifying respirators (PAPRs). These alternatives will provide equivalent or higher protection than N95 respirators when properly worn.

Risks for Extended Use and Reuse of N95 Respirators

The most significant risk associated with extended use and reuse of respirators is contact transmission from touching the surface of the contaminated respirator. Respiratory pathogens on the respirator surface can potentially be transferred to the wearer's hands and thus risk causing infection through self-inoculation. Respirators might also become contaminated with other pathogens that have prolonged environmental survival and could be transmitted via self-inoculation or to others via direct or indirect contact transmission.

The Georgia Department of Public Health recommends any facility considering extended use, reuse, or decontamination strategies review the following materials on CDC website:

- Extended use and reuse of N95 FFRs - <https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html>
- FFR decontamination methods - <https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html>
- Strategies to optimize use of N95 respirators - <https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/index.html>