

Risk Alert: Crisis Capacity Strategy for Decontamination and Reuse of Filtering Facepiece Respirators (FFRs)

(Issued: April 6, 2020)

This Risk Alert supplements the recommendations contained in our March 26, 2020 Risk Alert, "Recommendations for Managing Shortages of N-95 Respirators". It describes a CDC-endorsed strategy for quasi-decontamination of filtering facepiece respirators (FFRs) in the event supplies of this critical protective equipment reach crisis levels.

The healthcare sector continues to consume vast quantities of disposable personal protective equipment (PPE) as workers care for COVID-19 patients. Those responsible for procurement have been especially challenged with supplying disposable respirators. Filtering facepiece respirators (FFRs) continue to be the first tier choice for healthcare and medical first responders interacting with those known or suspected of having COVID-19. If FFRs are unavailable, then facemasks are sanctioned until such time as the supply of FFRs is restored. FFRs rated as N, P, R, 95, 99 or 100 are all currently acceptable equipment options against COVID-19. See image for the current recommended complete PPE ensemble.

The U.S. Centers for Disease Control and Prevention (CDC) has compiled evidence-based data for conserving limited supplies of critical PPE. To address the shortages of FFRs in particular, the CDC issued guidance on April 1, 2020, titled, "Decontamination and Reuse of Filtering Facepiece Respirators using Contingency and Crisis Capacity Strategies". One strategy offered by the CDC when the supply of FFRs reach crisis levels is to decontaminate disposable FFRs. The challenge in doing so is to destroy the COVID-19 virus without compromising the protective filtering efficiency of the respirator. Several decontamination techniques have shown promise in accomplishing this objective. Vaporous hydrogen peroxide, ultraviolet germicidal irradiation and moist heat are current front runners. Unfortunately, these methods require specialized equipment and methodology which will take some time to deploy.

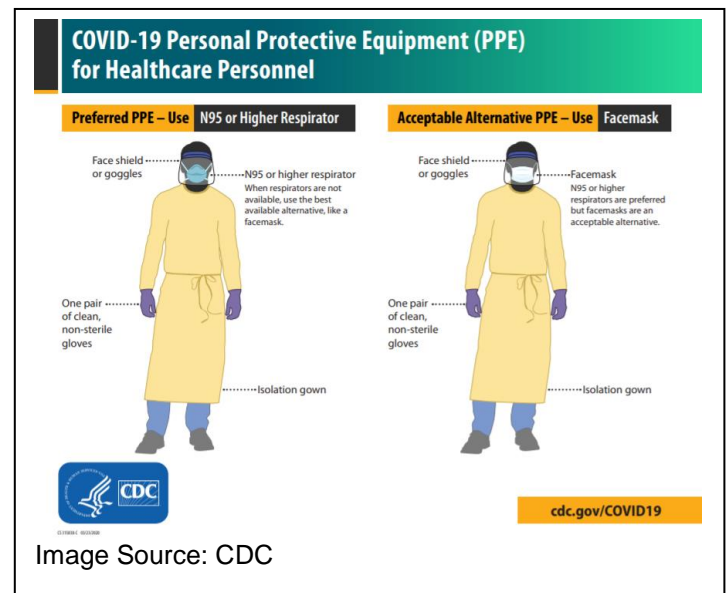


Image Source: CDC

One easily deployed strategy suggested by the CDC for producing safer FFRs for extended use has applicability to medical first responders who may come into close contact (within six feet) of individuals known or suspected of having COVID-19. **The CDC has avoided calling this method "decontamination" and has emphasized that this should only be considered when FFR supplies reach crisis levels.** The method relies on data indicating the COVID-19 virus has a limited lifespan on environmental surfaces, especially cardboard. It employs paper bags and time to eliminate viable virus on the FFR without compromising filtering efficiency.

Paper Bag Quasi-Decontamination Procedure

- Issue each employee/volunteer five FFRs and five breathable paper bags. Paper lunch bags are acceptable for this purpose.
- Label each paper bag with the owner's name as well as the day of the week.

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- Don the FFR for the duration of the shift. If possible, wear a faceshield over the FFR to protect the user and the FFR from potentially infectious droplets and other biological fluids.
- Users will likely remove the faceshield and FFR at various times during the day (breaks, in between calls, etc.). The CDC recommends eye protection including faceshields be discarded (if disposable) or decontaminated (if reusable) after each patient encounter. Suitable decontamination solutions for this purpose include minimum 70% alcohol, 1/3 cup bleach per gallon of water, or any equipment-compatible COVID-19 EPA-approved disinfectant. Wash hands after handling the faceshield and before handling the FFR. Remove the FFR, placing it in a new paper bag for temporary storage between calls that day. After handling the FFR, wash hands again.
- At the end of the shift, remove the faceshield and place it into a plastic bin or pail, this time for end-of-shift decontamination using a methodology described above.
- Wash hands and remove the FFR. Inspect the FFR for significant soiling. Discard if significantly soiled. Place the FFR into the labeled paper bag. Loosely fold the top of the bag over but do not secure tightly. Wash hands after handling the FFR.
- Store the paper bags in a protected area away from employees, preferably one with good ventilation which will facilitate drying. Do not reuse the FFR until at least five days have passed since it was last worn.



- When ready to reuse the FFR, wash hands and put on a clean pair of non-sterile impermeable gloves. Inspect the FFR to ensure its components remain serviceable (e.g, straps are intact; nose clip remains pliable, etc.). Also, if the filters are excessively loaded with particulate making it difficult to breathe, the mask is spent and should be discarded.
- Don the FFR while still wearing gloves. The last step in the donning process is to perform a user seal check. For a free refresher video on how to conduct a user seal check, visit: <https://www.youtube.com/watch?v=pGXiUyAoEd8>. Discard the FFR if you cannot perform a successful user seal check.

Sources:

Centers for Disease Control and Prevention. "Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings." *U.S. Department of Health and Human Services*, April 1, 2020, www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html.

Centers for Disease Control and Prevention. "Decontamination and Reuse of Filtering Facepiece Respirators using Contingency and Crisis Capacity Strategies." *U.S. Department of Health and Human Services*, April 1, 2020, <https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html>

Van Doremalen, N, Bushmaker, T, Morris, D, Holbrook, M, Gamble, A, Williamson, B, Tamin, A, Harcourt, J, Thornburg, N, Gerber, S, Lloyd-Smith, J, de Wit, E, Munster, V. "Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1." *New England Journal of Medicine*, March 17, 2020, www.nejm.org/doi/10.1056/NEJMc2004973.

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For questions regarding this Risk Alert, please contact the Trust's Risk Control Department at 215-706-0101.