

Risk Alert: Recommendations for Managing Shortages of N-95 Respirators

(Issued: March 26, 2020)

This Risk Alert offers recommendations for public employers on managing shortages of respirators required to protect employees and volunteers at high risk of close contact with individuals potentially infected with COVID-19.

N-95 disposable filtering facepiece respirators (pictured) have been in high demand for health care workers and medical first responders dealing with suspected or confirmed COVID-19 infected individuals. The heavy consumption rate in the healthcare sector has caused supply shortages. While manufacturers are ramping up production to meet the demand, below are recommendations for employers of medical first responders, utility workers and other public employees who may potentially encounter COVID-19 infected individuals:

1. Recognize that due to the need to conserve limited supplies of respirators, it is not recommended that employees and volunteers wear air purifying respirators as they go about their normal daily routine. Per current CDC guidelines, N-95 disposable filtering facepiece respirators are part of the recommended minimum personal protective equipment ensemble for those who come into close contact (within 6 feet) of individuals suspected or confirmed of being infected with COVID-19.
2. Conserve existing respirator stockpiles and if appropriate, provide the equipment to medical first responders and health care practitioners who have the greatest risk of infection. For example, public employers might defer non-essential facility improvements/maintenance activities requiring use of respiratory protection (such as saw cutting of masonry block) and instead offer these respirators to law enforcement, EMS and firefighter medical first responders.
3. Limit the number of employees/volunteers in a potentially contaminated area ("hot zone") to the minimum necessary for the response operation. Consistent with CDC guidance, employees/volunteers not required for the response should remain at least six feet distant from potentially infected individuals. Furthermore, as soon as the incident is stabilized, non-essential responders should retreat to a safe distance at least six feet distant from potentially infected individuals. If practical, they should move out of any confined areas containing potentially infected individuals and into fresh air. As soon as practical after the response terminates, medical first responders and others who contacted the patient should perform a field decontamination (i.e., remove and dispose/decontaminate PPE, wash hands with soap and water for 20 seconds or use hand sanitizer with at least 60% alcohol, rubbing hands until dry). All equipment, such as handcuffs, AEDs, frisker gloves, etc. that may have contacted the potentially infected individual should also be decontaminated using an EPA-approved COVID-19 disinfectant.
4. Consider other NIOSH-approved respiratory protection equipment options. Utilize N, P or R, 99 or 100 rated filtering facepiece or reusable, elastomeric half-face or full-face air purifying respirators. For example, CBRN-rated gas masks issued to first responders typically feature a High Efficiency Particulate Air (HEPA) filter (a "100" rated filter). N-95 disposable filtering facepiece respirators possess the minimum recommended filter efficiency for protection against COVID-19. Respirators with higher filter efficiency ratings offer higher levels of protection. Unfortunately, the higher the filter efficiency, the more quickly they will load with ambient dust which will reduce their lifespan. Once a filter becomes difficult to draw air through, the disposable respirator or filtering element needs to be replaced.
5. Self-Contained Breathing Apparatus' (SCBAs) used by firefighters and select water/wastewater utility workers offer high level protection against COVID-19; however, this type of supplied-air respirator has a limited operational lifespan due to the finite air supply.



Risk Alert: Recommendations for Managing Shortages of N-95 Respirators (cont.)

6. With respect to reusable, half-face or full-face elastomeric respirators, the non-disposable components of these respirators, such as the facepiece and straps, should be disinfected after use with an equipment-compatible, EPA-approved COVID disinfectant. After being allowed to dry, the reusable respirator components should be placed in a clean, sealable plastic bag or equivalent hygienic container in preparation for future use. Do not wash disposable filtering facepiece respirators or the filter cartridges of reusable air-purifying respirators. Washing can reduce filter efficiency and compromise the effectiveness of the equipment.
7. Consider limited reuse of disposable N-95 filtering facepiece respirators in situations when there has **not been** contact with a COVID-19 infected or potentially infected individuals. In such cases, wash your hands prior to removing the filtering facepiece respirator. Remove the respirator with clean hands and place it into a clean, sealable plastic bag. Wash your hands again after handling the respirator. Particulate respirators that have **not been** used in potentially COVID-19 infected areas may be reused until there is an increase in breathing resistance due to filter loading or any equipment components fail (such as a head strap breaks).

The CDC has issued “last resort” guidance to healthcare practitioners regarding the limited reuse of disposable respirators (excerpted below). This option should only be considered when stockpiles are at critical levels.

To reduce the chances of decreased protection caused by a loss of respirator functionality, respiratory protection program managers should consult with the respirator manufacturer regarding the maximum number of donnings or uses they recommend for the N95 respirator model(s) used in that facility. If no manufacturer guidance is available, preliminary data (19, 20) suggests limiting the number of reuses to no more than five uses per device to ensure an adequate safety margin. Management should consider additional training and/or reminders for users to reinforce the need for proper respirator donning techniques including inspection of the device for physical damage (e.g., 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?, etc.).

8. The CDC has also issued “last resort” guidance to healthcare practitioners who completely run out of respiratory protection equipment and facemasks (excerpted below). Again, these should only be considered if no other option is available. Two of the CDC recommendations potentially apply to medical first responders:

When No Facemasks Are Available, Options Include

- *Use a face shield that covers the entire front (that extends to the chin or below) and sides of the face with no facemask.*
- *HCP use of homemade masks:
In settings where facemasks are not available, HCP [Health Care Practitioner] might use homemade masks (e.g., bandana, scarf) for care of patients with COVID-19 as a last resort. However, 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.*

Sources:

Centers for Disease Control and Prevention. “Strategies for Optimizing the Supply of N95 Respirators.” *U.S. Department of Health and Human Services*, February 29, 2020, www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/index.html.

Centers for Disease Control and Prevention. “Recommended Guidance for Extended Use and Limited Reuse of N95 Filtering Facepiece Respirators in Healthcare Settings.” *U.S. Department of Health and Human Services*, March 28, 2018, www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html.



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