

APRIL 30, 2020

GETTING OFF THE N95 TREADMILL

Transitioning to Reusable Respirators

A Guide for Frontline Staff During the COVID-19 Crisis



COVID-19 DEMONSTRATES THE NEED FOR BETTER ALTERNATIVES

This pandemic has exposed a number of weaknesses in the nation's emergency preparedness.

One significant problem has been hospitals' inability to provide frontline healthcare workers with enough respiratory equipment that is safe, clean and effective.

This failure stems from a single-minded reliance on just one type of respiratory protection: the disposable N95.

NYSNA believes that now is the time to abandon our total reliance on disposable N95 respirators and increase the use of reusable elastomeric air purifying respirators and powered air purifying respirators (PAPRs).

This equipment can provide higher levels of protection and improved comfort during extended use sessions. At the same time, it could get us off the N95 treadmill and on the path to greater resiliency during times of crisis.

HEALTHCARE WORKERS HIT HARD BY COVID-19

According to a recent study from the CDC, **healthcare workers may account for up to 19% of all COVID-19 cases in the U.S.**¹ This is most likely caused by exposure to droplet transmission, close-range aerosol transmission, and/or direct contact with fomites.

Poor access to effective respirators has played an important role in these staggering statistics. The relaxed CDC and FDA guidance flew in the face of existing evidence on transmission of SARS-CoV-2 and the precautionary principle. Action to reduce risk should not await scientific certainty or shift with the political winds. Hospitals should require the use of NIOSH-certified respiratory protection during all encounters with patients known or suspected to be COVID-19 positive.²

An important step to improving safety is to transition away from our reliance on disposable respirators. **We must increase the use of reusable elastomeric air purifying respirators and PAPRs.** This would address the current shortage of disposable N95 respirators while providing higher levels of respiratory protection for higher risk tasks.

This action could be taken right now and would have an enormous impact. By deploying as few as five PAPRs in the ED or ICU, hospitals could eliminate the need for 50,000 N95s a month.

If healthcare workers prefer elastomeric respirators, nearly fifty could be purchased for the cost of each PAPR, erasing the need for tens of thousands of N95s.

Reusability is a Solution

Increase the use of reusable elastomeric air purifying respirators and PAPRs

This position echoes the recent findings and recommendations of the National Academies of Sciences, Engineering, and Medicine:

- **Research studies have demonstrated the efficacy of reusable elastomeric respirators.**
- **Reusable elastomeric respirators could be a viable option for routine use in health care.**
- **Advantages of integrating reusable elastomeric respirators into day-to-day practice include better preparedness in the event of the need for broader use during an emergency or pandemic situation.**³

NYSNA's positions on COVID-19 respiratory protection also conform to current or prior requirements or recommendations of Cal/OSHA,⁴ NIOSH,⁵ the European Centre for Disease Control (ECDC),⁶ OSHA,⁷ and the CDC.⁸



INHALATION as a Route of Exposure Changes the Game

Respirators become particularly important when hazards, such as SARS-CoV-2, can be inhaled into the lungs. OSHA previously acknowledged that, “healthcare personnel caring for patients who may be infected with a disease requiring droplet precautions may also be at risk of disease transmission from inhaling particles that are present in the room air and are infectious in the short-term and at closer distances.”⁹

However, OSHA has yet to issue any citations during this pandemic for failure to provide respiratory protection. **The Centers for Disease Control (CDC) has yet to acknowledge COVID-19 as an aerosol transmissible disease¹⁰ despite ever increasing scientific evidence.**^{11,12,13,14,15,16,17,18,19,20,21} One study noted, “individuals infected with SARS-CoV-2 have the capacity to produce viral bioaerosols that may remain infectious over long periods of time after production via human shedding and airborne transport.”²²

“healthcare personnel caring for patients who may be infected with a disease requiring droplet precautions may also be at risk of disease transmission from inhaling particles that are present in the room air and are infectious in the short-term and at closer distances.”



COVID-19 Better, not Worse, Respiratory Protection

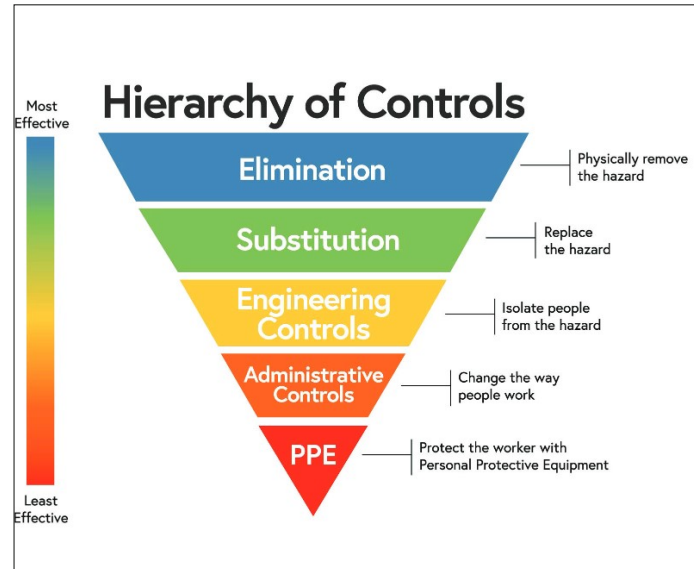
An effective respiratory protection program should operate along a safety continuum that begins with engineering/environmental controls and administrative controls and ends with the individual's personal protective equipment.²³

In the hierarchy of controls, PPE is supposed to be the last line of defense.

The first line of defense for infectious diseases like COVID-19 should be to prevent exposures. This is accomplished by using control measures such as isolation and quarantine. Restricting group gatherings and using local exhaust ventilation are two other methods. When such measures are difficult to implement, or not totally effective at removing the hazard, personal respiratory protection provides the last line of defense.²⁴

While healthcare facilities have implemented some advanced controls during the COVID-19 crisis, progress has been halting, and smaller facilities are usually at a disadvantage due to limited resources.

Because of the likelihood of asymptomatic transmission, virtually every frontline healthcare worker is at risk of exposure during almost every close-up patient interaction. This means effective respiratory protection is needed for more workers, including those not likely to be working in specialized negative air pressure rooms.





BETTER EQUIPMENT is Available, With a Solid Track Record

One survey of healthcare workers found that between 53% and 95% used disposable N95 respirators, between 23% and 77% used PAPRs, and between 24% and 28% used elastomeric half face respirators (EHFRs).^{25,26}

Better equipment is slowly making its way to the frontlines, which is a positive development.

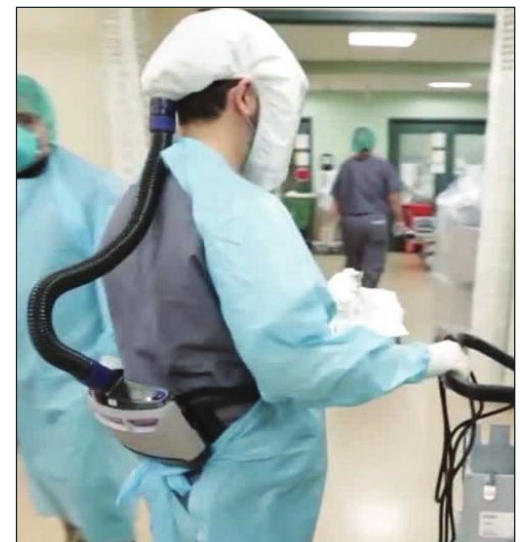
Research shows that EHFRs provided a “feasible and acceptable” alternative to N95s.²⁷ Healthcare workers “can be rapidly fit-tested and trained to use the reusable elastomeric half face respirator.”²⁸ One medical center reported that an EHFR provides “better respiratory protection, is cost efficient, and is less time consuming for fit testing. All persons in direct patient care receive an elastomeric half-mask respirator with N95 particulate filters. Cartridges are changed when dirty, saturated with fluids, difficult to breathe through, or damaged, or during annual fit testing. For individuals unable to wear half mask respirators, PAPRs are available on site . . .”²⁹



ELASTOMERIC REUSABLE HALF-FACE N95



POWERED AIR PURIFYING RESPIRATOR (PAPR)



PAPR FROM THE BACK

BETTER EQUIPMENT is Available, With a Solid Track Record

(continued)

Two facilities that have used elastomeric equipment for some time are the University of Maryland Medical Center and the Texas Center for Infectious Disease, both with good results. In recent years, many facilities in California have increased their reliance on PAPRs, most likely because of the California OSHA standard on airborne infectious agents.

Just recently, Allegheny Health Network purchased 5,000 half-face elastomeric respirators. "We wanted to be proactive and thinking outside of the box because the rest of the world is also trying to buy N95s," says Dr. Sri Chalikonda, AHN's chief medical operations officer. "I think the real special thing, for our network anyway, is by distributing them the way that we did, we've really significantly eliminated our dependence on the disposable N95s."

And during the current crisis in New York City, doctors at Brookdale Hospital and the Brooklyn Hospital Center have been using elastomeric respirators that were donated by a welding supply company (Brookdale) or purchased on E-Bay (Brooklyn). Users report greater comfort and fewer incidents of illness among those wearing them.

Other healthcare institutions have shown that it is possible to use a wide range of equipment, beyond just disposable N95s, and successfully addressed any infection control or other issues.

It is time to get off the N95 treadmill and get on a program of greater resiliency by using elastomeric and PAPR respirators.

For more information on alternative respirator equipment, see the NYSNA Fact Sheet *Options for Healthcare Worker Respiratory Protection*.



WHAT CAN WE DO NOW?

Decision- Makers Must Take Action

- Healthcare facilities that already have elastomerics and/or PAPRs can start using it for the care of COVID-19 patients.
- Communities can contact businesses in their area to locate this equipment.
- Organizations handling donations of equipment should be requesting the elastomerics and PAPRs.
- Governor Cuomo can use his Executive Order to commandeer this equipment from construction companies and other businesses across the state and get it into the hands of healthcare workers.
- The President can use the Defense Production Act to order manufacturers to ramp up production of reusable respirators.

What NYSNA Members and Leaders Can Do

- **File COVID protests of assignment (POAs) over safety hazards, including issues with respiratory protection.**
- **Demand a new N95 for every patient contact. Do not accept reuse.**
- **Demand that management start using elastomeric and PAPER equipment.**
- **Support the NYSNA call for an emergency OSHA standard on infectious disease protection.**

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