

Here is evidence to help you make your case for respiratory protection for members caring for suspected and confirmed COVID-19

Use this resource if the employer claims that COVID-19 is primarily spread through droplet and contact transmission and is not aerosolized.

When the Centers for Disease Control changed its infection control guidance, recommending facemasks instead of N95 respirators for those providing care to suspected and confirmed COVID-19 patients, the agency justified the action based on concern about the supply and supply chains for N95 production. But the *CDC also claimed without evidence that SARS-CoV-2 is also primarily spread via droplet and contact transmission*. In seeming contradiction, the agency still recommends that workers use N95 respirators when the supply chain issues are resolved.

Hospitals and other healthcare employers have been quick to use the argument that respiratory protection is not needed rather than finding other sources of respiratory protection, including other kinds of filtering face piece respirators (N99s, N100s, P100s, elastomerics) and powered air purifying respirators (PAPRs). Many employers have immediately moved from conventional capacity for providing healthcare workers with respiratory protection to crisis capacity, denying it completely, putting healthcare workers' health and ability to provide care in jeopardy.

Much has to be done to increase the production and supply of N95 respirators, including a faster release of the strategic national stocking and enactment of the defense production act to promote immediate manufacture of respirators. Employers need to invest in reusable respirators.

If the employer is claiming that respirators are not needed as per the CDC, there is growing evidence that the virus that causes COVID-19 is aerosolized over short distances and persist for long periods of time. The traditional understanding of infectious disease transmission (contact, droplet and airborne) is 70 years old. There is a growing body of research indicating that many viruses, including coronaviruses, are aerosolized when an infected person speaks and exhales. Surgical masks only protect the wear from droplets caused by coughs and sneezes.

A good explanation is found here:

“COVID-19 transmission messages should hinge on science”

Brosseau, L. March 16, 2020

<http://www.cidrap.umn.edu/news-perspective/2020/03/commentary-covid-19-transmission-messages-should-hinge-science>

Here is sampling of the research that has been done since COVID-19 emerged. Many are small and have not been peer-reviewed yet, but they were published in reputable journals in order to share knowledge while people need the information.

1. In a study from the National Institutes of Health involving scientists from CDC, UCLA and Princeton and, researchers found that SARS-CoV-2 virus was detectable in the air for up to three hours.

“Aerosol and Surface Stability of SARS-CoV-2 as Compared with “SARS-CoV-1,” *New England Journal of Medicine*, Doremalen, N. et al., March 17, 2020.

<https://www.niaid.nih.gov/news-events/new-coronavirus-stable-hours-surfaces>

<https://www.nejm.org/doi/full/10.1056/NEJMc2004973?query=RP>

2. In a small German study, researchers found that the novel coronavirus quickly begins producing high viral loads, sheds efficiently, and grows well in the nose, mouth, nasal cavity, and throat.
“Virological assessment of hospitalized cases of coronavirus disease 2019,” Wölfel, R. et al. *Annals of Internal Medicine*, March 5, 2020.
<http://www.cidrap.umn.edu/news-perspective/2020/03/study-highlights-ease-spread-covid-19-viruses>
<https://www.medrxiv.org/content/10.1101/2020.03.05.20030502v1.full.pdf>
3. Researchers in Wuhan measured the concentration and aerodynamic characteristics of airborne SARS-CoV-2 aerosol in different areas of two hospitals. The findings add support to the hypothesis that virus-laden aerosol deposition may play a role in surface contamination and subsequent contact transmission, particularly on toilets and in areas without negative air pressure and/or frequent air exchanges.
“Aerodynamic Characteristics and RNA Concentration of SARS-CoV-2 Aerosol in Wuhan Hospitals during COVID-19 Outbreak,” Liu, Y. et al. March 8, 2020.
<https://www.biorxiv.org/content/10.1101/2020.03.08.982637v1>
4. When oxygen is delivered through nasal catheter, mask or non-invasive ventilation (NIV), substantial exhaled air is released into the air, which can increase dispersion of the virus, and subsequently increase the risk of nosocomial infection.
“More awareness is needed for severe acute respiratory syndrome coronavirus 2019 transmission through exhaled air during non-invasive respiratory support: experience from China,” Guan, L. et al.
European Respiratory Journal, Feb. 18, 2020.
<https://erj.ersjournals.com/content/55/3/2000352#abstract-2>
5. Wuhan researchers found N95 use protected healthcare workers from infection compared to healthcare workers who did not use N95s. Includes air sampling data.
Wang, X., Pan, Z., & Cheng, Z. (2020). Association between 2019-nCoV transmission and N95 respirator use.
medRxiv.<https://www.medrxiv.org/content/10.1101/2020.02.18.20021881v1>
6. “Recognition of aerosol transmission of infectious agents: a commentary”
This scholarly article explains the distinctions among droplet, airborne and aerosol transmission.
Tellier et al. *BMC Infectious Diseases*, 2019.
<https://doi.org/10.1186/s12879-019-3707-y>
7. “Unmasked: Experts explain necessary respiratory protection for COVID-19”
<http://www.cidrap.umn.edu/news-perspective/2020/02/unmasked-experts-explain-necessary-respiratory-protection-covid-19>