

December 15, 2020

Protective PPE for Nurses and Other Health Care Workers Caring for Patients with Covid-19

Health care employers must implement the fullest protections, including isolating both possible and confirmed Covid-19 cases in negative pressure rooms, providing optimal protective personal protective equipment (PPE) and safe staffing, in order to ensure that health care workers maintain their right to a safe and healthy workplace. Protection of health care workers is a fundamental part of limiting the spread of Covid-19.

Based on the precautionary principle and the emerging science on how Covid-19 is transmitted, these are the optimal standards for PPE for nurses and other health care workers:

Optimal PPE for suspected and confirmed Covid-19 cases must include:

- » **Respiratory protection** A powered air-purifying respirator (PAPR) with a high efficiency particulate air (HEPA) filter is optimal protection.
- » **Eye protection** Most protective would be a full facepiece PAPR that combines both eye and respiratory protection; if a half-facepiece PAPR is used, then goggles or a face shield must also be worn.
- » **Coveralls** Most protective would be coveralls that are fluid resistant and impervious to viral penetration and that incorporate head and shoe coverings.
- » **Gloves** Medical grade gloves

Minimum PPE for suspected and confirmed Covid-19 cases must include:

- » **Respiratory protection** Under no circumstances should nurses or other health care workers be provided respiratory protection less than an N95 filtering facepiece respirator (single use) when caring for suspected or confirmed Covid-19 patients.
- » **Eye protection** Goggles or a face shield.
- » **Isolation gown** Gown that is at least fluid resistant.
- » **Gloves** Medical grade gloves

While scientific knowledge about Covid-19 and the virus that causes it, SARS-CoV-2, is still growing, it is of the utmost importance that health care employers and public health agencies follow the **precautionary principle** when selecting protective measures — **we cannot wait until we know for certain that something is harmful before action is taken to protect people's health.** Or the idea that it is “better safe than sorry.”

OUR PATIENTS. OUR UNION. OUR VOICE.



Scientific evidence underlines the importance of airborne precautions for Covid-19. Covid-19 patients can emit infectious respiratory aerosols every time they breathe, speak, sneeze, cough, or have aerosolizing medical procedures performed.

Overwhelming scientific evidence indicates that airborne or aerosol transmission is the predominant mode of SARS-CoV-2 transmission. Respiratory aerosols can be emitted by an infected person through breathing, talking, coughing, or sneezing. Even asymptomatic infected cases can transmit SARS-CoV-2.

These infectious respiratory aerosols vary in particle size and can remain suspended in the air for hours and travel through the room and ventilation systems.

Studies about SARS-CoV-2 satisfy the criteria for classifying an infectious disease as airborne—the virus must be transmitted via aerosol particles less than 5 µm in diameter and be capable of causing infection.

- » Studies have found that SARS-CoV-2 can survive and remain infectious suspended in aerosols for at least 16 hours.
- » Researchers have recovered infectious SARS-CoV-2 from the air in Covid-19 patients' hospital rooms, collected at nearly 16 feet away from the patient.
- » Airborne SARS-CoV-2 particles were less than 5 µm in diameter and were detected in the absence of a cough or aerosol generating procedures.

Contact precautions are also important. SARS-CoV-2 is unusually good at surviving in the environment.

While airborne/aerosol transmission is the predominant mode, contact transmission is also a significant risk in the spread of SARS-CoV-2. Many viruses, like SARS-CoV-2, can be transmitted through contact with contaminated surfaces or objects.

- » Studies have documented extensive environmental contamination around hospitalized Covid-19 patients with both severe and mild disease and in spaces where cases are isolated.
- » While only a portion of those studies have tested for infectivity of virus recovered from surfaces, other studies have found that SARS-CoV-2 can survive for long periods of time in the environment, including up to 21 days on N95 respirators, up to 14 days on stainless steel, and up to 4 days on paper and glass.

For more information on health care worker protections for Covid-9 visit:

<https://www.nationalnursesunited.org/covid-19>

References

- Bourouiba, Lydia, "Turbulent Gas Clouds and Respiratory Pathogen Emissions: Potential Implications for Reducing Transmission of Covid-19," *JAMA*, March 26, 2020.
- Chin, Alex W H et al., "Stability of SARS-CoV-2 in different environmental conditions," *The Lancet Microbe*, April 2, 2020.
- Fears, Alyssa C. et al., "Persistence of Severe Acute Respiratory Syndrome Coronavirus 2 in Aerosol Suspensions," *Emerging Infectious Diseases*, June 22, 2020.
- Guo, Zhen-Dong et al., "Aerosol and Surface Distribution of Severe Acute Respiratory Syndrome Coronavirus 2 in Hospital Wards, Wuhan, China, 2020," *Emerging Infectious Diseases*, April 10.
- Kasloff, Samantha B., et al., "Stability of SARS-CoV-2 on Critical Personal Protective Equipment," medRxiv, June 12, 2020.
- Lednicky et al., "Viable SARS-CoV-2 in the air of a hospital room with Covid-19 patients," *International Journal of Infectious Diseases*, September 15, 2020.
- Lee et al., "Clinical Course and Molecular Viral Shedding Among Asymptomatic and Symptomatic Patients With SARS-CoV-2 Infection in a Community Treatment Center in the Republic of Korea," *JAMA Internal Medicine*, August 6, 2020.
- Ma et al., "Covid-19 patients in earlier stages exhaled millions of SARS-CoV-2 per hour," *Clinical Infectious Diseases*, August 28, 2020.
- Santarpia et al., "The Infectious Nature of Patient-Generated SARS-CoV-2 Aerosol," medRxiv, July 21, 2020.
- Tang et al., "Aerosol transmission of SARS-CoV-2? Evidence, prevention and control," *Environment International*, 144: 106039.
- Wolfel, Roman, et al., "Virological assessment of hospitalized patients with Covid-2019," *Nature*, April 1, 2020.