

# Hospital Operations Toolkit for COVID-19

## Infection Prevention and Control:

### Personal Protective Equipment

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While elimination, substitution, engineering, and administrative controls are generally considered more effective than personal protective equipment (PPE), properly used PPE is essential to protecting hospital staff from occupational exposures to COVID-19.

Safe use of PPE is dependent on thorough staff training. This includes:

- Adhering to the hospital's respiratory and infection control protection program.
- Ensuring all staff have access to and understand which PPE items are appropriate for their role or the location within the hospital where they work.
- Training staff on proper donning and doffing techniques for all PPE they may be asked to wear.
- Ensuring that staff who need to wear N95 filtering facepiece respirators have completed appropriate medical screening and fit testing.
- Ensuring that staff who wear powered air-purifying respirators (PAPRs) or elastomeric full/half facepiece respirators have completed training for appropriate use.
- Educating staff on proper PPE disposal practices.

Supply chain uncertainty has complicated the ability of hospitals to acquire preferred PPE items in the necessary quantities. Many hospitals have been forced to use substitutes for the items they typically ordered prior to the pandemic. The use of unfamiliar PPE items can be associated with improper use and increased transmission risk. To counter these challenges, hospitals have done the following:

The [Supply Chain and Resource Management](#) section includes information on hospital capacity issues.

- Increased training to ensure staff understand how to use new PPE items.
- Distributed posters showing properly donned and doffed PPE ensembles.
- Made trained fit testers available to enable fit testing for staff using N95 respirators that are from a different manufacturer than normally used.
- Ensured staff who need to wear N95 respirators are competent in performing a seal check, particularly if they are using a device for an extended time, that has been decontaminated for reuse, or is a model other than what they usually use.

- Restricted the use of masks that have exhalation valves or vents that allow virus particles to escape.
- Provided guidance on transporting patients with suspected or confirmed COVID-19 within the facility. Non-intubated patients should wear a surgical mask while intubated patients should have a high-efficiency particulate air filter.

Supply chain challenges have also necessitated the implementation of contingency and crisis strategies by many hospitals to optimize their supply of PPE. These non-conventional practices may increase staff anxiety regarding their own safety. While the potential risks associated with PPE preservation are currently the subject of intense study, there are still many unknowns since the COVID-19 pandemic is the first time many of these preservation practices have been implemented on a widespread basis. Hospital infection prevention activities associated with these preservation practices include:

The [Crisis Standards of Care](#) section includes information on hospital operations across a spectrum of conventional care to crisis care.

- Maintaining awareness of current federal guidance associated with PPE substitution, use of expired products, extended use, and reuse of decontaminated items.
- Educating staff as the science and guidance evolve to reassure them.
- Establishing protocols for the implementation of preservation practices, including when to shift incrementally back toward conventional PPE practices as able. This includes clear policies on when doffing is required versus extended use.
- Developing a safe process for disinfecting and storing reused items between uses and requirements for when to discard (e.g., unable to maintain fit or becomes contaminated).

The rapidly increasing knowledge surrounding COVID-19 has also led to frequently changing PPE guidance due to greater understanding of how the SARS-CoV-2 virus is transmitted. Hospitals have adapted by:

- Maintaining awareness of current federal, state, local, and health system guidance on PPE selection and use. This includes having a process to adjust PPE policies when guidance from different government agencies or the health system is not consistent.
- Providing just-in-time training or educating staff to align with shifting guidance.
- Designating staff as “PPE Spotters” whose primary function is to observe and ensure proper donning, doffing, and use of PPE.
- Posting signage throughout the hospital of appropriate PPE in each area (e.g., elevators, breakrooms, nurses’ stations).
- Requiring universal masking by all visitors, including contractors and vendors.

### *Resources Related to PPE for Infection Prevention and Control*

- Centers for Disease Control and Prevention:
  - [Infection Control Guidance for Healthcare Professionals about Coronavirus \(COVID-19\)](#)

- [Optimizing Personal Protective Equipment \(PPE\) Supplies](#)
- Cleveland Clinic: [PPE](#)
- Emory Healthcare: [Personal Protective Equipment \(PPE\) Resources](#)
- Hackensack Meridian Health: [Infection Prevention and Personal Protection](#)
- Infectious Diseases Society of America: [Guidelines on Infection Prevention in Patients with Suspected or Known COVID-19](#)
- Mount Sinai: [Personal Protective Equipment \(PPE\) Directory and Guidelines](#)
- National Emerging Special Pathogens Training and Education Center:
  - [COVID-19 PPE Guidance](#)
  - [Guide My PPE](#)
  - [N95 User Seal Check Animation](#)
- Nebraska Medicine: [Personal Protective Equipment \(PPE\)](#)
- New York City Health + Hospitals: [COVID-19 Resurgence Toolkit](#)
- Occupational Safety and Health Administration:
  - [COVID-19 Healthcare Emergency Temporary Standard](#)
  - [Eye and Face Protection Standard](#)
  - [Fit-Testing Procedures](#)
  - [Hand Protection Standard](#)
  - [Healthcare Workers and Employers](#)
  - [PPE Standard](#)
  - [Respirator Medical Evaluation Questionnaire](#)
  - [Respiratory Protection Standard](#)
  - [User Seal Check](#)
- Spectrum Health: [Personal Protection Equipment \(PPE\)](#)
- University of California San Francisco: [Personal Protective Equipment \(PPE\)](#)
- University of Kentucky Health Care: [PPE and Infection Control](#)
- Yale New Haven Health: [Personal Protective Equipment \(PPE\)](#)

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