

PERSONAL PROTECTIVE EQUIPMENT (PPE) STRATEGIES FOR SCARCE RESOURCE SITUATIONS

RECOMMENDATIONS

Emphasize 'Hierarchy of Controls' Protection at all times

- Elimination of hazard (patients able to care for themselves may be asked to isolate and practice self-care)
- Substitution (may be difficult in many emergency events)
- Engineering Controls (design physical means of separation, Airborne Infection Isolation (All) rooms, etc.)
- Administrative Controls (limit exposure to authorized staff only, etc.)
- Personal Protective Equipment (considered a last resort means of protection)

General Use of Personal Protective Equipment (PPE)

- Use surgical N95 respirators only for HCP who need protection from both airborne and fluid hazards (e.g., splashes, sprays). If needed but unavailable, use face shield over standard N95 respirator.
- Use alternatives to N95 respirators where feasible (e.g., other disposable filtering facepiece respirators, elastomeric respirators with appropriate filters or cartridges, powered air purifying respirators)

PPE Guidance Documents from CDC and FDA

Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings – 03/10/2020

<https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html>

FDA - N95 Respirators and Surgical Masks (Face Masks) – Emergency Use Authorization

<https://www.fda.gov/medical-devices/personal-protective-equipment-infection-control/n95-respirators-and-surgical-masks-face-masks>

CDC - Release of Stockpiled N95 Filtering Facepiece Respirators Beyond the Manufacturer -Designated Shelf Life: Considerations for the COVID-19 Response

<https://www.cdc.gov/coronavirus/2019-ncov/release-stockpiled-N95.html>

CDC - Strategies for Optimizing the Supply of N95 Respirators

https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fhcp%2Frespirator-supply-strategies.html

Checklist for Healthcare Facilities: Strategies for Optimizing the Supply of N95 Respirators during the COVID-19 Response

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/checklist-n95-strategy.html>

CDC – NIOSH - Recommended Guidance for Extended Use and Limited Reuse of N95 Filtering Facepiece Respirators in Healthcare Settings

<https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html>

Conventional Operations

Engineering Controls

- Isolate patients in an airborne infection isolation room (AIIR)
- Use physical barriers such as glass or plastic windows at reception areas, curtains between patients, etc.
- Properly maintain ventilation systems to provide air movement from a clean to contaminated flow direction

Administrative Controls

- Limit the number of patients going to hospitals or outpatient settings by screening patients for acute respiratory illness prior to non-urgent care or elective visits
- Exclude all HCP not directly involved in patient care (e.g., dietary, housekeeping employees)
- Reduce face-to-face HCP encounters with patients (e.g., bundling activities, use of video monitoring)
- Exclude non-essential visitors to patients with known or suspected COVID-19
- Implement source control: Identify and assess patients who may be ill with or who may have been exposed to a patient with known COVID-19 and recommend they use facemasks until they can be placed in an AIIR or private room.

- Cohort patients: Group together patients who are infected with the same organism to confine their care to one area
- Cohort HCP: Assign designated teams of HCP to provide care for all patients with suspected or confirmed COVID-19
- Use telemedicine to screen and manage patients using technologies and referral networks to reduce the influx of patients to healthcare facilities
- Train HCP on indications for use of N95 respirators
- Train HCP on use of N95 respirators (i.e., proper use, fit, donning and doffing, etc.)
- Implement just-in-time fit testing: Plan for larger scale evaluation, training, and fit testing of employees when necessary during a pandemic
- Limit respirators during training: Determine which HCP do and do not need to be in a respiratory protection program and, when possible, allow limited re-use of respirators by individual HCP for training and then fit testing
- Implement qualitative fit testing to assess adequacy of a respirator fit to minimize destruction of N95 respirator used in fit testing and allow for limited re-use by HCP

Contingency Operations

- **Administrative Controls**
- Decrease length of hospital stay for medically stable patients with COVID-19 who cannot be discharged to home for social reasons by identifying alternative non-hospital housing
- **PPE Use and Respiratory Protection**
- Use N95 respirators beyond the manufacturer-designated shelf life for training and fit testing
- Extend the use of N95 respirators by wearing the same N95 for repeated close contact encounters with several different patients, without removing the respirator (i.e., recommended guidance on implementation of extended use)
- Implement re-use of N95 respirators by one HCP for multiple encounters with different tuberculosis patients, but remove it after each encounter
- **PPE Supply Security**
- Secure N95 respirators, face masks, and other personal protective equipment in a locked or restricted storage area easily accessible only to those authorized to use this PPE to perform the essential functions of their job.

Crisis Operations

- **Resource Scarcity**
- Use respirators as identified by CDC as performing adequately for healthcare delivery beyond the manufacturer-designated shelf life
- Use respirators approved under standards used in other countries that are similar to NIOSH-approved N95 respirators but that may not necessarily be NIOSH-approved
- Implement limited re-use of N95 respirators for patients with COVID-19, measles, and varicella
- Use additional respirators identified by CDC as NOT performing adequately for healthcare delivery beyond the manufacturer-designated shelf life
- Prioritize the use of N95 respirators and facemasks by activity type with and without masking symptomatic patients
- **Resource Nonexistence**
- Exclude HCP at higher risk for severe illness from COVID-19 from contact with known or suspected COVID-19 patients (i.e., those of older age, those with chronic medical conditions, or those who may be pregnant)
- Designate convalescent HCP for provision of care to known or suspected COVID-19 patients those who have clinically recovered from COVID-19 and may have some protective immunity to preferentially provide care