Coronavirus (COVID-19) Pandemic: Personal Protective Equipment Preservation Best Practices

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What Do I Do?

Reduce
Think of ways to reduce your use of PPE.

Reuse
Implement ways to safely decontaminate and reuse PPE.

Repurpose
Use alternative types or sources for PPE.
How Do I Do It?

- Non-healthcare industries should conserve medical PPE for medical care.
- Maintain social distancing.
- If feasible, conduct patient or civilian interactions outdoors or in large open spaces.
Reduce usage rate of PPE

Contingency – Engineering, Barriers, and Technology
- Use barrier controls when possible to limit the need for PPE (e.g., masking patients, plexiglass/acrylic barriers, car windows, improved ventilation systems).
- Limit visitor access and offer technology-based alternatives (e.g., video chat).
- Use tele-consultation, internet-based interviews, or remote camera-based observation when available.
- When clinically appropriate, place IV towers and ventilators outside of patient rooms to allow monitoring and management without entering the room.
- Use automated or “no-contact” delivery of food and supplies.

Contingency – Work Practices and Administrative Changes
- Minimize number of people with and frequency of direct patient or civilian contact.
- Work with cohorts of patients/civilians who test positive for COVID-19, rather than single subjects.
- Consolidate activities to a single visit (e.g., meals, welfare checks, vitals checks, medication administration).
- Modify supporting staff workflow (e.g., environmental services, food and nutrition) to limit PPE use.

Contingency – Personal Protective Equipment
- Extend use-times of undamaged, non-visibly soiled PPE beyond single patient contact and other standard practice durations.
- Note: OSHA has relaxed enforcement of annual fit-testing requirements for N-95 filtering facepiece respirators (FFRs) - https://www.osha.gov/news/newsreleases/national/03142020.
Reuse

REUSE PPE through optimization, decontamination, and reuse procedures

- **Contingency** - Implement strategies to optimize the supply of PPE and equipment: https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/index.html
- **Crisis** - Implement expanded facility-based PPE reuse policies and procedures.
- **Crisis** - Track “check in” and “check out” of PPE designated for reuse. Each worker is provided specific PPE at the beginning of the shift. At the end of the shift, all PPE is labeled, collected, and stored for reuse.
- **Crisis** - Implement guidance for decontamination and reuse of FFRs:
REPURPOSE alternate types and sources of PPE

- Contingency - Use other NIOSH-approved respirators instead of N-95 FFR when respiratory protection is required. See https://www.fda.gov/media/135763/download. Examples include:
  - powered, air-purifying respirators (PAPRs);
  - reusable air-purifying respirators (elastomeric half and full facepiece respirators);
  - other disposable air-purifying particulate FFRs.

- Contingency - Seek alternative supplies of PPE.
  - Encourage community members to donate private stocks of PPE to your facility.
  - Seek PPE and other equipment from dentist offices, veterinarians, individuals, and other sources, including businesses that are not active.
  - Use commercial sources of industrial disposable coveralls, face shields, goggles, shoe covers, etc.

- Crisis - Use N-95 FFRs beyond their expiration dates if certain conditions are met.

- Crisis - Use FDA authorized imported, non-NIOSH-approved disposable FFRs.
Communicate, Communicate, Communicate

To ensure uniform application of modified practices, processes, and procedures, all workers must be trained, with recommended elements including:

- Reasons for changes from standard practice and for implementing contingency and crisis practices during COVID-19 related PPE shortages
- New PPE guidance (FDA, CDC, DOJ) related to COVID-19
- Proper methods to conduct new or changed work practices (e.g., staffing, social distancing)
- Methods to install or utilize any barrier controls (e.g., patient masking, Plexiglas shields)
- Proper donning and doffing of PPE to minimize self-infection
- Proper hand hygiene
Gowns are a critical part of Personal Protective Equipment (PPE)
Similar use rates as Respirators & Masks and Eyewear & Face Shields

Gowns:
Isolation & Surgical Gowns

~375 per COVID-19 hospitalization

Current U.S. guidelines do not require use of gowns that conform to any standards.

Other personal protective equipment (PPE):

Respirators & Masks
- N95 Respirator
- Surgical Mask
- Procedure Mask

~375 per COVID-19 hospitalization

Eyewear & Face Shields
- Eyewear
- Face Shield

~375 per COVID-19 hospitalization

Gloves

~1,500 per COVID-19 hospitalization
As supply decreases, different strategies are used to optimize PPE

**Strategies**

**Conventional**
- Usual Standard of Care
- Cached and usual supplies available

**Contingency**
- Functionally equivalent care
- Conservation, adaptation, & substitution of supplies
- Use during **expected** shortages

**Crisis**
- Crisis standards of care
- Critical supplies lacking
- If no gowns, use gown alternatives
- Consider with **known** shortages

**Severity of shortage**

Source: [CDC Optimization Guidance](https://www.cdc.gov)