

**[High Priority] - S0400 : [COVID-19] Strategies to Conserve Existing Supplies of Personal Protective Equipment [ECRI Exclusive Special Report]
Medical Device Special Report**

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UMDNS Terms:

- Gloves [11879]
- Gowns, Isolation [15037]
- Gowns, Medical [11898]
- Eyewear, Safety [15697]
- Shields, Splash, Face [11961]
- Surgical Masks [12458]

Geographic Regions: Worldwide

Suggested Distribution: Clinical/Biomedical Engineering, Critical Care, Emergency/Outpatient Services, Infection Control, Nursing, Risk Management/Continuous Quality Improvement, Internal Medicine, Staff Education, Materials Management

Problem:

1. Conserving the use of existing personal protective equipment (PPE) supplies can help healthcare facilities preserve them for the most essential patient care activities.
 1. The COVID-19 pandemic is leading to worldwide shortages in PPE.
 2. Three major themes emerge in guidelines and best practices from multiple organizations and governing bodies:
 1. Finding alternative sources of PPE
 2. Extending the use of existing PPE
 3. Conserving/preserving the use of PPE
2. Inefficient use of existing PPE supplies can cause hospitals to burn through their current stockpiles at a faster rate and expedite shortages.
 1. This problem creates a risk of exposure to healthcare workers due to insufficient PPE.

ECRI Recommendations:

In addition to the actions that may have already been taken, such as cancelling elective surgeries and deferring to or adopting telemedicine for non-urgent outpatient procedures, here are some additional recommendations specific to triaging and treating patients:

1. When screening and triaging patients,
 1. Use telemedicine, remote video calls, and telephone hotlines for initial evaluation.
 1. The British Journal of Medicine (BJM) has a [visual graphic](#) to aid in assessment of patients via video call in a primary care setting.
 2. Additionally, where possible, consider expanding telemedicine capabilities to allow for remote monitoring of patients (e.g., using home care devices). This could be helpful for patients with mild symptoms.
 3. Designate care providers who can do daily check-ins on patients being monitored at home (e.g., a phone or video call).
 2. Use physical barriers to separate hospital personnel and patients in triage areas. This can reduce the number of close patient/provider encounters and reduce the number of possible PPE changes.
 1. Use glass or plastic windows in reception areas (e.g., intake desk at emergency department, triage station, information booth, pharmacy drop-off/pick-up windows) and curtains between patients in shared areas.
 2. Consider establishing triage stations outside the facility or in lower acuity settings to screen individuals before they enter or having patients wait in their vehicles or outside the facility where they can be contacted by mobile phone when it is their turn to be evaluated.
 3. We are also aware of hospitals using negative pressure tents in hallways to isolate patients
 3. Cohort/group patients.
 1. Consider grouping patients entering the facility as suspected COVID and non-COVID with physically separate triage areas. If possible, have separate entrances for the two groups of patients.
 2. CDC recommends placing suspected or confirmed COVID-19 patients in private rooms with the door closed (and private bathrooms where possible).
 3. The same set of PPE and devices can potentially be used between confirmed COVID-19 patients.
 4. Recognize that private rooms may become difficult to find as the infection spreads and most patients entering a healthcare facility are suspected COVID-19 unless confirmed otherwise.
2. Consider using specific types of PPE based on the personnel and their role in patient care.
 1. CDC recommends cloth masks for all patients and visitors to address pre-symptomatic and asymptomatic transmission.

2. CDC also recommends cloth masks for HCP whose job duties do not require PPE (e.g., clerical personnel) for source control. Other HCP (such as nurses, physicians) might wear their cloth masks when not engaged in direct patient care activities. However, switching PPE may increase risk of self-infection.
 3. It is important to note that not all patients may tolerate a mask, such as patients with pre-existing respiratory conditions or small children.
 4. For strategies for addressing specific PPE shortages, refer to the CDC guidelines and ECRI's Alerts ([H0577](#) [N95 respirators], [H0578](#) [isolation gowns], [H0584](#) [eye protection], [H0586](#) [gloves], [H0591](#) [facemasks]).
3. When treating infected patients,
 1. Cohort healthcare workers by assigning designated care units and clinical teams to COVID-19 patients.
 1. Consider designating entire units within the facility, with dedicated HCP to care for patients with suspected or confirmed COVID-19 cases.
 2. CDC also recommends that patients with different respiratory pathogens may be housed on the same unit but only patients with the same respiratory pathogen be housed in the same room.
 3. Ensure back-up coverage in the event that one or more personnel from the teams get infected. For example, adding additional healthcare personnel to the team (preferably ones without any pre-existing health conditions that are known to lead to bad COVID-19 outcomes).
 2. Bundle patient care activities to reduce the number of discrete patient encounters. For example,
 1. Batching medications
 2. Checking vital signs during medication administration
 3. Having food delivered by healthcare workers while they are performing other care
 4. Labs drawn by clinicians rather than phlebotomists
 3. Reduce patient transfer and movement out of the designated unit.
 1. When feasible, consider having the care teams do some of the routine cleaning after patient care and minimizing the use of transport staff by having the care teams hand off patients directly to the receiving team.
 1. See ECRI's recommendations/checklist for frontline staff on cleaning and disinfection, and listen to [Killin g the Spread webinar](#) , and view our [Checklist](#) for further information.
 2. Consider bringing portable equipment (e.g., x-ray machines) to the designated COVID-19 unit to reduce the need for patient movement.
 4. Consider implementing out-of-room video monitoring and therapy delivery.
 1. Use video technology to view and monitor COVID-19 patients from outside the room to reduce patient contact for visual checks. Hospitals are using a range of technologies from eICU to video baby monitors to facilitate video monitoring.
 2. Place infusion pumps outside the room to provide access and to investigate alarms and change medications.
 1. Refer to ECRI's [webinar](#) and [Alert](#) on this topic for best practices.
 3. Place controls for ventilators and anesthesia machines outside the room so that clinicians can remotely monitor alarms and modify settings.
 4. Leverage existing solutions such as central monitors and ancillary displays to monitor patients' vitals remotely.

Background:

1. A number of organizations have published guidance and best practices for hospitals regarding ways to manage PPE supply shortages.
2. This Special Report pulls together best practices from CDC, ECRI, ISMP, IHI, and other organizations on solutions to conserve the usage of PPE within healthcare facilities.
3. For additional strategies for combating shortages of specific PPE, such as respirators, gowns and face masks, and other COVID-19-related resources, please refer to the [ECRI COVID-19 resource center](#) .

References:

1. https://www.ecri.org/components/HRSA/Pages/RSE041320_A.aspx
2. <https://www.ecri.org/landing-covid-infusion-therapy>
3. <https://assets.ecri.org/PDF/COVID-19-Resource-Center/COVID-19-Clinical-Care/COVID-Alert-Inadequate-Gown-Supplies.pdf>
4. <https://assets.ecri.org/PDF/COVID-19-Resource-Center/COVID-19-Clinical-Care/COVID-Alert-N95-Shortage-Strategies.pdf>
5. <https://assets.ecri.org/PDF/COVID-19-Resource-Center/COVID-19-Clinical-Care/COVID-Alert-Infusion-Pump-Disruptions-2.pdf>
6. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/index.html>
7. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html>
8. https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-hcf.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fhealthcare-facilities%2Fguidance-

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Comments:

- This alert is a living document and may be updated when ECRI receives additional information.

Source(s):

- 2020 May 4. ECRI Researched Report