

PPE Supply Shortage Mitigation Strategies for COVID-19 Response and Recovery

Numerous supply challenges exist as of June 2020 that may not be resolved to a sufficient level for several months. COVID-19 patient care may remain at a steady plateau for some time, particularly as changes in human interaction occur with a careful, gradual restart of segments of the Vermont, national and international economy. In addition, the severity of a possible return of SARS-CoV-2 is unknown but it is likely to coexist with seasonal influenza virus cases in the fall and winter of 2020-2021. The latter makes the development of a PPE stockpile critical. This is all coincident with hospitals working to get back to normal operations. As they do, they may inadvertently compete for the same PPE for surgical and other procedures.

Some PPE supplies, like nitrile gloves, surgical gowns and N-95 respirators are in very short supply. To help with both the immediate and longer term PPE shortages and supply challenges for COVID-19 patient care, any future approved surgical procedures that rely on similar PPE and stockpiling for combined seasonal influenza virus/coronavirus illness, the following recommendations are put forth to better preserve current stockage:

1. Enhance PPE conservation.
 - a. Sterilize N-95 respirators using hospital sterilizers approved for this around the State.
 - b. Preserve medical nitrile and latex surgery gloves for medical and surgical procedures.
 - i. The UVM Technical Services Partnership (TSP) tested specific samples of industrial nitrile gloves and found they provide hand protection equivalent to medical nitrile gloves. Different manufacturers and product lines may have varied quality and specification and should be evaluated separately.
 - ii. Reusable rubber gloves, disposable food safety gloves and other appropriate gloves should be used for custodial and food services, and for work with chemical hazards instead.
 - c. Use and focus acquisition strategies on launderable, sterilizable and reusable isolation and surgical gowns instead of disposables.
 - i. Supplies of launderable, sterilizable or reusable gowns must be identified.
 - ii. If not included with a supplier, laundry, sterilizing and reuse services should be contracted for use by facilities or agencies representing collective facilities.
 - iii. Laundry, sterilizing and reuse guidance must be distributed to instruct users on their key role.

- d. Conserve goggles for the most hazardous aerosol-generating procedures.
 - i. Face shields are being manufactured locally and are in better supply than goggles.
 - ii. Most procedures can be done using face shields to protect the eyes.
 - iii. Practice indicates that use of an N-95 with a face shield prevents COVID-19 infection via the eyes likely due to the negative pressure around the mouth and nose and the still air near the eyes.
2. Foster the development of locally produced liquid protection apparel using *ANSI/AAMI Standard PB70:2012*.
 - a. Locally produced solutions developed throughout the State for face shields, face masks and hand sanitizer are good models.
 - b. Source materials that meet the ANSI/AAMI Standard are available in the marketplace.
 - c. The ANSI/AAMI Standard may be purchased from the American National Standards Institute.
 - d. The UVM TSP has a sewing template for gowns and can identify who conducts testing for gowns produced locally. The TSP may be reached through Ray Forsell at Raymond.Forsell@its.uvm.edu.
3. As a contingency, it may be useful to purchase gown alternatives such as rain suits or liquid impermeable aprons for use if the State reaches crisis standards of care during a resurgence of coronavirus infection.
4. Consider goggle alternatives or donations for a stockpile for a coronavirus resurgence.
 - a. Goggles for Docs (<https://gogglesfordocs.com/>) is one alternative for donations.
 - b. Winter sports shops may have excess supply from the abbreviated 2019-2020 winter sports season.
5. Seek donations of PPE for your stockpile.
 - a. Donations must be verified for protective performance quality like purchases.
 - b. Donations of new PPE eliminate the need for disinfection.
 - c. Donations of used PPE allow Vermonters to contribute to COVID-19 Response.