COVID-19: Strategies for Optimizing Supply of PPE

This guidance is based on the best information currently available and will be updated when appropriate. Please visit dshs.texas.gov/coronavirus and cdc.gov/coronavirus for updates.

The purpose of this information is to direct healthcare facilities on potential options for optimizing supplies of PPE when there is a limited supply in times of sudden, unexpected increases in patient volume that severely challenge or exceed the present capacity of a facility (known as surge capacity). These options are based on Centers for Disease Control and Prevention (CDC) guidelines for optimizing the supply of PPE (CDC strategy for PPE). These measures assume that facilities have already implemented other engineering and administrative control measures, including:

- Limiting the number of patients going to hospital or outpatient settings
- Excluding healthcare providers (HCP) not directly involved in patient care
- Limiting face-to-face HCP encounters with patients
- Excluding visitors to patients with known or suspected COVID-19
- Source control
- Cohorting patients and HCP
- Maximizing telemedicine
- Using airborne isolation rooms for known/suspected COVID-19 patients or physical barriers to separate HCP from potentially-infectious patients
- Maintaining ventilation systems with appropriate air flow and filtration exchange rates

Definitions

**Conventional Capacity:** measures consist of providing patient care without any change in daily contemporary practices.

**Contingency Capacity:** measures may change daily standard practices but may not have significant impact on the care delivered to the patient or the safety of the HCP. These practices can be used temporarily during periods of expected PPE shortages.

**Crisis Capacity:** strategies that are not commensurate with U.S. standards of care. These measures, or a combination of these measures, may need to be considered during periods of known PPE shortages.
# Conventional Capacity Strategies for Optimizing PPE Supplies

<table>
<thead>
<tr>
<th>Eyes</th>
<th>Gowns</th>
<th>Facemasks</th>
<th>N95 Respirators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use eye protection according to product labeling and local, state, and federal requirements.</td>
<td>Use isolation gown or alternatives that offer equivalent or higher protection. Sterile surgical gowns should be prioritized for surgical or sterile procedures.</td>
<td>Use facemasks according to product labeling and local, state, and federal requirements.</td>
<td>Ensure training for HCP on indications for use of N95 and proper use. Just-in-time fit-testing to ensure fit-testing for HCPs who provide direct patient care. Limit waste of respirators during trainings. Use the same respirators for training and fit-testing when able and prioritize qualitative fit-testing (which reduces waste of respirators). Limit use of surgical N95 respirators to HCPs at risk of both airborne and fluid hazards (e.g. splashes, sprays). If there are no surgical N95 respirators, face shields should be worn over standard N95 respirators during these encounters. Use of alternatives to N95 respirators where feasible, for example powered air purifying respirators (PAPRs), which provide equivalent or higher protection.</td>
</tr>
</tbody>
</table>
Contingency Capacity Strategies for Optimizing PPE Supplies

<table>
<thead>
<tr>
<th>Eyes</th>
<th>Gowns</th>
<th>Facemasks</th>
<th>N95 Respirators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selectively cancel elective and non-urgent procedures and appointments for which eye protection is typically used by HCP. Shift eye protection supplies from disposable to reusable devices (i.e., goggles and reusable face shields). Implement extended use of eye protection (CDC guidelines on extended use of eye protection).</td>
<td>Selectively cancel elective and non-urgent procedures and appointments for which a gown is typically used by HCP. Shift gown use toward washable cloth isolation gowns. Consider the use of coveralls. Use of expired gowns beyond manufacturer-designated shelf life for training. Use gowns or coveralls conforming to international standards.</td>
<td>Selectively cancel elective and non-urgent procedures and appointments for which a facemask is typically used by HCP. Ensure facemasks are distributed only to HCP and symptomatic patients (e.g., place all supplies in monitored site). Implement extended use of facemasks (CDC guidelines for extended use of facemasks). Restrict facemasks to use by HCP, rather than patients for source control.</td>
<td>Decrease length of hospital stay for medically stable patients with COVID-19. Use of N95 respirators beyond the manufacturer-designated shelf life for training and fit-testing. Extended use of N95 respirators (CDC guidelines for extended use of N95 masks). Limited re-use of N95 respirators (CDC guidelines for limited re-use of N95 respirators).</td>
</tr>
</tbody>
</table>

Crisis Capacity Strategies for Optimizing PPE Supplies

In a crisis capacity situation, you can also consider excluding HCPs at higher risk for severe illness from COVID-19 from contact with known or suspected COVID-19 patients and designating a convalescent HCP (e.g. HCP with previous COVID-19 infection who has recovered and is cleared to return to work) for provision of care to known or suspected COVID-19 patients.

<table>
<thead>
<tr>
<th>Eyes</th>
<th>Gowns</th>
<th>Facemasks</th>
<th>N95 Respirators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancel all elective and non-urgent procedures and appointments for which eye protection is typically used by HCP. Use eye protection devices beyond the manufacturer-designated shelf life during patient care activities. Visually inspect before use and discard if concerns for degraded materials.</td>
<td>Cancel all elective and non-urgent procedures and appointments for which a gown is typically used by HCP. Extended use of isolation gowns with cohort of COVID-19 patients in the same location. Re-use of cloth isolation gowns. Prioritize gowns for higher risk patient care activities (e.g.,</td>
<td>Cancel all elective and non-urgent procedures and appointments for which a facemask is typically used by HCP. Use facemasks beyond the manufacturer-designated shelf life during patient care activities. Visually inspect before use and discard if concerns for degraded materials.</td>
<td>Use of N95 or equivalent alternative respirators beyond the manufacturer-designated shelf life for healthcare delivery. Use of respirators approved under standards used in other countries that are similar to NIOSH-approved N95 respirators (see list on CDC website). Implement limited re-use of N95 respirators for</td>
</tr>
<tr>
<td>Prioritize eye protection for higher risk patient care activities (e.g., aerosol generating procedures). Consider using safety glasses (e.g., trauma glasses) that have extensions to cover the side of the eyes.</td>
<td>aerosol generating procedures. Consider suspending use of gowns for endemic multi-drug resistant organisms (e.g., MRSA, VRE) When no gowns are available, consider using alternatives such as disposable laboratory coats or aprons, reusable (washable) patient gowns or laboratory coats.</td>
<td>Implement limited re-use of facemasks. Prioritize facemasks for higher risk patient care activities (e.g., aerosol generating procedures) or essential surgeries/procedures. Use face shield that covers the entire front and sides of face with no facemask. Consider use of expedient patient isolation rooms for risk reduction (see CDC guidance for more information). Consider use of ventilated headboards (see CDC guidance for more information). Consider use of homemade masks ONLY as a last resort.*</td>
<td>COVID-19 patients per CDC guidelines (CDC Guidelines for Limited Reuse of N95 respirators). Prioritize the use of N95 respirators and facemasks by activity type. If N95 masks are so limited that they cannot be used for all HCP providing care to COVID-19 patients, then N95 use should be prioritized for HCPs completing high-risk patient care activities and facemasks used in lower-risk patient care activities (see table on CDC website). Consider use of expedient patient isolation rooms for risk reduction (see CDC guidance for more information). Consider use of ventilated headboards (see CDC guidance for more information). When no N95 respirators are available, consider use of masks that have never been evaluated or approved by NIOSH or homemade masks. However, caution should be exercised when considering this option.1,2</td>
</tr>
</tbody>
</table>

*In settings where N95 respirators are so limited that routinely practiced standards of care for wearing N95 respirators and equivalent or higher level of protection respirators are no longer possible, and surgical masks are not available, as a last resort, it may be necessary for HCP to use masks that have never been evaluated or approved by NIOSH or homemade masks. However, caution should be exercised when considering this option.1,2*  

**References**  
Because the novel coronavirus (the virus that causes COVID-19) response is rapidly changing, this is interim guidance.

Reliable Information Sources
Find up-to-date novel coronavirus information at dhs.texas.gov/coronavirus, and on DSHS’s Facebook, Twitter and Instagram at @TexasDSHS. Also visit the CDC’s website at cdc.gov/coronavirus.