COVID-19 PPE Update: Surgical Interventions

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*Highlight denotes new content

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All perioperative patients are currently being clinically screened for symptoms of COVID-19 by a questionnaire. It is possible that asymptomatic infected or pre-symptomatic infected patients may present for surgery. Since it is possible for asymptotic individuals to shed COVID-19, based on updated guidelines from the American Society of Anesthesiologists (ASA) on personal protective equipment, the following recommendations have been made for patients without a recent (within prior 5 days / 120 hours) negative COVID-19 test. For those patients who have undergone COVID-19 testing in the 5 days (120 hours) prior to surgery (PCR nasopharyngeal swab), guidelines from the Journal of the American College of Surgeons for PPE are recommended.

**High-Risk Surgeries:**

- Any procedures on the airway, throat, mouth or sinuses (bronchoscopy, tracheostomy, glossectomy, laryngoscopy procedure, etc)
- Surgery under regional anesthetic with high likelihood of requiring General Anesthesia
- Active CPR
- Thoracic surgery/procedures
- Emergency trauma surgery involving head, neck, or thorax
- Emergency Cesarean section with intubation

When pre-operative COVID-19 testing (PCR) is **not available**, team members without a N95 mask or PAPR must leave OR and wait outside for 15 minutes after intubation (based on 20 air exchange/hr with 99% air clearing). After completion of intubation, other team members can return and wear standard PPE (standard gown, gloves, and required eye protection). For procedures where a 15-minute wait could seriously hinder care (i.e. emergency surgery), providers should follow the procedure for high-risk surgery (scenario 2). During extubation, all other providers who are not wearing a N95 mask or PAPR with surgical mask, should leave the room and wait outside for 15 minutes while the patient remains in the OR. OR doors should remain closed. N-95 masks and face shields or PAPR with surgical mask should be re-used and stored in accordance with Spectrum Health PPE **extended use guidelines**. Additionally, anesthesia providers should elect to avoid bag mask ventilation in favor of a rapid sequence intubation with endotracheal tube, when feasible.

If pre-operative COVID-19 testing is negative, then there is no need for surgical team members to leave the OR prior to intubation or during extubation. LMA use should be limited to confirmed COVID-19 negative patients.
See representative PPE grid below

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Anesthesia PPE</th>
<th>Surgical providers, nursing and scrub tech PPE</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - COVID-19 PUI/Confirmed for ANY surgery (*consider DELAY)</td>
<td>N95 and face shield/goggles or PAPR with surgical mask, gown, and gloves</td>
<td>N95 and face shield/goggles or PAPR with surgical mask, gown, and gloves</td>
<td>Minimize number of OR staff and providers. Intubate and extubate in negative pressure room if able.</td>
</tr>
<tr>
<td>2 - Asymptomatic or unknown patient for HIGH RISK surgery, COVID-19 testing NOT available</td>
<td>N95 and face shield/goggles or PAPR with surgical mask, gown, and gloves</td>
<td>N95 and face shield/goggles or PAPR with surgical mask, gown, and gloves</td>
<td>Minimize number of OR staff and providers. There must be 15 min between surgical cases after extubation.</td>
</tr>
<tr>
<td>3 - Asymptomatic patient for HIGH RISK surgery, Negative COVID-19 test in past 5 days (120 hours)</td>
<td>N95 and face shield/goggles or PAPR with surgical mask, gown, and gloves</td>
<td>N95 and face shield/goggles or PAPR with surgical mask, gown, and gloves</td>
<td></td>
</tr>
<tr>
<td>4 - Asymptomatic patient for LOW RISK surgery involving general anesthesia. COVID-19 testing NOT available.</td>
<td>N95 and face shield/goggles or PAPR with surgical mask, gown, and gloves</td>
<td>N95 and face shield/goggles or PAPR with surgical mask, gown, and gloves</td>
<td>OR must be cleared by all team members not wearing N95 (or PAPR) for 15 min after intubation and after extubation. There must be 15 min between surgical cases after extubation.</td>
</tr>
<tr>
<td>5 - Asymptomatic patient for LOW RISK surgery involving general anesthesia.</td>
<td>N95 and face shield/goggles or PAPR with surgical mask, gown, and gloves</td>
<td>Standard PPE</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
- N95 and face shield/goggles or PAPR with surgical mask, gown, and gloves are required for all procedures.
- Minimize number of OR staff and providers.
- Intubate and extubate in negative pressure room if able.
- There must be 15 min between surgical cases after extubation.
<table>
<thead>
<tr>
<th>Negative COVID-19 test in past 5 days (120 hours)</th>
<th>gown, and gloves</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6 - Asymptomatic patient, with LOW RISK surgery</strong></td>
<td><strong>Standard PPE</strong></td>
</tr>
<tr>
<td><strong>WITHOUT general anesthesia, Negative COVID-19 test in past 5 days (120 hours)</strong></td>
<td><strong>Standard PPE</strong></td>
</tr>
</tbody>
</table>

References:

- Forrester JD, Nassar AK, Maggio PM, Hawn MT, Precautions for Operating Room Team Members during the COVID-19 Pandemic, Journal of the American College of Surgeons (2020), [https://doi.org/10.1016/j.jamcollsurg.2020.03.030](https://doi.org/10.1016/j.jamcollsurg.2020.03.030)
- 15 min interval based on air changes/hour data in Spectrum Health OR rooms and CDC guidelines on airborne contaminant removal: [www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html](http://www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html)
- [https://www.michigan.gov/coronavirus/0,9753,7-406-98178_98455---,00.html](https://www.michigan.gov/coronavirus/0,9753,7-406-98178_98455---,00.html)

See below for Surgical Services diagram: