## Guidance for Use of Personal Protective Equipment PPE for Aerosol Generating Procedures

The following table provides guidance for determining the appropriate PPE and room criteria required for Aerosol Transmissible Diseases (ATDs) when performing Aerosol Generating Procedures (AGP). A PAPR is required for patients requiring airborne precautions.1

<table>
<thead>
<tr>
<th>Type of Procedure</th>
<th>Airborne transmitted infections2 (e.g. TB, measles, varicella)</th>
<th>Has signs/symptoms consistent with COVID-19 and undergoing evaluation, COVID-19 exposed, or confirmed (Novel respiratory isolation)3</th>
<th>Asymptomatic with COVID-19 status unknown and/or test pending</th>
<th>Droplet transmitted infections2 that are part of the ATD Standard (e.g. influenza, adenovirus) excludes RSV, rhinovirus, parainfluenza, human metapneumovirus</th>
<th>All Others6 (Including patients with negative COVID tests)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPE</td>
<td>Room criteria</td>
<td>Room criteria</td>
<td>Room criteria</td>
<td>Room criteria</td>
<td>Room criteria</td>
</tr>
<tr>
<td>Aerosol Generating Procedure</td>
<td>PAPR and refer to isolation table</td>
<td>PPE N95 with face shield (or PAPR), gowns, gloves</td>
<td>Airborne Isolation room for continuous AGP preferred</td>
<td>N95 with face shield (or PAPR), gowns, gloves4</td>
<td>N95 with face shield (or PAPR), gowns, gloves4</td>
</tr>
<tr>
<td>Not aerosol generating procedure</td>
<td>PAPR or N95 and refer to isolation table</td>
<td>PPE N95 with face shield (or PAPR), gowns, gloves</td>
<td>Private patient room with door closed preferred</td>
<td>Private patient room preferred</td>
<td>Private patient room not necessary</td>
</tr>
<tr>
<td>room criteria</td>
<td></td>
<td>PPE N95 with face shield (or PAPR), gowns, gloves</td>
<td>Surgical mask with eye protection, refer to isolation table</td>
<td>Surgical mask with eye protection, refer to isolation table</td>
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</tr>
</tbody>
</table>

### Aerosol Generating Procedures (AGP) include but are not limited to:

- **Intubation procedure**
- **Non-invasive ventilation (BIPAP/CPAP)**
- **Manual Ventilation**
- **High frequency ventilation**
- **Tracheostomy/Laryngostoma with open suction, procedure/manipulation, ventilator disconnects4**
- **High Flow Nasal Cannula**
- **Other high risk procedures that should be considered AGPs: TEE, endoscopy, Venturi mask**

### For ALL COVID-19 testing: not AGP, wear N-95 w/eye protection (or PAPR), gowns, gown for collection

### PPE

- **Intubation procedure**
  - PAPR and refer to isolation table
- **Non-invasive ventilation (BIPAP/CPAP)**
  - Open suction
- **Manual Ventilation**
  - Bronchoscopy/BAL
- **High frequency ventilation**
  - Laryngoscopy
- **Tracheostomy/Laryngostoma with open suction, procedure/manipulation, ventilator disconnects4**
  - CPR
- **High Flow Nasal Cannula**
  - Certain ENT procedures
- **Other high risk procedures that should be considered AGPs: TEE, endoscopy, Venturi mask**

### Room criteria

- **Intubation procedure**
  - Extubation procedure
- **Non-invasive ventilation (BIPAP/CPAP)**
  - Chest physiotherapy4
- **Manual Ventilation**
  - Bronchoscopy/BAL
- **High frequency ventilation**
  - Laryngoscopy
- **Tracheostomy/Laryngostoma with open suction, procedure/manipulation, ventilator disconnects4**
  - CPR
- **High Flow Nasal Cannula**
  - Certain ENT procedures
- **Other high risk procedures that should be considered AGPs: TEE, endoscopy, Venturi mask**

### References

1. Per Cal-Osha regulation Title 8, Section 5199, (g) (3) (B), http://www.dir.ca.gov/title8/5199a.html
3. Novel Respiratory Isolation Precautions: N95 face shield (or PAPR), gowns, gloves for all patients irrespective of AGP status. If patient receiving a continuous AGP place patient in an airborne isolation room. Continue patient on Novel Respiratory Isolation if there are ongoing clinical concerns for COVID-19 even if COVID-19 testing is negative.
4. When AGP performed place ‘Aerosol Generating Procedure in Progress’ sign, wear N95 with face shield (or PAPR), gowns, gloves during procedure and if a discrete procedure, when entering the room until >=99% air changes have been achieved (if this is not known, then assume 1 hr).
5. Other i) Droplet Transmitted infections not included in ATD Standards (e.g. RSV, rhinovirus, parainfluenza, human metapneumovirus), i) negative respiratory viral evaluation AND no ongoing concern for COVID-19; OR ii) no concern for respiratory infection
6. When AGP performed place ‘Aerosol Generating Procedure is in Progress’ sign, wear N95 with face shield (or PAPR) when entering the room until >=99% air changes have been achieved (if this is not known, then assume 1 hr).
7. Chest physiotherapy includes intrapulmonary percussive ventilation (IPPV), high frequency chest wall oscillation (vest), chest physical therapy (CPT), Frequency, Aerobika, pulmonary compression device
8. Having a tracheostomy/laryngostoma without additional manipulation is not aerosol generating though N95 plus eye protection is recommended as there is some unpredictability whether the patient will need an AGP. Open suction or other manipulation/procedures on the tracheostomy/laryngostoma including scoping, surgery, cautery, tube changes, and ventilator circuit disconnects are aerosol generating. Oxygen delivered via tracheostomy mask, tracheostomy/laryngostoma dressing changes including changing trach ties, or replacement of a tracheostomy mask are not aerosol generating. For additional information refer to https://infectioncontrol.ucsfmedicalcenter.org/sites/g/files/ksssc4683/f/Outpatient_and_Inpatient_Tracheostomy_Laryngostoma_Guidelines.pdf

There are exceptions to the above guidance for required use of PAPR. In the following exemptions an N95 may be worn in place of a PAPR: A) Emergency Patient Care that does not allow sufficient time to put on a PAPR, B) PAPR equipment interferes with the medical devices necessary to complete the required procedures or C) Call (415-885-3538) to report other potential exemptions for review and consideration.

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Please contact the Medical Center Safety Office at MedicalCenterSafety@ucsf.edu or 415-885-3538 with any questions or concerns.