COVID-19 CLINICAL ROUNDS EMS: Airway Management During the Pandemic

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Johns Hopkins Lifeline
COVID-19 Mission Profile

• Ground/Rotor Wing
  – All interfacility transports
  – Scene response extremely rare
  – Utilized for time-sensitive/distance

• Intrahospital
  – All COVID-19 PUI/+ transports within JHH
  – Emergency Response Team (ERT)
  – Floor to ICU level transports
  – 10 COVID-19 Biomode Units + Adult ED
COVID-19 Transport Data (2/29/20 to 8/31/20)

<table>
<thead>
<tr>
<th>Respiratory Device</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intubated (ventilator)</td>
<td>108</td>
</tr>
<tr>
<td>HFNC</td>
<td>14</td>
</tr>
<tr>
<td>BiPAP</td>
<td>2</td>
</tr>
<tr>
<td>Non-Rebreather</td>
<td>7</td>
</tr>
<tr>
<td>Venturi</td>
<td>1</td>
</tr>
<tr>
<td>Trach Mask</td>
<td>1</td>
</tr>
<tr>
<td>Nasal Cannula</td>
<td>77</td>
</tr>
<tr>
<td>Room Air</td>
<td>58</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>268</strong></td>
</tr>
</tbody>
</table>

- **1,090 COVID PUI/+** (intrahospital & interfacility overall)
- **283 COVID +** interfacility transports
- **271 via ground**
- **12 via rotor wing**

* Chart reconciliation ongoing for 15 interfacility charts.
COVID-19 Airway Management

- Airway Management Considerations
- Personal Protective Equipment
- Infection Control and Safety
**Airway Interventions**

- Avoid “emergent” intubations
- Dedicated airway team
- Optimize patient
- RSI when possible
- Avoid mask ventilation
- BVM w/bacterial-viral filter
Non-Invasive Ventilation

• **High Flow Nasal Cannula**
  – Patient mask for transport
  – Medical consultation for flows $> 40$ L/min and/or $\text{FiO}_2 > 60\%$
  – Clinical evaluation = need for intubation?

• **BiPAP**
  – Bacterial/viral filter on expiratory limb
  – Utilize a non-vented mask, if possible
  – Consider surgical mask over vented mask
Ventilator Set-Up

- Bacterial/viral HMEF as close to patient as possible
- Bacterial/viral filters at ventilator (same for BiPAP)
- In-line suction device to prevent circuit breaks
Tubing Configuration with HMEFs

Without in-line suction

With in-line suction
Ventilator Transition

1. Ventilator Breath
2. Clamp ETT
3. Switch Circuits
4. Ventilator in Standby
5. Unclamp ETT
6. Start Ventilator
Ventilator Transition
Personal Protective Equipment

- “P3” Pack
- Respiratory Protection
  - PAPR
  - Elastomeric respirator or N95 with full faceshield
- Gown (ground vs. in-house)
- Gloves
PPE and Aerosol Generating Procedures (AGPs)

COVID-19 PUI/+ All other patients

AIRBORNE and CONTACT PRECAUTIONS with Eye Protection

(Standard Precautions Always Apply)

- Hand Hygiene
- N95 Respirator with Face Shield
- Powered Air-Purifying Respirator (PAPR)
- OR
- Drager Respirator with Face Shield
- OR
- Gloves
- Gown
- Second Pair of Gloves

PERSONAL PROTECTIVE EQUIPMENT (PPE)

BEFORE ENTERING the patient room:
1. Perform hand hygiene
2. Put on PPE comprising protection, eye protection, gowns, and double gloves according to instructions

BEFORE LEAVING the patient room:
1. Perform hand hygiene with alcohol-based hand sanitizer
2. Remove outer gloves and gown
3. Perform hand hygiene with alcohol-based hand sanitizer
4. Close door as you leave the patient's room

Aerosol Generating Procedures (AGP) in Progress

- Intermittently
- Continuously

→ Use airborne and contact precautions with eye protection.

AS A PRECAUTIONARY MEASURE:

- Use a standard room.
  - A negative pressure room is NOT required
  - Close the door during the AGP.
  - Room turnover time NOT required.
  - Limit personnel in room while the procedure is in progress.

Remember to preemptively communicate with all receiving procedure areas if the patient will require Airborne isolation upon arrival.

Scan this QR code for PMF Anesthesiology Support. You can also access this information on the HHC website: https://www.hopkinsmedicine.org/clinic/QRcode.png
AGPs and Transport

• Masking for all non-intubated patients

• Intrahospital
  – Keeping room door closed when possible
  – Limit personnel in room during AGPs

• Ground
  – Exhaust fan on/non-recirculating mode
  – Cab sealed
  – Ambulance sits for 30 minutes prior to decon
Transport Safety Officer

- All PUI/+ transports
- “Clean” provider
- PPE enforcement
- “Traffic Control” in the hospital
- Providers can focus on the patient
Questions?