NYP Guidelines for Airway Management of Suspected or Confirmed COVID-19 Patients
(as of March 23, 2020)

PPE Kit

Inventory:
- HEPA filter
- N95 masks x 4 (2 small, 2 regular)
- Welder mask x 2 preferred (surgical Face shields x 2 if no Welder mask available)
- McGrath, #4 blade x 3, #4 blade x 2, #3 blade x 2 #3 blade x 2
- Isolation gown x 2 (yellow, not waterproof)
- Waterproof (blue) gown x 2
- Bouffant hat x 2
- Long “Beard” hat x 1 (**beards will interfere with the effectiveness of the N95!**)
- Sterile gloves: 6.0, 6.5, 7.0, 7.5
- Bag for McGrath Handle / battery post intubation

Directions:
- These bags/supplies are stored with the unit clerk and should be requested when the intubating team arrives at the floor/ICU.
- In addition the intubating team should take a bag with COVID supplies besides, not instead of, the arrest bag to all intubations/arrests of PUI/confirmed COVID-19 cases.
- A McGrath handle should be retrieved from the attending of that unit; if not readily available use the McGrath handle from arrest bag.
- Do not take the COVID/arrest bag into the room with PUI/confirmed COVID-19 patient.
- Take only the things that you need with you into the room.
- Prepare medications and intubation equipment outside of the patient’s room
  - Induction agent, Paralytic, Vasopressor, Flush syringes and a sedative for post intubation
- Have a dedicated provider outside of the room to hand additional equipment/medications that may be needed to avoid contaminating the bag.
- If the bag is contaminated, discard all disposable items. Clean non-disposable items with wipes following manufacturer’s directions.
- Return the used COVID bag to the unit clerk and the McGrath handle back to the attending of that unit.
- Unit clerk to call local supply chain number and request bag swap and/or extra McGrath batteries
- If reserve COVID hbag is used, return together with arrest bag and restock
Airway management

Personnel:
- Most experienced practitioner available should perform the intubation
- The team caring for the patient (for example the ICU, floor or ED) needs to ensure that sufficient personnel is available in the room to allow a safe intubation. This could include RN, RT or other personnel as requested by the intubating practitioner. All personnel in the room have to don full PPE

Pre-intubation:
- Advance planning and clear communication are paramount
- Ensure that a well functioning IV is available
- Ideally place the patient in a negative pressure room.
  - If a negative room is not available, place the patient in a single room and close the door.
  - If no rooms are available (e.g., ED), isolate the patient and ensure that other patients/HCW maintain > 6 feet (2 m) distance.
- Most experienced provider available should intubate
- Respiratory Therapy to set up Ventilator: makes sure there is a HEPA filter on the expiratory limb of the ventilator
- Confirm ETCO2 waveform capnography is functional (if available); if colorimetry is used place EZCap after HEPA filter
- Minimize personnel in the room
- Bring the COVID PPE kit in addition to the arrest bag
  - Do not take COVID/arrest bag into the room, just the necessary equipment
NYP Guidelines for Airway Management of Suspected or Confirmed COVID-19 Patients 
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- **Don PPE (contact, airborne, droplet precautions) outside of the patient’s room** in the anteroom, a small room between the patient and the hallway with a sink and PPE that usually accompanies airborne isolation rooms on the floor, or outside of the patient’s room, if anteroom is not present: **Hand hygiene, N95, face shield or welder mask, hat, blue/waterproof or sterile gown for intubator; yellow or blue/waterproof gown for assistant, double gloves, hair/beard cover**
  - https://vimeo.com/394529353/9b7fbb98a5
  - Beards are discouraged for best N95 mask fit

- **Contact IP&C (contact numbers below), and/or WH&S hotline (below) if questions arise about PPE or potential exposures.**

**Intubation:**

- **Prolonged pre-oxygenation for more than 5 minutes:** for example with 100% FiO2 non rebreather (caution: expiratory ports may aerosolize secretions) or with Ambu bag and mask with a HEPA filter in between (create good seal)
- **Goal is rapid sequence induction**
  - If need to use bag-mask ventilation, use 2 hands to provide good seal, use HEPA filter between mask and Ambu bag, deliver small tidal volumes
- **Non-invasive ventilation** (no high-flow nasal cannula, no BIPAP) should **not be used just for pre-oxygenation** unless already present
- Avoid awake FOI (risk of aerosolizing the virus with during topicalization and coughing)
- **Most experienced provider available should intubate**
- May apply **cricoid pressure** if feasible
- Use of **video-laryngoscopy** preferred to increase the distance (e.g., McGrath is preferred for ease of decontamination)
- Inflate cuff immediately after intubation
- LMA ventilation maybe warranted in case of difficult ventilation

**Post-intubation:**

- Attach ETT to the ventilator
- Confirm ETT placement by CO2 sampling or EZCap
  - If Ambu bag is used prior to connecting ventilator, make sure HEPA filter is placed between ETT and Ambu bag
  - ICU level ventilators have a HEPA filter included in their expiratory limb by default. Therefore no additional HEPA filter is required. For non-standard ICU ventilators (for example in the OR) make sure there is a HEPA filter placed on the expiratory limb prior to attaching a PUI or confirmed COVID patient
- Take off top layer of gloves after intubation and prior to touching other equipment
  - **Careful** – do not contaminate yourself during this process
**NYP Guidelines for Airway Management of Suspected or Confirmed COVID-19 Patients**  
*(as of March 23, 2020)*

- Use disposable stethoscope to examine the patient
- RT to set up ventilator prior and help with applying ETT holder
- Secure the tube with ETT holder or tape
- **Dispose used and all disposable** items that were brought into the room in trash cans in patient's room
- McGrath: remove battery and clean all surface areas with wipes, remove outer gloves and then wipe again and then place into the specimen bag and affix sticker “Wiped” to the bag.
- If a different (video) laryngoscope is used, clean as per manufacturer and IP&C instructions or discard if disposable.
- Doff PPE, ideally in anteroom (can remove all pieces including N95, and wash hands). But if anteroom is not present, then doff in patient’s room (at least 6 feet away from the patient), except for the N95 mask, which is removed outside of the room. Hand hygiene.
  - Doffing video: [https://vimeo.com/394529353/9b7fbb98a5](https://vimeo.com/394529353/9b7fbb98a5)
- If you used the yellow gown for intubation (which you should not do): change scrubs (the gown is not waterproof)
- Wash hands or Purell, Apply new non-sterile gloves and clean McGrath with Purple wipes, allow 2 minute dry time
- Fill out log at bedside
- HCWs who were in direct contact with PUI/COVID-19 patient will need to **self-monitor with delegated supervision** (check temperature twice a day, and report symptoms for 14 days). Can return to work as long as they are asymptomatic, unless there is a breach in PPE. If that is the case, let us know, discuss with IP&C and follow their recommendations.
  - Workforce Health and Safety (WH&S) hotline for questions around protocols relating to COVID-19. 6a-11p, 7 days a week, **646-NYP-WHS0** (646-697-9470)
- **Return the used COVID bag to the unit clerk** and the McGrath handle back to the attending of that unit.
- **Unit clerk** to call local supply chain number and request bag swap and/or extra McGrath batteries

**Extubation**

Please see NYP guidelines for extubation of COVID patients/PUI for more detail
- Ideally would extubate in a negative pressure room.
  - If in the OR (positive pressure) and going back to negative pressure ICU room, keep intubated.
- Proper hand hygiene and PPE as above
- Limit the number of staff to a minimum
- Consider antiemetic prophylaxis to avoid nausea, retching, or vomiting
NYP Guidelines for Airway Management of Suspected or Confirmed COVID-19 Patients
(as of March 23, 2020)

- Extubate to face mask (in case there is coughing) or facemask
  - Avoid extubating to BiPAP/HFNC

### Transportation

Please see NYP guidelines for transport of COVID patients/PUI for more detail

- Transportation should be avoided unless necessary
- Hand hygiene and PPE
  - All personnel who actively transporting the patient need to wear PPE: minimum droplet/contact, along with N95 masks if aerosol-generating procedures are in progress (e.g., non-invasive ventilation)
  - Another HCW wearing PPE for droplet +/- airborne precautions (see above) but NOT gown/gloves should be available to interact with the environment. They should keep a distance > 6 feet, if possible
- For intubated patients with a tracheal tube: best to use transport ventilator with HEPA filter in expiratory limb; If Ambu bag used: place HEPA filter between ETT and Ambu bag
- If the patient is not intubated, the patient should wear a surgical mask
- If elevators are used, only the patient and healthcare team should be in the elevator
- If transporting to procedure area, PPE should be changed prior to transfer back to the home unit to avoid contamination of environmental surfaces during return to unit.

For questions about infection control issues, contact the Department of Infection Prevention & Control at your site:

<table>
<thead>
<tr>
<th>Location</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYP-AH</td>
<td>212-932-5219</td>
</tr>
<tr>
<td>NYP-CU, NYP-MSCH, ACN</td>
<td>212-305-7025</td>
</tr>
<tr>
<td>NYP-LH</td>
<td>914-787-3045</td>
</tr>
<tr>
<td>NYP-LMH</td>
<td>212-312-5976</td>
</tr>
<tr>
<td>NYP-WC, NYP-WBHC, ACN</td>
<td>212-746-1754</td>
</tr>
<tr>
<td>NYP-BMH</td>
<td>718-780-3569</td>
</tr>
<tr>
<td>NYP-HVH</td>
<td>914-734-3950</td>
</tr>
<tr>
<td>NYP-Q</td>
<td>718-670-1255</td>
</tr>
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Date: 3/24/20
Version: NYP 3.1
gw
NYP Process for Using Intubation Bags for Suspected or Confirmed COVID-19 Patients
(as of March 23rd, 2020)

This is the NYP standard process for creating and maintaining COVID-19 PPE intubation bags across NYP. This process applies for all affected units (ED, med-surg, ICUs, L&D, ORs). This pertains to intubation bags stored on the units, and back-up reserve bags that will be distributed to the anesthesia teams. Each bag will be used with a McGrath video laryngoscope handle (stored SEPARATELY on unit) and will contain the following components and be stocked by supply chain:

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Quantity per Bag (EA)</th>
<th>MFG #</th>
<th>Lawson #</th>
<th>Vendor #</th>
<th>UOM</th>
<th>QTY per UOM</th>
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<tbody>
<tr>
<td>Biohazard Bag</td>
<td>1</td>
<td>LDPEZIP</td>
<td>447241</td>
<td>8015655</td>
<td>CA</td>
<td>250</td>
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<td>Bouffant Hat</td>
<td>2</td>
<td>HWT204</td>
<td>440011</td>
<td>8015655</td>
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<td>1000</td>
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<td>Hepa Filter</td>
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<td>28022</td>
<td>323510</td>
<td>8022025</td>
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<td>Long Beard Hat</td>
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<td>4381</td>
<td>456715</td>
<td>8000202</td>
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<td>100</td>
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<tr>
<td>McGrath Mac 1 Blade</td>
<td>2</td>
<td>350-072-000</td>
<td>543177</td>
<td>8014825</td>
<td>BX</td>
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<tr>
<td>McGrath Mac 2 Blade</td>
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<td>350-017-000</td>
<td>508129</td>
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<td>McGrath Mac 3 Blade</td>
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<tr>
<td>McGrath Mac 4 Blade</td>
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<td>N95 Mask - Regular</td>
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<td>210</td>
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<td>N95 Mask - Small</td>
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<td>46827</td>
<td>157923</td>
<td>8003311</td>
<td>CA</td>
<td>210</td>
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<td>Sterile Gloves - 6.0</td>
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<td>Sterile Gloves - 6.5</td>
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<td>200</td>
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<td>Sterile Gloves - 7.0</td>
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<td>Waterproof gown (blue)</td>
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<tr>
<td>Welder Mask</td>
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<td>41204</td>
<td>338085</td>
<td>8003311</td>
<td>CA</td>
<td>40</td>
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</tbody>
</table>

The McGrath handles should be kept on the unit by the attending and also brought down to the unit by the anesthesia team responding to the request for the rapid response team (if applicable). If your campus does not yet have McGraths, please use Glidescope, CMAC, or any other video laryngoscope you may have on hand until you receive your McGraths. If you need additional McGraths, please reach out to Sarah Yolleck (sxy9001@nyp.org) with your request.
PPE Intubation Bag Workflow

1. **Supply chain** – Assemble intubation bags in general stores. Secure each bag with a zip tie.

2. **Supply chain** - Bring appropriate number (see below) of intubation bags for all units housing PUIs or COVID-19 positive patients. Drop off bags with unit clerk for storage under desk. Unit clerk or charge nurse is responsible for distributing and managing bags.
   - **MICUs/SICUs**: 4 bags
   - **EDs**: 3-4 bags
   - **OB**: 2-3 bags
   - **All other units with COVID-19 patients**: 2-3 bags
   - **Reserve bags**: 4 per anesthesia team.
     - Anesthesia will be responsible for bringing reserve bags and McGraths to the units for intubations, and calling supply chain and/or submitting a Sentact request to have them replenished. These bags serve as a back-up in case there is not a fully stocked intubation bag on the unit.

3. When call for intubation is made, the **unit clerk and attending** should take the following measures:
   1. **Unit clerk** - Cut zip tie from intubation bag, and bring bag to outside of isolation room;
   2. **Attending** - Give McGrath handle to anesthesiologist responding to Rapid Response request;
   3. **Unit clerk** - Bring additional PPE to isolation cart. Unit clerk or other defined designee is responsible for managing extra PPE for additional staff:
      - Regular N95 masks
      - Small N95 masks
      - Isolation gowns
      - Welder’s masks
      - Masks with face shields
      - Other available eye protection

4. **Rapid Response team** – For intubation, retrieve McGrath from attending and select essential PPE from intubation bag. Only bring in essential supplies (necessary PPE and McGrath blades) into isolation room, and leave bag and remaining supplies outside of room.
   - If an intubation bag is accidentally brought into an isolation room and therefore contaminated, it should be disposed of.

5. **Defined Designee** – Defined Designee should put on gloves, retrieve biohazard bag from intubation bag, and wait outside of isolation room with open biohazard bag for intubation to be complete.
   - Defined Designee can be resident, attending, anesthesiology tech, CRNA, etc.
   - If Rapid Response team needs additional equipment from the intubation bag after entering the isolation room, they should ask Defined Designee to retrieve equipment to avoid contaminating the bag. Contaminated bags should be disposed of.

6. **Rapid Response team** – After intubation, place used McGrath handle in biohazard bag (held open by defined designee).
7. **Defined designee** – Seal bag, clean McGrath handle with purple top PDI wipe, and allow handle to dry for 2 minutes. After the handle is dry, place in a clean non-biohazard bag. Label bag “CLEAN MCGRATH HANDLE” if possible. Give handle back to the attending for storage. Store in attending office.

8. **Rapid Response team/unit clerk**– Submit Sentact request (if applicable) and/or call local supply chain and request bag swap and/or extra McGrath batteries. See chart below(page 4) for supply chain contact information.

9. **Supply chain** – Within **an hour and a half**, retrieve used bag from unit, and replace with restocked bag and/or batteries.

10. **Supply chain** - Bring used bag down to general stores and replenish. Keep in general stores until unit needs another bag.
### Supply Chain Contact Information by Campus

<table>
<thead>
<tr>
<th>Campus</th>
<th>Hours</th>
<th>Contact Instructions</th>
<th>Additional Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYP/Columbia NYP Morgan Stanley</td>
<td>24/7</td>
<td>Submit Sentact request and follow up with call to Supply Chain: 212-305-2852</td>
<td>If leaving message, please indicate location where bag is required and time of request.</td>
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<tr>
<td>NYP/Weill Cornell</td>
<td>24/7</td>
<td>Submit Sentact request and follow up with call to equipment center: 212-746-0364</td>
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<tr>
<td>NYP Lower Manhattan</td>
<td>Monday-Friday: 7am-11pm</td>
<td>Call General Stores (212-312-5047) or call covering MMA on mobile heartbeat</td>
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<td>Saturday &amp; Sunday: 8am-4pm</td>
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<tr>
<td></td>
<td>Off Hours</td>
<td>Call Nursing Administrator: 646-668-1683</td>
<td></td>
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<tr>
<td>NYP Allen</td>
<td>8am-4:30pm</td>
<td>Submit Sentact request and follow up with call to Supply Chain: 212-932-4028</td>
<td></td>
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<tr>
<td></td>
<td>11pm-7am</td>
<td>Submit Sentact request and follow up with call to Ops Supervisor: 212-832-4463</td>
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<td></td>
<td>24/7</td>
<td>Call Nursing Office: 212-932-4322</td>
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<td>NYP Hudson Valley</td>
<td>7am-5pm</td>
<td>Call Supply Chain: 914-734-3351</td>
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<td></td>
<td>4pm-7am</td>
<td>Call Nursing Supervisor: 914-734-3284</td>
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<tr>
<td>NYP Lawrence</td>
<td>7am-11pm</td>
<td>Call Supply Chain: 914-787-2213</td>
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<tr>
<td></td>
<td>11pm-7am</td>
<td>Call Nursing Office: 914-787-5036</td>
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<tr>
<td>NYP Queens</td>
<td>Monday-Friday: 7am-3pm</td>
<td>Call Supply Chain: 718-670-1698</td>
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<tr>
<td></td>
<td>Off Hours</td>
<td>Additional Inventory will be left with nursing managers; Call/email Command Center for replenishment : 718-670-2880</td>
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<tr>
<td>NYP Brooklyn Methodist</td>
<td>Monday-Friday: 7am-6pm</td>
<td>Call Supply Chain: 718-780-3181</td>
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<td>Saturday-Sunday: 8am-4pm</td>
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<tr>
<td></td>
<td>Off Hours</td>
<td>Additional Inventory will be left with nursing managers; Call/email Command Center for replenishment : 718-780-3695, <a href="mailto:Commbmh@nyp.org">Commbmh@nyp.org</a></td>
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