CHAM -Neonatal Guidelines for Airway Management of Suspected or Confirmed COVID-19 Patients
(as of March 31, 2020)

PPE Kit

Inventory:

- HEPA filter
- N95 masks x 4 (2 small, 2 regular)
- Surgical Face shields x 2 if no Welder mask available)
- Cuffed endotracheal tubes: Size 2.5, 3 and 3.5 mm ID.
- CO2 detector
- Disposable Laryngoscope with a straight blade: Size 00, 0 and 1.
- Disposable Video-laryngoscopy blades.
- Isolation gown x 2 (yellow, is not waterproof)
- Waterproof (blue) gown x 2
- Bouffant hat x 2
- N-95 mask
- Sterile gloves: 6.0, 6.5, 7.0, 7.5.
- Neonatal LMA

Directions:

- These bags/supplies are stored in the respiratory lab at Weiler NICU.
- In addition, the intubating team should take a bag with COVID supplies **besides, not instead of**, the ED resuscitation bag to all intubations/arrests of PUI/confirmed COVID- 19 cases.
- **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 LDR/OR/ICU room
    - Midazolam, Fentanyl/Morphine, Vecuronium for elective intubation. Emergency intubation can be done without premedication. Flush syringes.
- 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 respiratory lab.**
- **Supplies to be replenished.**
- **If reserve COVID bag is used, return together with ED resuscitation bag and restock**

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Example of supply bag

Airway management

Personnel:

- Most experienced practitioner available should perform the intubation
- The team caring for the neonate needs to ensure that enough personnel are 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 must don full PPE

In the NICU:

Pre-intubation:

- 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 room and close the door.
    - If no rooms are available (e.g., NICU), isolate the neonate in an isolette and ensure that other patients/HCW maintain > 6 feet (2 m) distance.
- **Most experienced provider available should intubate**
- **Respiratory Therapy** sets up Ventilator and makes sure there is a HEPA filter on the expiratory limb of the ventilator. Place PediCap after HEPA filter
- Minimize personnel in the room
- Bring the **COVID PPE kit in addition to** the ED resuscitation bag
    - Do not take COVID/arrest bag into the room, just the necessary equipment

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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 mask, face shield or welder mask, hat, blue/waterproof or sterile gown for intubator; yellow or blue/waterproof gown for assistant, double gloves, hair cover**
  - https://vimeo.com/394529353/9b7fbb98a5
- Contact Occupational health, Infection prevention and Dr. Margaret Aldrich (845-943-1643) if questions arise about PPE or potential exposures.

Intubation:

- Pre-oxygenation with oxygen using 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
- **Most experienced provider available should intubate**
- May apply **cricoid pressure** if feasible
- Use of **video-laryngoscopy** preferred to increase the distance, if available and comfortable with its use.
- 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 PediCap
  - 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
- Take off top layer of gloves after intubation and prior to touching other equipment
  - **Careful** – do not contaminate yourself during this process

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- Use disposable stethoscope to examine the patient
- RT to set up ventilator prior and help with applying ETT holder.
- Clamp the ET before cutting the tube to avoid secretions from contaminating the personnel.
- In-line suctioning.
- 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
- **Use disposable blades for Video-laryngoscopy.**
- **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
- If you used the yellow gown for intubation (which you should not do): change scrubs (the gown is not waterproof)
- Wash hands or use Purell, apply new non-sterile gloves.
- 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 if they are asymptomatic, unless there is a breach in PPE. Follow instructions from OHS and Infection prevention and Dr. Margaret Aldrich
- **Return the used COVID bag to the respiratory lab and restock.**

Extubation

- 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 staffs to a minimum

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- Extubate to NCPAP with appropriate filter on the exhalation port and using a tight seal face mask as an interface instead of nasal prongs and cover with an Oxyhood.
    - Avoid extubating to BiPAP/HFNC

Transportation from LDR/OR to the NICU and for procedures to OR

- 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 baby 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 NICU to avoid contamination of environmental surfaces during return to unit.