



EXCEPTIONAL CARE. WITHOUT EXCEPTION.

Respiratory Guidelines for Interaction with Pediatric Persons Under Investigation (PUI) for or Confirmed Cases of COVID-19

Purpose:

This interim guidance is for respiratory therapists and healthcare providers caring for pediatric patients (22 years and under) with either confirmed infection with the virus that causes coronavirus disease (COVID-19), as well as pediatric patients awaiting results of investigation for COVID-19 (PUIs) and is specific to that patient population only.

Pediatric considerations:

Based on current knowledge, pediatric patients under investigation (PUIs) for COVID-19 differ from adults in several key ways:

- Overall suspicion for COVID-19 as the cause for respiratory distress in pediatric patients is lower, especially those exhibiting classic bronchiolitis presentation who test positive for a virus that causes bronchiolitis, or those with a significant asthma history with presentation consistent with status asthmaticus and no other risk factors for COVID-19.
- There is no evidence of benefit for early intubation in pediatric COVID-19 patients, as there is in adults, and pediatric disease appears to be milder.
- High flow nasal cannula and CPAP/BiPAP are the mainstays of treatment for bronchiolitis and severe asthma exacerbation in pediatrics.

Clinical Guidelines:

1. Use of aerosol generating procedures:

- a. The use of aerosol generating procedures has been shown to significantly increase the risk of transmission of the virus via aerosolized particles and so when **use of these procedures is unavoidable, airborne, droplet, and contact precautions are required. This includes an N-95 respirator or PAPR, as well as appropriate PPE per hospital guidelines.**

Aerosol generating procedures may include the following:

- Nasopharyngeal swab
- Nasopharyngeal suctioning
- Non-invasive ventilation, including CPAP or BiPAP
- Mechanical ventilation
- Aerosolized medication administration
- Heated high flow oxygen administration
- Pulmonary function testing
- Intubation/Extubation
- Manual Ventilation with a bag valve mask
- Bronchoscopy

- b. The following procedural changes regarding the performance of these procedures should be followed when interacting with this population:

Nasopharyngeal swab

- Airborne, droplet, and contact precautions and private room (or shared when both patients are COVID-19 positive)

Aerosolized medication administration

- Aerosolized medication should be avoided whenever possible. If patients require inhaled medications an MDI should be used if possible. For mechanically ventilated patients, respiratory staff will place an MDI adapter in line with the circuit and use MDIs for all available medications.

- For non-intubated patients, and for whom MDI is not feasible due to age or frequency of treatments (ie. continuous albuterol for status asthmaticus) nebulized albuterol will be used per the status asthmaticus guideline with the appropriate airborne, droplet, and contact precautions in a private room (as above).

Non-invasive ventilation, (HFNC, CPAP or BiPAP)

- Should not be used except in a private room (negative pressure if possible) or one shared when both patients are COVID-19 positive
- Patients receiving these therapies must be able to be transported through the hospital without their support (approx. 15 min), if necessary. If patients are deemed unable to separate from support long enough for hospital transport, intubation is indicated.

Mechanical ventilation

- The use of active humidification is not advised. Ventilators will be set up using a dry circuit with a heat and moisture exchanger (HME) in line and a bacterial and viral filter placed at the exhalation valve. **The HME must be changed every 24 hours or as needed. Bacterial and viral filters should not be used with an HME.**
- If the patient's ventilatory requirements exceed the capability of an HME, active humidity may be used, keeping the bacterial and viral filter on the exhalation valve. **Due to the effect of the additional moisture on the filter, it must be changed every 2 hours or as needed.**
- Suctioning of the patients airway should be limited to as needed only and should only be performed using a closed suction catheter system.
- Changes to the ventilator should be made by a respiratory therapist whenever possible. To minimize unnecessary entry/exit into the room, an ICU nurse or

physician may increase or decrease FiO₂ if necessary between ventilator assessments by the RT if already in the room, making the RT aware.

Intubation/Extubation

- Both procedures should be performed with minimal staff present in the room and essential staff should follow airborne, droplet, and contact precautions during the procedure (as above).
- The BMC COVID-19 airway team will be consulted for all COVID-19 and PUI patients, discussion may be had regarding the most experienced pediatric airway operative in the case of infant and toddler patients, which may be pediatric anesthesia or the NICU.

Manual Ventilation with a bag valve mask

- Manual ventilation with a bag valve mask should be avoided when possible. If necessary, manual ventilation should be performed with a bacterial and viral filter attached to the inspiratory port of the BVM. An HME does not provide adequate coverage and should not be used. Staff should follow airborne, droplet, and contact precautions during the procedure (see above).