

To ensure all Respiratory Care staff are familiar with practice recommendations when caring for **Pediatric patients** with **COVID Isolation** (Positive or Persons Under Investigation/PUI) for COVID-19, the following guidelines will be implemented.

- These guidelines differ from those of the adult patient because pediatric patients are not developmentally or cognitively capable of assuming primary responsibility of their therapies.
- Please refer to the Respiratory Care Practice Guidelines for Adult COVID-19 Positive or PUI, if your patient is sized or cognitively more appropriate to be treated as an adult.

## Transport through the hospital

- For patients < 2 years old or otherwise unable to tolerate a face mask, transport should be done efficiently and limited to essential destinations for patient care. A multi-disciplinary huddle (RT, nursing, provider) should be performed to execute necessary patient care with optimal HCP safety.
- Patients on nasal cannula, HFNC or oxymizer should wear a face mask or 100% NRB covering their nose and mouth when able. Transport on HFNC is limited due to the technical limitations of the device. It is permissible within the *same ward* or *adjacent wards*.
- Non-invasive continuous bronchodilator nebulizers can be paused for the brief period of transport on most patients<sup>1</sup>. On the rare occasion that a patient will not tolerate a pause in non-invasive continuous bronchodilator nebulizers, **they should wear a face mask, when able, over the nebulizer device and transported efficiently to their destined isolation room.**
- Continuous nebulized epoprostenol or nitric oxide gas should never be paused. When delivered non-invasively, patients may transport with a face mask when able, covering their nose and mouth (see transport on HFNC above).
- Continuous nebulized or gas medications (bronchodilators, epoprostenol, nitric oxide) administered in a closed circuit, i.e. mechanical ventilation can be continued on transport.
- Most patients on NIPPV can tolerate a break for transport. Patients unable to tolerate a break should have minimal leak from the mask interface and a face mask placed over the exhale vent in the mask interface prior to transport.
- A bacterial-viral filter can be placed on the tracheostomy tube directly, allowing for venturi masks during transport or ambulation.
- Patients on mechanical ventilation should always have good visualization of their endotracheal tube or tracheal tube. A face mask should not be used, as it obstructs this view.

## Nebulized Medication

- MDI treatments are preferred. May use higher doses (i.e. 12-16 puffs) with spacer.
- Small volume nebulized (SVN) medications are permissible only when strongly clinically necessary or patient fails MDI. These may be administered via filtered nebulizer and should be self-administered when patient is compliant.
- Intubated patients may receive small volume nebulizers (SVN) and nebulized epoprostenol via Aerogen delivery system.
- Continuous nebulizers for severe asthma exacerbation should have frequent clinical evaluation with aim to transition to small volume nebulizers or MDI as soon as clinically feasible.

## Oxygen Nasal Cannula or Oxymizer

- Nasal Cannula / Oxymizer flows per usual practice. **Avoid using aerosol /Venturi masks.**
- Patients requiring higher FiO<sub>2</sub> should be transitioned to an alternate oxygen (100% NRB, HFNC, NIPPV, intubate).
- Patients that desaturate with movement may benefit from 100% NRB PRN for 5-10 minutes before movement. Order 100% NRB PRN pre-oxygenate for activity.

Note 1: The peak effect of continuous nebulized bronchodilators (albuterol, ipratropium) may be seen after 1-2 hours, with a half life of 4-6 hrs, making the 2 hour mark a reasonable time to pause medication for transport.

### High Flow Nasal Cannula (HFNC)

- Maximum setting is 50 LPM and 100% FiO<sub>2</sub>. If pt remains hypoxemic, consider alternate oxygen (100% NRB, NIPPV, intubate).
- Nasal prongs **must** be well seated in the nares with **minimal leak**.
- Patients that desaturate with movement may benefit from 100% NRB PRN for 5-10 minutes before movement. Order 100% NRB PRN for activity. Continuous use of 100% NRB simultaneously with HFNC 100% 50LPM is an indication for intubation.

### Non-Invasive Positive Pressure Ventilation (NIPPV/BIPAP/CPAP)

**Acute Respiratory Failure** - defined by *new* use or increased use of NIPPV

- Acute Hypercarbic Respiratory Failure - consider intubation if unable to stabilize at maximum settings
- Acute Hypoxemic Respiratory Failure –consider intubation if unable to stabilize at maximum settings
- Maximum Settings: IPAP 25 cm H<sub>2</sub>O and EPAP 15 cm H<sub>2</sub>O, per usual practice.

#### **Chronic Respiratory Failure on NIPPV at home**

- Home machines and home interface devices (i.e. nasal mask, face mask) are permitted when hospital machines/interfaces are not tolerated by patient.
- Higher settings (above home settings) indicate patients have acute respiratory failure (see above).
- **ALL patients on NIPPV are required** to have a **clinical assessment** within 2 hrs to determine either continuance of NIPPV or advancement to intubation.
- **Good mask seal** must be ensured. Consider sedation to improve mask tolerance. Consider alternate mask interfaces (full face mask) Leaks >20% should be reported to respiratory supervisor and provider.
- ALL NIPPV will be set up with a **filtered circuit on the expire valve**
- NIPPV – Avea ventilators are in high demand. Please transition to alternate device as soon as able (CPAP bubble, HFNC, NRB, NC)

### Treatments/ Therapy

- Chest Physiotherapy (vest or manual percussor), Cough assist device and OPEP (Acapella/Aerobika) are high risk aerosol generating procedures. For patients that do not have cystic fibrosis, bronchiectasis, or neuromuscular disorders, application of these therapies should be reserved for patients with clinically significant indications. Please see the Respiratory Care Guidelines for Cystic Fibrosis for guidance on the safe practice of these high risk AGP.
- Nasotracheal/open suctioning is appropriate when needed.

### Patient's Home Equipment

- Home ventilators and home NIPPV machines do not allow for filtration of the exhale circuit. Hospital ventilators and NIPPV machines are preferred, but home devices are permissible within a COVID isolation room, if the patient does not tolerate hospital devices.

### Tracheostomy tube

- During trials off the ventilator, a closed T-piece filtered system can be attached to provide aerosol oxygenation/humidification with an in-line suction catheter and appropriate filters. The trach **cuff should be deflated** during this time (usual practice).
- Suctioning should be done *in-line*. Nasotracheal or open suctioning is appropriate when needed.

Please contact Respiratory Care or ICU leadership with any questions related to these practice guidelines.