

## **Guidelines for Managing Children with ARI During COVID 19 Pandemic**

### **Introduction:**

Whereas many children may be affected by COVID 19, other respiratory infections are still continuing to affect our children. Paediatric patients with other viruses/diseases (e.g., croup, asthma, pneumonia) still require appropriate harm minimized management of their conditions. We are committed to the well being and health of the children that we care for as well the safety of our staff. The policy emphasises sustainable practices for the use of PPE.

### **Background:**

The coronavirus disease of 2019 (Covid-19) is a condition resulting from infection by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV2), a related virus that caused the 2002 SARS outbreak. Paediatric Covid-19 appears to be milder, with a smaller proportion of children requiring admission and/or advanced respiratory support. Paediatric Covid-19 may also be more difficult to distinguish from other common childhood infectious diseases. The facility and regional resource allocation and structure for Paediatric critical care itself differs from adults, in that Paediatric critical care resources are highly concentrated in few specialized centres, with limited to no facilities available in community hospitals. Of particular importance is concern related to healthcare worker exposure by way of contact, droplet and aerosolization of the virus from patients.

### **Assessment:**

This policy is based on the limited available literature on Covid-19, consultations with Paediatric critical care colleagues throughout North America, local Paediatric resources and care structure. Guidance follows the principles of the larger adult experience/literature with some key modifications for Paediatric patients.

### **Recommendations:**

This policy outlines the respiratory care of Paediatric patients with suspected or confirmed Covid-19. The approach aligns with adult algorithms, although with **some allowance for the use of non-invasive ventilation strategies as an intermediate step.**

*As the Covid-19 pandemic continues to evolve, this policy may need to be updated.*

### **COVID-19 PATIENTS**

*Disclaimer: These directives will likely change based on evidence regarding infectious risk, precautions required, and allocation of resources.*

**Principles Guiding Decision-Making of COVID-19 Patients with Hypoxic Respiratory Failure:**

1. Avoiding delay in definitive supportive care (i.e. intubation, MV, proning, etc)
2. Minimizing risk of infectious exposure to nearby patients and Healthcare Providers
3. Appropriate allocation of resources: PPE, negative pressure room availability, mechanical ventilators, RT/RN supports, critical care vs. non-critical care physician
4. Standardization of care across facility (i.e. inpatient units, ER, ICU). Certain populations may require NIV to be used early in disease to minimize harm and reduce risk of severe long-term negative outcomes (e.g., neonatal and Paediatric populations)

**Non-invasive ventilation (CPAP or BiPAP):**

**NIV** may be trialed for hypoxic or hypercarbic respiratory failure in children with suspected or confirmed COVID-19. There is an increased risk of aerosolization of COVID-19 virus to surrounding areas when NIV is used. If this therapy is employed airborne/droplet/contact precautions must be taken in a AIIR or private room with closed door and a HEPA filter. Such children should be closely monitored for deterioration while on NIV and considered for early intubation given the logistics required to safely perform intubations under airborne precautions. Sealed, non-venting NIV systems are preferred.

**High-Flow Nasal Oxygenation/Cannula (HFNO/HFNC)**

**HFNC** may be trialed for hypoxic or hypercarbic respiratory failure in children with suspected or confirmed COVID-19. While the aerosolization of virus due to HFNC is inconclusive, our uniform approach is to treat patients under airborne/droplet/contact precautions as outlined above. Children on HFNC should be closely monitored for deterioration while and considered for early intubation given the logistics required to safely perform intubations under airborne precautions. Where possible, a plain surgical mask placed over the HFNC is preferred.

**Re-evaluation of NIV/HFNC**

Depending on the evolution of the situation and resource availability, changes to HFNC/NIV use may be considered if new data becomes available.

The attached flow sheet will help HCT to guide therapy: