

Respiratory Care Practice Guidelines for Adult COVID-19 NEGATIVE or NOT SUSPECTED patients

These practice guidelines optimize the safety practices around respiratory treatments and devices in **Adults tested Negative or Not Suspected for COVID-19 infection**. They were updated in the context of YNHHS PPE and testing practices.

COVID-19 STATUS

- COVID-19 testing is recommended within 24hrs of INITIATION of the following devices, assuming that a new requirement signals a change in respiratory status that may be consistent with COVID-19 infection. While awaiting test results, please refer to Respiratory Care Practice Guidelines for Adult COVID-19 Positive or PUI patients.
- Routine COVID-19 testing should be done every 4 days on patients requiring daily NIPPV use.
- Treatment should not be delayed or withheld while awaiting testing. Rather, precautions, as detailed below may be followed while awaiting test results.

Transport through the hospital

- Patients on nasal cannula, HFNC or oxymizer must wear a face mask or 100% NRB covering their nose and mouth. 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 patients¹. On the occasion that patients cannot tolerate a pause, patients on continuous nebulized bronchodilators for severe asthma exacerbation may transport per *usual* procedure.
- Continuous nebulized epoprostenol or nitric oxide gas should never be paused. When delivered non-invasively, patients may transport with a face mask 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 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 Medications

- A curtain can be drawn between 2 patients sharing a room in order to create space for respiratory distancing.
- These medications should be limited to patients with clinical necessity. (see YNHHS Adult Bronchodilator Adjustment Protocol). Nebulized bronchodilators should not be ordered for asymptomatic patients.

Oxygen Nasal Cannula / Oxymizer

- Patients wearing nasal cannula are asked to wear a face mask when HCP are in the room.
- For COVID negative patients, Oxymizer is reserved for patients that are already using an oxymizer at home (end stage respiratory failure) or comfort measures (CMO) / hospice care.
- HCP should maintain arms length whenever possible.

High Flow Nasal Cannula Device (HFNC)

- Nasal prongs should be placed and evaluated for good fit prior to starting flow.
- Nasal prongs must be well seated in the nares with **minimal leak**.
- Patients wearing HFNC are asked to wear a face mask¹ when HCP are present.
- HCP should maintain arms length whenever possible.

Note: 1. The peak effect of continuous nebulized bronchodilators (albuterol, ipratropium) for severe asthma exacerbation 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, and either wear face mask with or without nasal cannula or 100% NRB

Non-Invasive Positive Pressure Ventilation (NIPPV=BIPAP or CPAP)

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

- Acute Hypercarbic Respiratory Failure – usual practice per YNHHS Adult NIPPV guidelines and protocol.
- Acute Hypoxemic Respiratory Failure – usual practice per YNHHS Adult NIPPV guidelines and protocol.

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. An order for “patient owned equipment” (NIPPV order set) must be placed.
- Higher settings indicate patients have acute respiratory failure (see above).
- **Good mask seal** must be ensured.
- ALL NIPPV will be set up with a **filtered circuit on the expire valve**
- HCP should keep their face and body to the side of the patient’s mouth or nose to avoid direct alignment to the path of coughing.
- Routine COVID-19 testing Q4 days should be performed for patients on daily NIPPV.

Suctioning / Physiotherapy

- Chest PT is limited to patients with clinical necessity. HCP should maintain arms length when administering.
- Nasotracheal/open suctioning - HCP should maintain arms length when administering and keep their face and body to the side of the patient’s mouth or nose to avoid direct alignment to the path of coughing.

Patient’s Home Equipment

- Chronic respiratory failure on a home ventilator or home NIPPV often require a hospital ventilator to manage their *acute* condition. If their reason for hospitalization does *not* involve a respiratory change, they may opt to continue their home ventilator use. Order for patient owned equipment must be placed.

Tracheostomy Tube

- Standard humidification delivery system should be maintained (per institution).
- During suctioning, HCP should maintain arms length when administering and keep their face and body to the side of the patient’s mouth and trach to avoid direct alignment to the path of coughing.

Extubation

Extubation

- Resolving Respiratory Failure: *Per usual practice*. Do NOT stand directly in front of the patient. Position yourself optimally to avoid path of coughing. Suction as needed.
- Transitioning to Comfort Measures with ongoing respiratory failure. Extubate *per usual practice* with appropriate PPE on staff.
- Patients that have expired while on mechanical ventilation can be extubated per our usual process. If the decedant is going to the medical examiner or autopsy, the ETT may be cut at the lip (for viewing purposes) and left in place.

References:

- Tran K, Cimon K, Severn M, Pessoa-Silva CL, Conly J. Aerosol generating procedures and risk of transmission of acute respiratory infections to healthcare workers: a systematic review. *PLoS One* 2012; 7: e35797
- Hui, DSC, Chan MTV and B Chow. Aerosol dispersion during various respiratory therapies: a risk assessment model of nosocomial infection to health care workers. *Hong Kong Med J*. 2014 (Suppl 4):S9-13.
- Esquinas *et al*. Noninvasive mechanical ventilation in high-risk pulmonary infections: a clinical review. *Eur Respir Rev*. 2014; 23:427-438
- Hui DS, Chow BK, Lo T, et al. Exhaled air dispersion during high flow nasal cannula therapy versus CPAP via different masks. *Eur Respir J* 2019; **53**: 1802339.
- Hui DS, Exhaled air dispersion and removal is influenced by isolation room size and ventilation settings during oxygen delivery via nasal cannula. *Respirology*. 2011 Aug;16(6):1005-13.

Leonard S, Atwood CW Jr, Walsh BK, et al. Preliminary Findings of Control of Dispersion of Aerosols and Droplets during High Velocity Nasal Insufflation Therapy Using a Simple Surgical Mask: Implications for High Flow Nasal Cannula [published online ahead of print, 2020 Apr 2]. *Chest*. 2020;S0012-3692(20)30579-1. doi:10.1016/j.chest.2020.03.043

Li J, Fink JB, Ehrmann S. High-flow nasal cannula for COVID-19 patients: low risk of bio-aerosol dispersion [published online ahead of print, 2020 Apr 16]. *Eur Respir J*. 2020;2000892. doi:10.1183/13993003.00892-2020

YNHH Intranet:

YNHHS Adult Bronchodilator Adjustment Protocol

YNHHS Adult NIPPV Protocol

YNHHS Adult NIPPV Guideline

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