COVID-19 (Suspected/PUI or Confirmed): Recommendations for Care (Respiratory Therapy)

Site Applicability

PHC Acute Care

Practice Level

Respiratory Therapist

Need to Know

Respiratory Therapists play an important role in preventing the spread of infection. Many of the therapies provided are aerosol-generating and increase the risk of infection transmission. Compliance with infection control precautions and taking measures to minimize aerosol-generating medical procedures (AGMPs) are key steps in protecting both therapist and patient.

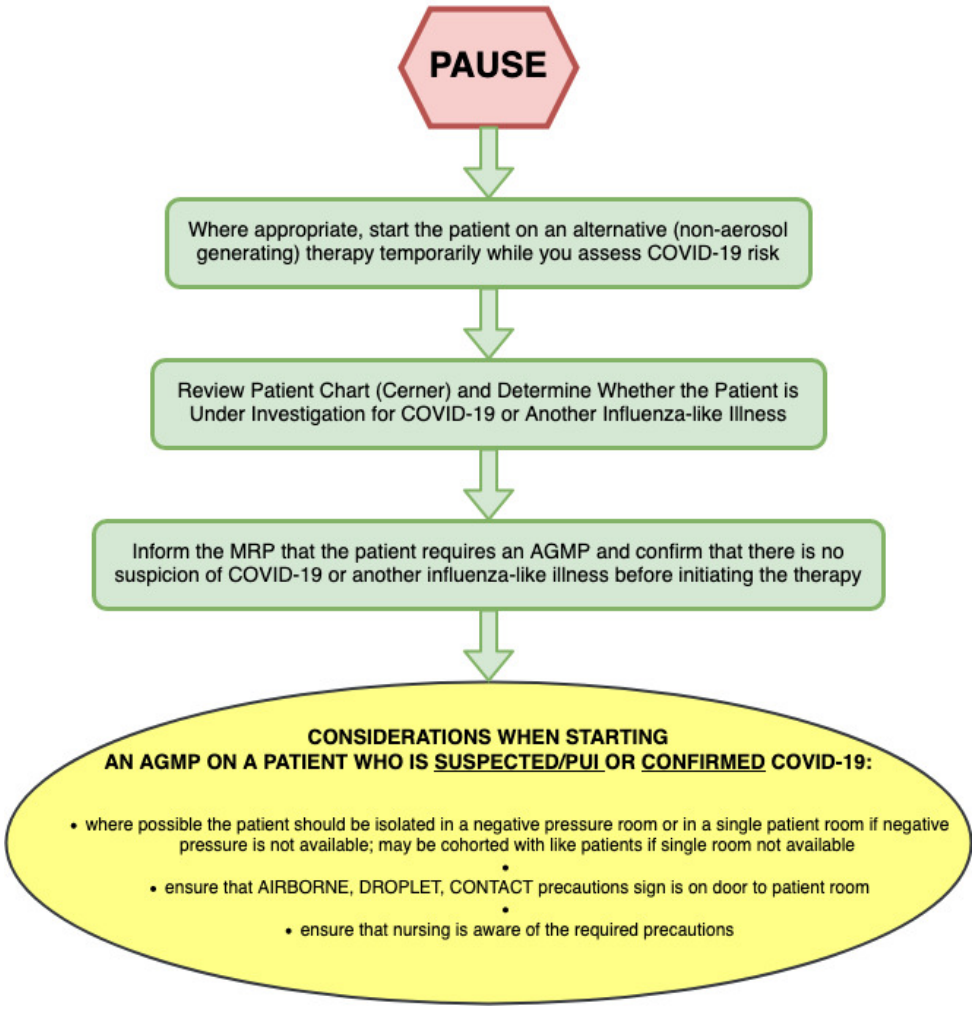
Infection Control Precautions for patients with <u>suspected/PUI</u> or <u>confirmed</u> COVID-19:

- Patients should be placed under Contact and Droplet precautions
- AGMPs should be avoided where possible; when it is medically necessary to perform an AGMP the following precautions should be taken:
  - Where possible, the patient should be placed in a negative pressure room or in a single patient room if negative pressure is not available; may cohort with like patients if single room not available (i.e., confirmed COVID-19 patient may share a room with another confirmed COVID-19 patient)
  - Airborne precautions (a **FIT-TESTED** N95 respirator) should be used in addition to Contact and Droplet Precautions (eye protection, gown and gloves) (1)
- For the purposes of this document AGMP includes:
  - Endotracheal Intubation and Extubation
  - Direct Laryngoscopy
  - Bronchoscopy
  - Bag-Valve-Mask Ventilation and Cardiopulmonary Resuscitation
  - High-Flow Oxygen Therapy
  - Non-Invasive Positive Pressure Ventilation (BIPAP) and Continuous Positive Airway Pressure (CPAP) including both acute and chronic (nocturnal) applications
  - Sputum Induction
  - Open-Airway Suctioning

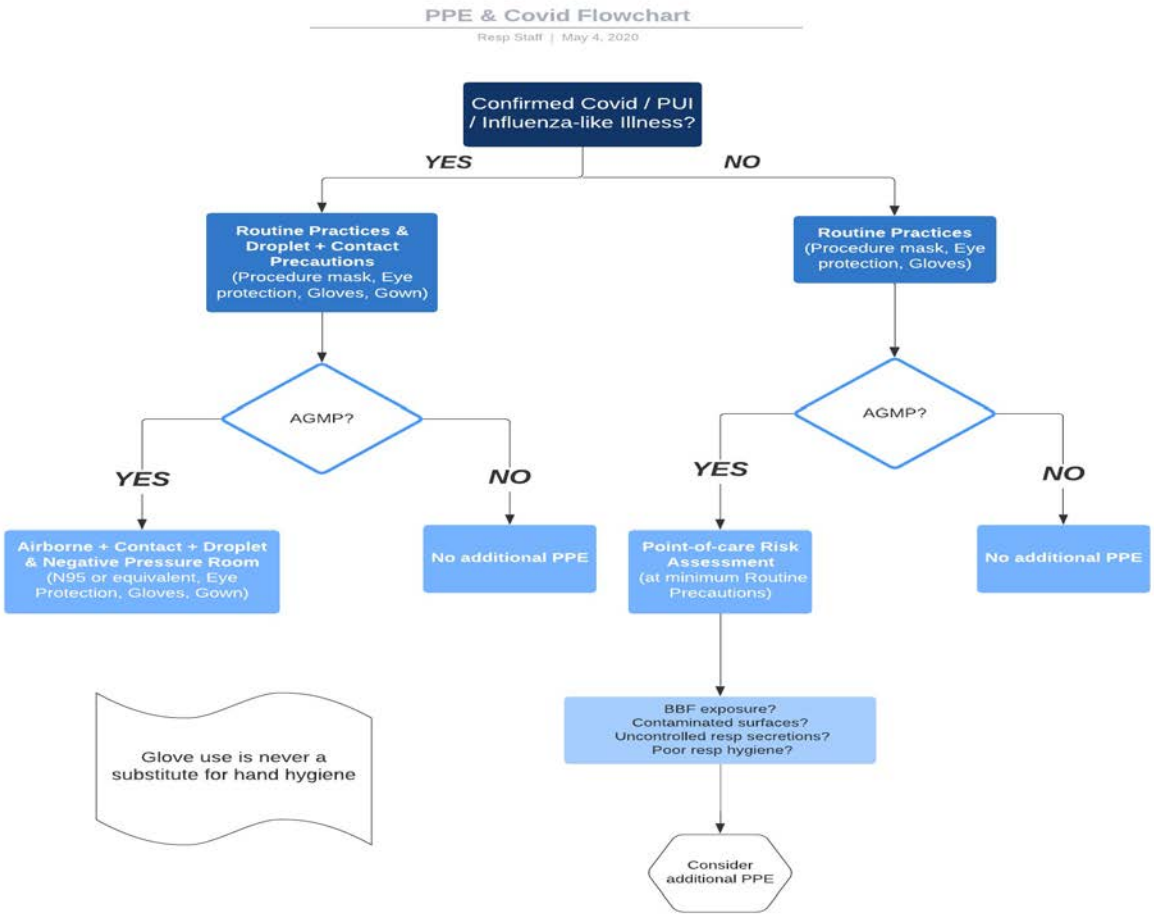
- Tracheostomy Care
- Chest Physiotherapy (including manual assisted cough)
- Administration of nebulized therapies
- Nasopharyngeal Aspirates, Washes, and Scoping
- Breaking a closed ventilator circuit
- Autopsies involving respiratory tissues

****PRACTICE CHANGE****: Although the risk of infection transmission is believed to be low with High-Flow Oxygen such as Optiflow (2 to 5), a **FIT-TESTED** N95 mask should be worn as an added precaution. This is in addition to Contact and Droplet precautions which includes eye protection, gown and gloves. Where possible, patients that are suspected/PUI or confirmed COVID-19 and on Optiflow should be isolated in a negative pressure room or in a single patient room if negative pressure is not available; they may cohort with like patients if a single room is not available.

BEFORE STARTING AN AEROSOL GENERATING MEDICAL PROCEDURE (AGMP)



The recommendations in this guideline may change as new information becomes available. It is important to always conduct a thorough Point-of-Care Risk Assessment (PCRA) before providing direct patient care to identify any risks and take all necessary precautions. If it is determined based on your professional and clinical judgment that additional safety measures are required in order to safely deliver care, the appropriate measures should be taken. At minimum, a surgical mask, eye protection and gloves are required when performing an AGMP on patients **who are not** suspected/PUI or confirmed COVID-19 or other respiratory viral infections. A fit-tested N95 mask in addition to Contact and Droplet precautions are required during an AGMP if a patient exhibits influenza-like symptoms.



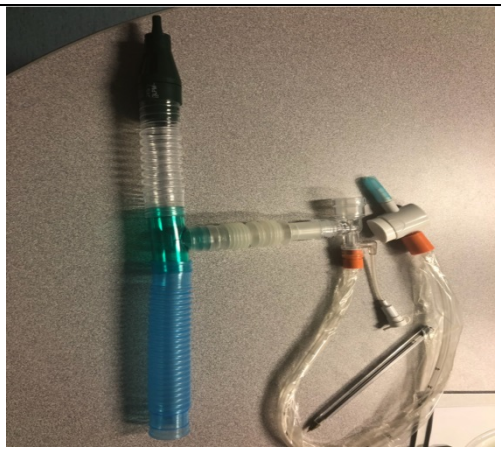
Guideline

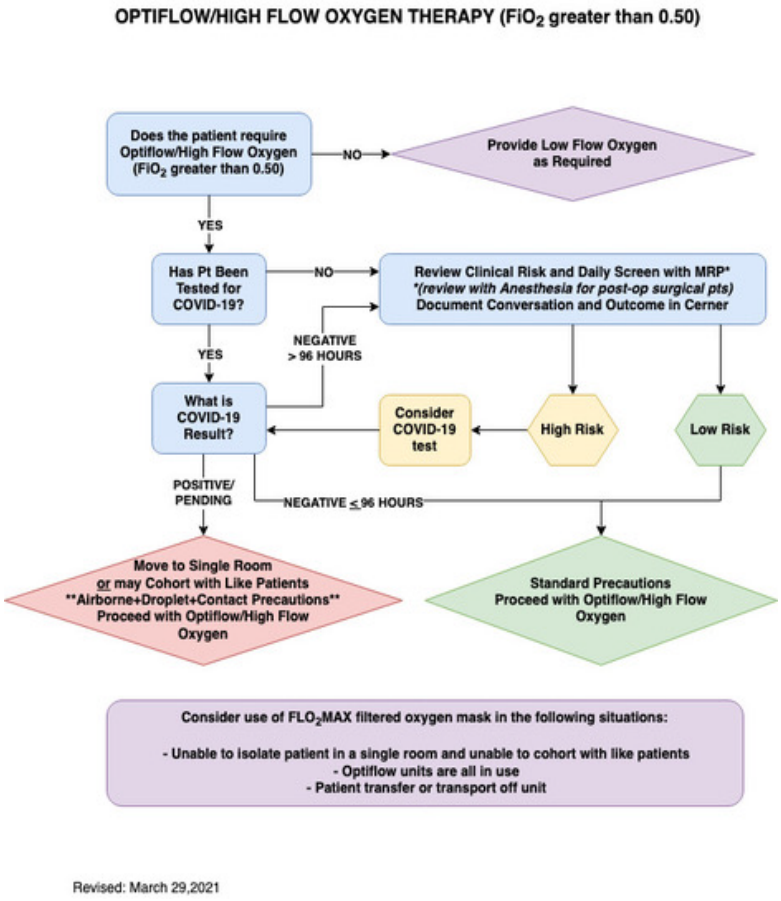
Note: Unless otherwise stated, the following recommendations apply to patients who are suspected/PUI or confirmed COVID-19 in acute and critical care areas.

Therapy / Application	Recommendation / Alternative Therapy

OPTIFLOW/HIGH-FLOW OXYGEN THERAPY (nasal)	• Avoid the use of large volume aerosol nebulizers
	
	Optiflow:
	• Don a **FIT-TESTED** N95 mask in addition to Contact and Droplet precautions
	• where possible the patient should be isolated in a negative pressure room or a single patient room if negative pressure is not available; may cohort with like patients if single room not available
	
	Alternative Therapy:
	• If the patient is not in a negative pressure or single patient room, or in a cohort with like patients, *or* if all Optiflow units are in use, select an alternative oxygen delivery device that is not aerosol-generating:
	  • For patients requiring FiO_2 0.50 or greater use the FLO_2MAX filtered mask or a non-rebreather mask
	  • For patients requiring FiO_2 less than 0.50 use nasal prongs or a simple mask
	
	NOTE: When using Optiflow, take steps to minimize accumulation of condensate in the circuit that could lead to inadvertent aerosolization

OPTIFLOW/HIGH-FLOW OXYGEN THERAPY (t-piece)	**In All Areas:** • Optiflow T-piece with inline (closed) suction should be used for tracheostomy patients who are not ventilator dependent but still require oxygen and/or humidity • Don a **FIT-TESTED** N95 mask in addition to Contact and Droplet Precautions • where possible the patient should be isolated in a negative pressure room or a single patient room if negative pressure is not available; may cohort with like patients if single room not available **Alternative Therapy:** • If the patient is not in a negative pressure or single patient room, or in a cohort with like patients, *or* if all Optiflow units are in use, use a Venturi adaptor with T-piece (see image below)

	 **In Critical Care:** • If the patient cannot be in a negative pressure or single patient room, or in a cohort with like patients while undergoing T-piece trials, consider maintaining the patient on the ventilator with CPAP = 0, PS = 0 (the patient may still receive 2 to 3 cmH_2O of PS depending on the ventilator)



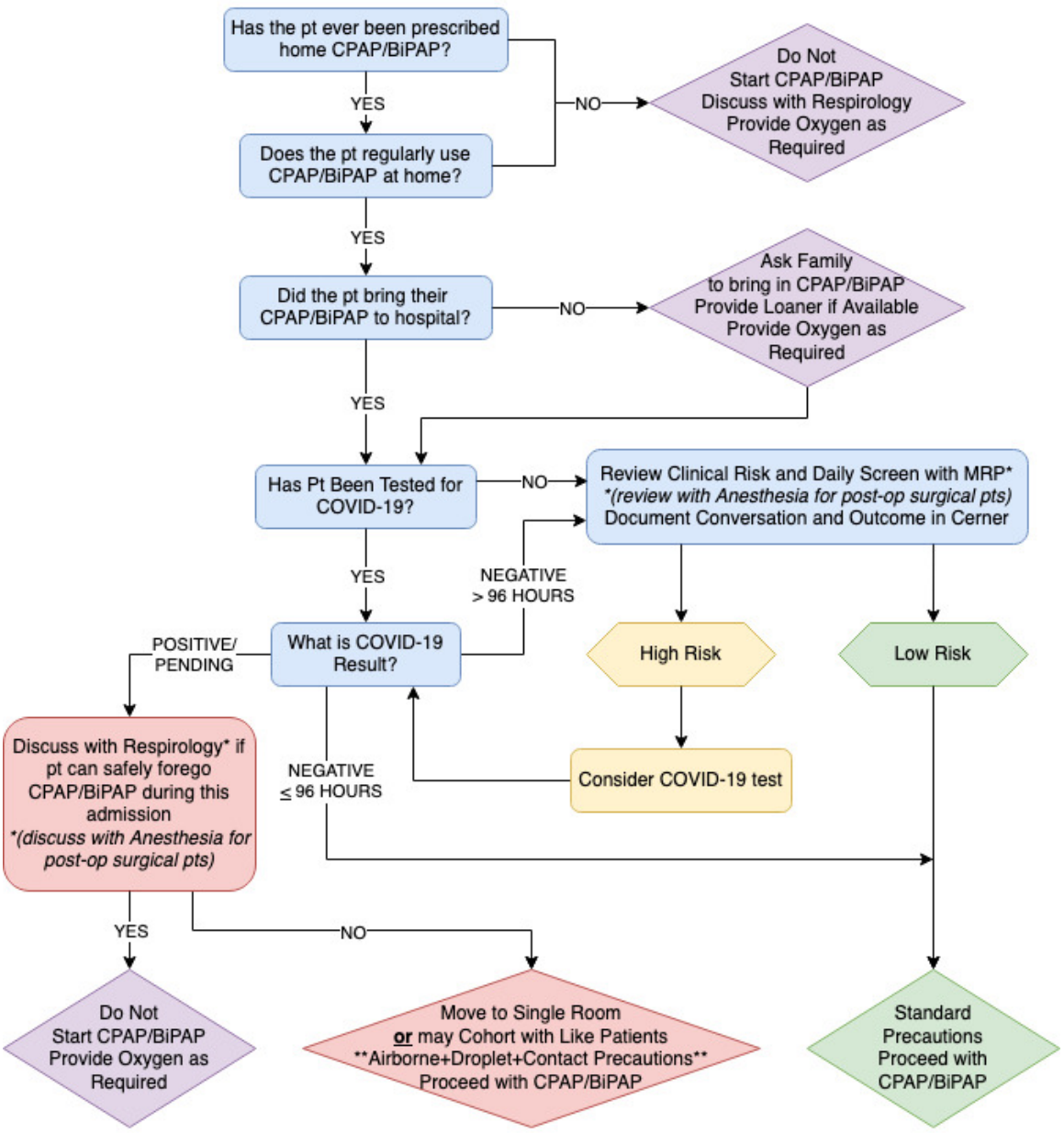
PATIENT TRANSPORT	**Mechanically Ventilated:** • Use the T1 ventilator with an HMEF inline **High-Flow Nasal Prongs via Optiflow:** • Use a FLO_2MAX filtered mask **T-Piece:** • Use a Venturi adaptor with a T-piece
SUCTIONING	**With artificial airway:** • Use inline (closed) suction for all patients **Without artificial airway:** • Avoid nasotracheal suctioning unless clinically indicated • If nasotracheal suctioning is indicated, minimize observers and don a **FIT-TESTED** N95 mask in addition to Contact and Droplet precautions

NEBULIZED THERAPIES (including nebulized epinephrine and nebulized antibiotics)	• Avoid the use of nebulizers to deliver bronchodilators
	
	Alternative Therapy:
	• MDI with spacer (or spacer & mask)
	• Turbuhaler/Diskhaler/Handihaler
	• In the event that a nebulized medication must be delivered (epinephrine, inhaled antibiotic):
	  • Use the Respirgard II Nebulizer with filter
	  • Don a **FIT-TESTED** N95 mask in addition to Contact and Droplet precautions

NEBULIZED FLOLAN	• Where possible nebulized Flolan should not be used **Alternative Therapy:** • Inhaled nitric oxide
TRACHEOSTOMY MANAGEMENT	**Tracheotomy:** • Given the risk of infection transmission, tracheostomy insertion should be well planned and coordinated, taking into account both the timing and location of the procedure (7) • To reduce the risk of infection transmission, consider waiting until the patient has been ventilated for at least 14-21 days and when two tracheal aspirates taken 24 hours apart are negative for COVID-19 (8) • Minimize observers and don a **FIT-TESTED** N95 mask in addition to advanced PPE specific to intubation ****PRACTICE CHANGE****: • A Shiley Tracheostomy Tube is preferred **Tracheostomy Care:** • To minimize ventilator disconnection, the tracheostomy inner cannula may be changed PRN in patients with suspected/PUI or confirmed COVID-19 who are being managed on a mechanical ventilator (8) • The inner cannula should be assessed for patency Q shift by passing an inline suction catheter through the cannula **Weaning to Decannulation:** • To avoid unnecessary tracheostomy tube changes due to downsizing, consider whether a patient can be safely plugged without downsizing, and whether a patient can be safely decannulated without plugging • This decision will need to be made on a per case basis and will depend on a thorough assessment of the patient's upper airway, secretion management, and respiratory/ventilatory strength and capacity

CPR	• No alternative available – minimize observers and don a **FIT-TESTED** N95 mask in addition to advanced PPE specific to intubation
NON-INVASIVE POSITIVE PRESSURE VENTILATION (BIPAP) and CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)	**Acute Application:** • Avoid using NPPV in patients with suspected/PUI or confirmed COVID-19 - Consider intubation. • The application of NPPV in patients with suspected/confirmed influenza is controversial in general • Because the benefits are unclear and there is a risk of infection transmission with NPPV, this therapy should be avoided where possible or applied cautiously in any patient with suspected/PUI or confirmed COVID-19 • If NPPV cannot be avoided, don a **FIT-TESTED** N95 mask in addition to Contact and Droplet Precautions • where possible the patient should be isolated in a negative pressure room or a single patient room if negative pressure is not available; may cohort with like patients if single room not available • Preferred ventilators are the T1, Servo-I or Servo-U with a dual limb circuit and non-vented mask **Chronic/Nocturnal Application:** • Consult Respirology for any new or existing nocturnal CPAP/BIPAP patients with suspected/PUI or confirmed COVID-19 to assess whether the therapy can be avoided • Don a **FIT-TESTED** N95 mask in addition to Contact and Droplet Precautions • where possible the patient should be isolated in a negative pressure room or a single patient room if negative pressure is not available; may cohort with like patients if single room not available

PATIENT USE OF HOME CPAP/BiPAP WHILE IN HOSPITAL



Revised: March 29, 2021

INTUBATION	• No alternative available – minimize observers and don a **FIT-TESTED** N95 mask in addition to advanced PPE specific to intubation • Ensure a filter is in place between the bagger and mask • The most experienced/qualified individual available should intubate • Consider the use of video laryngoscopy ****PRACTICE CHANGE****: • Clamp the ETT prior to disconnecting from the bagger and connecting to the ventilator
MECHANICAL VENTILATION	• Although mechanical ventilation is not aerosol-generating, the AGMP risk is due to the potential for the circuit to become disconnected and aerosolizing any fluids that were inside the circuit • Don a **FIT-TESTED** N95 mask in addition to Contact and Droplet Precautions when caring for ventilated patients • To minimize the need for routine circuit disconnects, active humidity is preferred over the use of an HME • Always ensure that all ventilator connections are snug, and circuit is not stretched, especially before patient positioning
EXTUBATION	• No alternative available – minimize observers and don a **FIT-TESTED** N95 mask in addition to advanced PPE specific to intubation • Consider use of a plastic drape to contain droplets during the extubation procedure
BRONCHOSCOPY	• No alternative available – minimize observers and don a **FIT-TESTED** N95 mask in addition to advanced PPE specific to intubation
SPIROMETRY and PEAK EXPIRATORY FLOW	• Spirometry and Peak Expiratory Flow measurements should not be performed on patients with suspected/PUI or confirmed COVID-19 • There are some risks associated with forced expiratory maneuvers; (9) and while important for disease trending, it is unlikely that the values obtained from these measurements would have influence on the immediate disease management • Unless ordered by a Respirologist, spirometry requests must be reviewed by the Physician Director for Pulmonary Diagnostics or a delegate before proceeding with the test • Where possible, spirometry will be done in the Pulmonary Function Lab • Evening/weekend spirometry requests may be referred to the PF Lab unless otherwise directed by a Respirologist; if a bedside spirometry is necessary it should be done in a single patient room

Related Documents

B-00-07-13080 - AGMPs in the Context of COVID – Infection Prevention and Control

COVID-19 Aerosol Generating Medical Procedures and Oxygen Therapy (Nursing web site)

References

1. Ministry of Health British Columbia. BC Centre for Disease Control. Respiratory Protection for Health Care Workers Caring for Patients with Potential and Confirmed COVID-19 Infections. March 6, 2020. Retrieved from: http://www.bccdc.ca/Health-Info-Site/Documents/Respiratory-protection-COVID19.pdf

2. World Health Organization. 2020. *Clinical management of severe acute respiratory infection when novel coronavirus (2019-nCoV) infection is suspected: Interim guidance*. Geneva, World Health Organization.

3. 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(4).

4. Leung CCH, Joynt GM, Gomersall CD, *et al.* Comparison of high-flow nasal cannula versus oxygen face mask for environmental bacterial contamination in critically ill pneumonia patients: a randomized controlled crossover trial. *J Hosp Infect.* 2019;101(1):84–8.

5. Hui DS, Chan MTV, Chow B. Aerosol dispersion during during various respiratory therapies: A risk assessment model of nosocomial infection to health care workers. *Hong Kong Med J.* 2014;20 (suppl 4):S9-13.

6. Kotoda M, Hishiyama S, Mitsui K, *et al.* Assessment of the potential for pathogen dispersal during high-flow nasal therapy. *J Hosp Infect.* 2019; S0195-6701(19): 30479-7.

7. Tay J, Li-Chung Khoo Mark, Shyan Loh, Woei. Surgical Considerations for Tracheostomy During the COVID-19 Pandemic. Lessons Learned from the Severe Acute Respiratory Syndrome Outbreak. *JAMA Otolaryngology – Head & Neck Surgey*. 2020; 146 (6): 517-518.

8. Rovira A, Dawson D, *et al.* Tracheostomy care and decannulation during the COVID-19 pandemic. A Multidisciplinary clinical practice guideline. *European Archives of Oto-Rhino-Laryngology*. 2020. doi.org/10.1007/s00405-020-06126-0

9. Canadian Society of Respiratory Therapists. Position Statement on Procedures Creating a Heightened Risk of Infection During an Outbreak of a Communicable Respiratory Disease. 2020. Retrieved from: https://www.csrt.com/wp-content/uploads/CSRT-Procedures-Duringan-Outbreak-April-2020-v2.pdf

Initial Effective Date:	09-Oct-2020
Posted Date:	14-APR-2021
Last Revised:	14-APR-2021
Last Reviewed:	
Approved By:	PHC
	Respiratory Therapy, IPAC
Owners:	PHC
	Respiratory Therapy