



COVID-19 PRACTICE ALERT

COVID-19 and Aerosol Generating Medical Procedures (AGMP)

This Practice Alert applies to patients with suspected and confirmed COVID-19

DATE: March 24, 2020

SITES: VCH ALL SITES

SITUATION / BACKGROUND:

Medical procedures that generate aerosols or droplet nuclei in high concentration present a risk for opportunistic airborne transmission of pathogens that otherwise are not spread by the airborne route and increase the risk for transmission.

A full list of high risk and other AGMPs are found <u>here</u>. Common AGMPs in the context of COVID-19 include:

- Endotracheal intubation and extubation
- Bag mask ventilation
- Breaking closed ventilation systems intentionally or un-intentionally
- Bronchoscopy
- Direct Laryngoscopy
- BIPAP and CPAP (including nocturnal)
- Airway suctioning (deep suction and open tracheal suctioning)
- High Flow Oxygen Therapy (including single and double high flow O2 neb set ups, Optiflow and Airvo)
- Chest Physiotherapy (manual and mechanical cough assist device (MI-E))
- Tracheostomy Care
- CPR
- Administration of nebulizing medications
- Lung autopsy

ACTION / RECOMMENDATION:

- 1) Minimize <u>AGMP</u> wherever possible. Use alternative procedures if available.
- 2) If AGMP is clinically indicated:
 - <u>Airborne precautions</u> with N95 mask and eye protection are required for all AGMPs of suspected and diagnosed patients COVID-19.
 - Whenever possible, AGMP should be performed in a private or procedure room with the door closed.
 - Limit the number of health care workers in the room or patient care area (privacy curtains) to only those necessary for the procedure.

FOR MORE INFORMATION:

- Infection Prevention and Control Best Practices Guideline on Aerosol Generating Medical Procedures
- Appropriate Use of Procedure Masks and N95 Respirators
- Infection Prevention & Control COVID-19 Resources for Healthcare Providers

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Q: What is the definition of a low flow oxygen therapy device and a high flow oxygen therapy device?

- Low Flow systems: the flow rate coming from the device is lower than the patient's inspiratory flow rate
- **High Flow** systems: the flow rate coming from the device exceeds the patient's inspiratory flow rate

A normal adult's peak inspiratory flow rate is approximately 35 - 40 l/m.

Q: Is oxygen therapy via the following delivery devices an AGMP for suspected and confirmed COVID-19 patients?

Oxygen Therapy Device	Flow Rate	AGMP	Other alternatives		
LOW FLOW DEVICES – NON Aerosol Generating Medical Procedures					
Nasal Prongs	LOW FLOW	No			
	1-6 l/m				
Simple Mask	LOW FLOW	No			
	6-10 l/m				
Non-Rebreather Mask (NRB)	LOW FLOW	No	HiOX Mask or FLO2 Max		
	10-15 l/m		(NRB with filter) 10-15 l/m		
Oxymask	LOW FLOW 1-15 l/m	No			
HIGH FLOW DEVICES and Other Aerosol Generating Medical Procedures					

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Oxygen Therapy Device	Flow Rate	AGMP	Other alternatives
Bag mask ventilation (bagger)	Greater than 15 l/m and positive pressure when the bag is squeezed	YES	
Single and Double Flow via large volume nebulizer to a Face Mask or Tracheostomy Mask	30-50 l/m	YES	
Heated High Flow Humidity Systems - Optiflow and Airvo	Greater than 30 l/m	Yes – at this time Optiflow and Airvo are considered AGMP	
EXAMPLE AND A DESCRIPTION OF A DESCRIPTI			

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Oxygen Therapy Device	Flow Rate	AGMP	Other alternatives
Nebulizer	6-10 l/m but aerosolizes	YES	Use MDI and spacer for administration of
	bronchodilators		bronchodilators

Q: What are the options for oxygen delivery for a COVID 19 suspected or positive patients requiring greater than 6 l/m nasal prongs?

- An ICU consult (or consult with MRP at non acute sites) is required for all suspected and positive COVID 19
 patients requiring greater than 4-6 I/m nasal prongs to assess for pending deterioration and to prepare for early
 intubation.
- If the patient is not an ICU candidate and requires greater than 6 l/m Nasal Prongs, Optiflow is preferred for all patients in a private room. Airborne precautions, including N95 mask and eye protection are necessary.
- Other oxygen delivery options include: Simple Mask at 6-10 I/m or Non-Rebreather Mask at 10-15 I/m. These are not AGMP and require droplet and contact precautions.

Q: What do I do for AGMPs for patients <u>without</u> suspected or confirmed COVID-19?

All HCW should perform a point of care risk assessment (PCRA) prior to any AGMP to select the appropriate personal protective equipment (PPE) and environmental controls.

• At minimum, eye protection and a surgical or procedure mask is required for any staff member within two meters of procedures generating aerosols, *regardless of the patient's infection status*.

Q: What about other infection cases?

Only essential AGMP should be performed on the following infection cases.

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- Patients with known or suspected infection transmitted by the airborne route (tuberculosis, varicella zoster virus, measles).
- Patients with known or suspected viral hemorrhagic fever (e.g., Ebola)
- Patients with known or suspected influenza-like illness, novel respiratory pathogen, or for whom status of
 respiratory infection is unknown (including: novel/pandemic influenza, seasonal influenza, COVID-19, MERS and
 SARS coronavirus).

At minimum a procedure mask is required for non-influenza respiratory viruses, but an N95 respirator is recommended to reduce aerosol exposure (including but not limited to: RSV, adenovirus, parainfluenza, entero/rhinovirus, human metapneumovirus and bocavirus)

Q: What about nocturnal CPAP and BIPAP – are these AGMPs?

Yes – Nocturnal CPAP and BIPAP are aerosol generating – for all suspected and confirmed COVID-19 patients, airborne precautions including a N95 mask is required when caring for patients when on nocturnal CPAP and BIPAP. Ensure a good mask seal.

Patients *without* suspected or confirmed COVID-19 or other infections cases that require nocturnal CPAP or BIPAP:

• At minimum, eye protection and a surgical or procedure mask is required for any staff member within two meters of procedures generating aerosols, regardless of the patient's infection status.

Q: What about other respiratory therapies such as encouraging deep breathing and coughing?

A natural cough is not an AGMP. If the cough is assisted by a manual thrust (<u>manual cough assist</u>) or using a cough assist machine (<u>MI-E</u>), it then becomes an AGMP.

Q: What about any therapy which may cause a greater likelihood that the patient will cough, like mobilization, dysphagia assessments, or oral care?

Again, a natural cough is not an AGMP. Droplet and contact precautions are required for all routine care with suspected and confirmed COVID-19 positive patients, including any therapy which may cause the patient to cough.

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