

# 2019 Novel Coronavirus (COVID-19): Aerosol Generating Medical Procedures in Healthcare Settings

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## **PURPOSE**

This document provides details about aerosol generating medical procedures (AGMPs), specifically with regard to persons with suspected or laboratory confirmed 2019 Novel Coronavirus (COVID-19). An N95 respirator, in addition to gloves, gown, and face/eye protection is worn for all AGMPs in order to prevent transmission of infection associated with aerosol generation.

## **BACKGROUND**

- The Public Health Agency of Canada (PHAC) has recommended that, in addition to routine practices, patients showing signs and symptoms of COVID-19 should be cared for using DROPLET/CONTACT precautions while under investigation (suspected COVID-19) and in the event their laboratory testing is positive. Additionally, AIRBORNE precautions are used when AGMPs are performed.
- AGMPs are medical procedures that can generate aerosols that consist of small droplet nuclei and present a risk for airborne transmission of pathogens that would not otherwise spread by the airborne route (e.g. coronavirus, influenza).

## **RECOMMENDATIONS**

AGMPs should only be performed if deemed medically necessary for patients with signs and symptoms of illness consistent with COVID-19 infection.

When performing an AGMP on a suspected or a laboratory confirmed case of COVID-19, health care workers (HCWs) are recommended to observe the following:

- Place patient in an airborne infection isolation room (AIIR), sometimes referred to as a negative pressure room, if one is available on the unit. If an AIIR is unavailable, the AGMP should be carried out in a single patient room with the door closed.
- Limit the number of HCWs in the room to only those required for the procedure.
- Ensure HCWs performing or assisting with the AGMP wear appropriate personal protective equipment (PPE).
  - PPE required for an AGMP includes a long sleeved gown, gloves, a fit tested N95 respirator mask and eye protection (e.g. single use disposable face shield or reusable goggles). Reusable goggles and face shield must be cleaned and disinfected after use.
- HCWs should perform hand hygiene before donning and after doffing PPE, and after exiting the patient care space.

- Observe appropriate donning and doffing procedures. If the N95 is to be removed (i.e. is NOT extended use), it is removed after leaving the patient care space and discarded into a waste receptacle
- If no additional AGMPs are anticipated for the patient, the patient may be transferred back to a regular patient care room and managed under DROPLET/CONTACT precautions.
- In the event that a patient remains in the room where the AGMP was performed and is not transferred to another patient care space, the N95 respirator must be worn for sufficient time after the AGMP for the air to be cleared of aerosolized microorganisms. The length of time is dependent on the level of ventilation in the room (i.e. the number of air changes per hour in the space).
  - Refer to organizational Airborne Precautions policy for specific guidance on air changes/hour.
  - PHAC [Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare Settings](#) (p.184) provides a detailed table outlining air changes per hour and time in minutes required for removal efficiencies of 90%, 99% and 99.9% of airborne contaminants.
  - After sufficient time has passed, with no further AGMPs performed, DROPLET/CONTACT precautions can be resumed.
- If the patient will be transferred after the AGMP back to a patient room, the AIIR/patient care space in which an AGMP has been performed must remain vacant until the appropriate time has lapsed before cleaning & disinfection, and then placing another patient in the room.
- Staff performing cleaning and disinfection duties of a space in which an AGMP has been performed must wait until the appropriate air clearance time has elapsed before beginning cleaning and disinfection procedures. Provided that the appropriate air exchange time has lapsed, cleaning and disinfection staff do not require an N95 respirator to enter the room.

## AGMPs REQUIRING N95 RESPIRATORY PROTECTION FOR COVID-19

Aerosol Generating Medical Procedures
Intubation and extubation procedures
High frequency oscillatory ventilation
Bronchoscopy and Bronchoalveolar lavage
Laryngoscopy
Positive pressure ventilation (Continuous positive airway pressure (CPAP) or Bi-level positive airway pressure (BiPAP))*
High-flow heated humidity oxygen therapy (e.g. AIRVO, OptiFlow) (NOTE: Non-humidified oxygen delivered through nasal prongs and/or non-rebreather masks are NOT an AGMP, regardless of flow rate)
Nasopharyngeal washes, scopes, and aspirates
Induced sputum (i.e. inhalation of nebulized hypertonic saline solution to liquefy and produce secretions, NOT natural coughing to bring up sputum)
Autopsy involving respiratory tissues
CPR with bag valve mask ventilation
Tracheostomy insertion/care**/tube change/decannulation
Tracheotomy
Open airway suctioning (e.g. deep insertion for nasopharyngeal or tracheal suctioning, NOT inclusive of oral suctioning)
Break in closed ventilation system
Administration of nebulized medications (NOTE: Avoid if possible; use of alternatives such as meter-dose inhaler with spacer are preferred- refer to organizational guidance)

\* Note: NSHA- Refer to *COVID-19: Recommendations for the Use of CPAP or BiPAP Therapy for Sleep Disordered Breathing/ Hypoventilation Disorders for Inpatients*

\*\*Tracheostomy care does not include dressing changes or tie changes.

**IMPORTANT:** For other scenarios not described, please contact your local IPAC team for further direction.

**For additional information, please refer to the following documents:**

NSHA

- [IPC-RP-025 Airborne Precautions](#)

IWK

- [IWK Policy IC301.2 Application of Additional Precautions](#)
- [Negative Pressure Room List](#)