Vancouver Coastal Health

Infection Prevention and Control

Best Practice Guideline	Aerosol Generating Medical Procedures (AGMP)
Date	June 15, 2017
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Purpose

To prevent transmission of infection associated with aerosols produced by aerosol generating medical procedures.

Site Applicability

Applies to VCH healthcare settings.

Scope

All health care workers (HCW)

Background

Aerosol generating medical procedures (AGMP) are any procedure carried out on a patient/resident/client (referred to as "patient" in the remainder of the document) that can induce the production of aerosols of various sizes, including droplet nuclei. This is applicable to patients of all ages and in any care setting.

Medical procedures that generate aerosols or droplet nuclei in high concentration present a risk for opportunistic airborne transmission of pathogens not otherwise spread by the airborne route (e.g., SARS-CoV-2, influenza) and increase the risk for transmission of organisms known to spread by the airborne route (e.g., TB).

The BC AGMP expert working group assesses medical procedures to determine which ones are considered to be AGMPs based on review of current information and evidence. As per the expert working group, procedures are assessed as probable AGMP, possible AGMP, or non-AGMP reflecting the varying amount and quality of evidence currently available for each procedure. As new evidence emerges, the list will be reviewed and updated accordingly. For the purposes of this document and related VCH practice recommendations, procedures are classified as either AGMP or non-AGMP, see Table 1.

Point of care risk assessment

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

Patients should be assessed for suspect or confirmed viral respiratory illness (VRI) or respiratory infection prior to performing an AGMP.

In an emergency situation where a complete assessment is not possible, if there is concern for infection consider using the highest level of protection (N95 respirator).

For AGMP in healthcare settings

- Limit the number of HCW in the room or patient care area (privacy curtains) to only those necessary for the procedure.
- HCWs should perform hand hygiene before donning and after removing PPE and on leaving the room/area.
- Eye and face protection (if worn) should be removed **after** leaving the room/area and disposed of in either a hands-free waste receptacle (if disposable) or in a separate receptacle to go for reprocessing (if reusable).
- In long-term care a private room for residents who require the use of AGMPs (e.g. CPAP/BiPAP/Nebulizers) is preferred, however, if a private room is not available place or maintain the resident in a multi-bed room.
  - Create physical barriers by drawing privacy curtains and/or closing doors when an AGMP is occurring.
  - If able, and weather permits, open windows to improve ventilation when AGMPs are occurring.

Procedure

Clinical care situations that ALWAYS REQUIRE N95 RESPIRATOR:

- Patients with known or suspected infection transmitted by the airborne route (i.e., tuberculosis, varicella zoster virus, measles, MERS). Note: only essential AGMP should be performed on patients with confirmed or suspected infection spread by the airborne route.
- Treating patients with known or suspected viral hemorrhagic fever (e.g., Ebola)
- Autopsy of lung tissue
- Bronchoscopy

Clinical care situations that REQUIRE N95 RESPIRATOR ONLY WHEN PERFORMING AGMPs:

- Treating patients with known or suspected VRI, novel respiratory pathogen, or for whom status of respiratory infection is unknown (including novel/pandemic influenza, seasonal influenza, SARS-CoV-2).

Table 1: Aerosol Generating Medical Procedure Classification

Assessment and Diagnostic Procedures	
AGMP	**Non-AGMP**
Autopsy	Arterial Blood Gas
Bronchoscopy and Bronchoalveolar Lavage (BAL)	Cardiopulmonary exercise testing
Cough reflex testing	Clinical (bedside) swallow screen/assessment
Flexible/fiber optic endoscopic evaluation of voice and swallowing (FEES)	Videofluroscopic swallow study
Methacholine challenge (i.e., bronchoprovocation test)	Overnight oximetry
Nasopharyngeal aspirates	Nasopharyngeal scoping
Nasopharyngeal washes	Spirometry
Sputum induction	
Upper gastrointestinal endoscopy	
Therapeutic and Resuscitation Procedures	
AGMP	**Non-AGMP**
CPAP and BIPAP	Airway suctioning (deep suction and open tracheal suctioning)
CPR with bag mask ventilation	Chest compressions alone
Intubation and extubation procedures*	Intranasal naloxone
Direct Laryngoscopy	Transesophageal Echocardiogram (TEE)
Non-heated nebulizer style of high flow oxygen (single or double flow)**	**Heated** High Flow Oxygen (e.g., AIRVO, Optiflow)**
Nebulized Therapy	Vibrating mesh nebulizer (e.g., Aerogen)
Mastoidectomy	Low flow oxygen devices (e.g., nasal prongs, O_2 mask, non-rebreather mask)
Tracheotomy	Tracheostomy Care

*Includes: Hyperoxygenation using nasal prongs before intubation, manual ventilation before intubation, breaking/opening closed ventilator circuits (intentionally or un-intentionally).
**Refer to Appendix A High Flow Oxygen Devices

AGMP Environmental Controls

- Whenever possible, AGMP should be performed in a private or procedure room with the door closed.
- When an N95 respirator is indicated, priority placement for a private or procedure room must be assessed prior to non-emergent AGMPs
  - Private room priority should consider: infectious respiratory status, frequency of AGMP indicated, and patient immune status.
  - To establish private room priority, refer to:
    - ❖ IPAC Private Room Priority Patient Placement Algorithm
    - ❖ Bed Placement for Viral Respiratory Illness (VRI)

  - When a private or procedure room is not available and the priority placement assessment has determined the AGMP will occur in place, draw the privacy curtains and remove any shared equipment, supplies or linens from the immediate vicinity prior to performing an AGMP.
- If the priority placement assessment selected for an Airborne Infection Isolation Room (AIIR) or a private/procedure room, the room should remain vacant or an N95 respirator should continue to be worn until the air settle/clearance time has lapsed.

Changes to this document are subject to learnings, evidence, evaluation, and alignment with the BC Provincial AGMP list.

References

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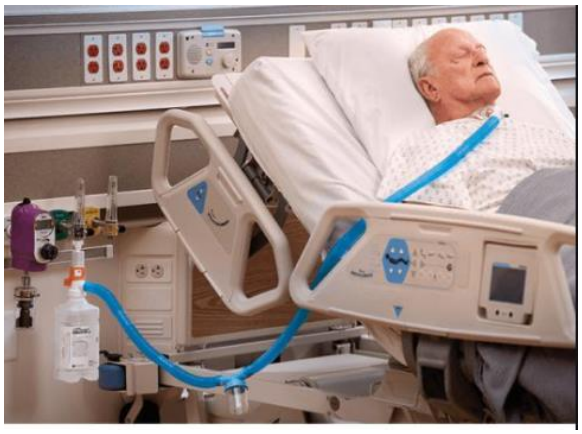
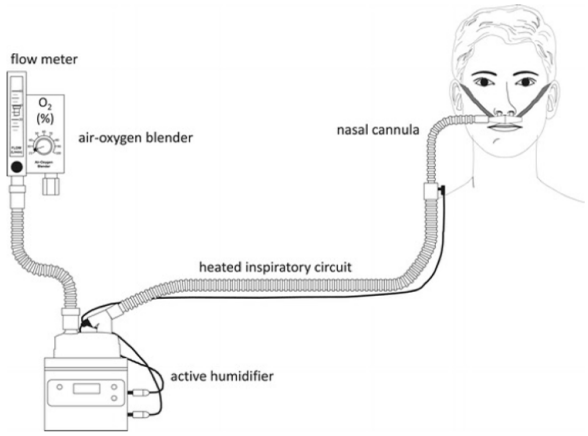
Appendix A: High Flow Oxygen Devices

	Non-Heated High Flow Oxygen Therapy	**Heated** High Flow Oxygen Therapy
AGMP Classification	**AGMP**	**Non-AGMP**
Product Used	Large Volume Nebulizers (Single or Double Flow) 	AIRVO, Optiflow 
Product Differences	• Acts like a Ventolin nebulizer, except the liquid reservoir is much larger • Nebulizer reservoir could become contaminated with patient secretions. • No power cable • Bubbling/Misting/Nebulization • Oxygen supply comes directly from the wall or tank to the attached water reservoir, then to client	• Air and oxygen move from the medical gas source to a blender, then over a heated container of sterile water which increases the relative humidity in the circuit • Requires plugged in power cable • No Bubbling/Misting/Nebulization • Oxygen supply connected to heating device, then to client