

4. SOURCE CONTROL

These measures are used to minimize the spread of microorganisms (germs) from an infectious source. Symptomatic persons require direction at the point of initial encounter and in strategic places in any healthcare setting to minimize potential infectious spread (e.g., triage, reception and waiting areas, elevators, cafeterias).

Source control measures may include but are not limited to:

- Signage at healthcare setting entrances for early identification of symptoms
- Hand hygiene
- Separate entrances/waiting areas for persons with a potential infection
- Spatial separation
- Physical barriers for acute assessment
- Early identification, diagnosis and treatment of infection
- Respiratory etiquette/hygiene
- Placement of the P/R/C requiring Additional Precautions (e.g.: single rooms/airborne infection isolation rooms [AIIRs]).

4.1. Respiratory Etiquette/Respiratory Hygiene

Respiratory hygiene refers to a combination of measures designed to decrease the spread of respiratory microorganisms. These 'source control' measures are targeted to all persons with symptoms of respiratory infection throughout every encounter in the healthcare setting.

Respiratory hygiene involves educating and encouraging everyone (P/R/Cs, HCWs designated caregivers and visitors) who have the physical and cognitive abilities to do so, to practice respiratory hygiene. Specific measures may include instructional signs, education programs and provision of materials for respiratory hygiene (e.g., tissues, plastic lined waste receptacles, alcohol-based hand rub [ABHR], medical masks).

Respiratory Hygiene includes:

- Covering your mouth and nose against your sleeve/shoulder during coughing or sneezing
- Using tissues to contain respiratory secretions by covering your mouth and nose during coughing or sneezing, with prompt disposal of the tissue into a hands-free garbage
- Wearing a medical mask when coughing or sneezing

- Turning your head away from others when coughing or sneezing
- Maintaining a spatial separation of two metres/six feet between persons that are symptomatic with an acute respiratory infection and those who do not have symptoms of a respiratory infection. If this cannot be achieved, the person with respiratory symptoms must be at least one metre/three feet apart and the symptomatic person must wear a medical mask. One metre/three feet may be sufficient for young children and others whose cough is not forceful enough to propel the droplets as far as two metres/six feet.

Family/visitors with signs/symptoms of respiratory illness SHOULD NOT visit. Staff with sign/symptoms of an illness should stay home

4.2. Triage

4.2.1. Emergency Rooms and Acute Assessment Settings

- Post signs to direct persons with symptoms of acute infection (e.g., cough, fever, vomiting, diarrhea, coryza (nasal congestion), rash, and conjunctivitis) to specific waiting areas
- Ensure a physical barrier (e.g., plastic partition at triage desk, wall, portable wipeable divider) is located between infectious sources (e.g., those with symptoms of a respiratory infection) and others
- Place P/R/Cs who are likely to contaminate the environment directly into a single examination room whenever possible. For example, P/R/Cs with:
 - Gastrointestinal (acute diarrhea/vomiting) illness
 - Respiratory infections. These persons should be placed either directly into an examination room or an airborne infection isolation room, as indicated by the respiratory infection suspected. **Place a medical mask on these persons until isolated or spatial separation is achieved**
 - Excessive bleeding or body fluid drainage into a single examination room whenever possible.

4.2.2. Ambulatory Care/Clinic Settings

- If possible, identify persons with symptoms of an acute infection when scheduling appointments for routine clinic visits and request, if possible, then defer routine clinic visits until symptoms of the acute infection have subsided



- Inform those who cannot defer their routine clinic visit (i.e., those that require assessment of symptoms/condition) to follow hand hygiene and/or respiratory hygiene recommendations appropriate for their symptoms. Direct these persons into an examination room as soon as they arrive and/or schedule their appointment for a time when other persons seeking care are not present
- Post signs at clinic entrances reminding symptomatic persons to perform [hand hygiene](#) and/or [respiratory hygiene](#) if they have symptoms.

4.3. Early Diagnosis and Treatment

Ensure symptomatic P/R/Cs receiving care are assessed in a timely manner and that potential communicable infection(s) are considered (e.g., tuberculosis, norovirus, respiratory syncytial virus [RSV], pertussis).

4.4. Spatial Separation

Appropriate spatial separation and spacing requirements are necessary to decrease exposure to microorganisms (germs) for everyone in clinical and waiting areas. There should be a two metres/six feet spatial distance between a coughing/sneezing infected source (e.g., symptomatic P/R/Cs with acute respiratory infection with a cough, fever or shortness of breath) and an unprotected susceptible host (e.g., P/R/C, HCWs, visitors, contractors). This is recommended to prevent the transmission of droplet borne infectious particles. In inpatient/resident facilities, a single room with in-room designated toilet and sink is preferable, as it may be difficult to maintain the recommended spatial separation of two metres/six feet between P/R/Cs.

If two metres/six feet cannot be achieved, those receiving care must be at least one metre/three feet apart and the symptomatic P/R/C must wear a medical mask. Always ensure the medical mask covers the mouth and nose. One metre/three feet may be sufficient for young children and others whose cough is not forceful enough to propel the droplets as far as two metres/six feet.



4.5. Aerosol-Generating Medical Procedures (AGMPs)

Aerosol-generating medical procedures can generate aerosols as a result of artificial manipulation of a person's airway. Several types of AGMPs have been associated with an increased risk of tuberculosis (TB), Severe Acute Respiratory Syndrome (SARS), and Middle Eastern Respiratory Syndrome (MERS CoV) transmission. While there is some evidence for the spread of infections via droplets and aerosols by these procedures, further research is needed to quantify the risk. Infection transmission may increase during AGMPs because of the potential to generate a high volume of respiratory aerosols that may be propelled over a longer distance than with natural dispersion. These procedures include:

- ☑ Endotracheal intubation and extubation, manual bag mask ventilation, insertion of laryngeal mask airway (LMA)^{13.7}
- ☑ Bronchoscopy and bronchoalveolar lavage
- ☑ Tracheostomy procedure (open or percutaneous) Laryngoscopy (with instrumentation below the vocal cords)
- ☑ Non-invasive positive pressure ventilation (BiPAP and CPAP) High flow nasal cannula oxygenation (e.g. Optiflow) - should only be used in patients with COVID-19 following consultation with an Attending Intensivist
- ☑ Open deep suctioning via endotracheal tube/tracheostomy
- ☑ Cardiopulmonary resuscitation (with manipulation of the airway)
- ☑ Sputum induction using hypertonic saline
- ☑ Some dental procedures (e.g., high speed drilling, ultrasonic scalers etc.)
- ☑ Autopsy of lung tissue
- ☑ Administration of nebulizing medications, does not include administration of a metered dose inhaler (MDI).

The following are NOT considered AGMPs:

- Oxygen delivered via nasal prongs and/or non-rebreathe masks are not considered AGMP, regardless of flow rate.
- Chest compressions are not considered an AGMP
- Collection of nasopharyngeal swabs and/or nasopharyngeal aspirates are not considered AGMPs, there is no published literature documenting transmission of respiratory infections, including TB, SARS, influenza, and COVID-19 by collection of these specimens.



**** Specific COVID AGMP** guidance can be found at: [aerosol-generating-medical-procedures-AGMPs.pdf \(sharedhealthmb.ca\)](https://sharedhealthmb.ca/aerosol-generating-medical-procedures-AGMPs.pdf) **

Routine Practices are sufficient for AGMPs performed on P/R/C with no signs or symptoms of suspected or confirmed TB, SARS, COVID or respiratory infections due to an emerging respiratory pathogen^{13.10}

Prior to performing any AGMP, P/R/C should be carefully assessed and [Strategies to Reduce Risk from AGMPs](#) should be followed when the P/R/C is suspected or confirmed as having any of the following:

- Airborne Pathogens (i.e.: tuberculosis)
- SARS
- MERS CoV
- SARI
- COVID
- Viral Hemorrhagic Fever (VHF)
- Or other emerging respiratory infections

STRATEGIES TO REDUCE RISK OF AGMPs

1. Carefully analyze risks and benefits to AGMPs; avoid performing unnecessary AGMPs.
2. Consider alternative to AGMPs.
3. Anticipate and plan for AGMPs, including using appropriate engineering controls (airborne infection isolation rooms or private rooms, evaluating air exchange rates, personal protective equipment, etc.).
4. Depending on the procedure, sedation may be appropriate for the P/R/C requiring the AGMP, to minimize excessive and/or prolonged and/or forceful coughing etc.
5. Paralytics to minimize the risk of aerosolization (for intubation or if the patient's breathing is already supported by mechanical ventilation) can be used when appropriate.
6. Use closed endotracheal suction systems whenever possible.
7. Use the minimum required number of staff in the room when performing an AGMP.
8. Ensure appropriate PPE is worn by all staff present in the room during the procedure. PPE guidance can be found in the Provincial Guidance for Aerosol Generating Medical Procedures (AGMPs) for COVID.
9. Choose an appropriate space for an AGMP. The appropriate space for an AGMP will vary depending on the patient and the circumstances in which the AGMP is taking place.
10. Once an AGMP is complete make sure the door to the room remains closed and staff continue to wear N95s until appropriate air exchanges (at 99% minimally, and ideally at 99.9%) have occurred according to the [Air Exchanges Table](#).

NOTE: *When responding to a code (e.g., cardiac arrest) for a P/R/C requiring airborne isolation, when neither an AIIR or single room with door closed are available for an AGMP, draw the privacy curtains and remove any shared equipment, supplies or linens from the immediate vicinity prior to performing an AGMP. Ensure all staff are wearing appropriate personal protective equipment and remove everyone else in the room where possible.*