



CANADIAN SOCIETY OF RESPIRATORY THERAPISTS

SOCIÉTÉ CANADIENNE DES THÉRAPEUTES RESPIRATOIRES

Position Statement on Procedures Creating a Heightened Risk of Infection During an Outbreak of a Communicable Respiratory Disease

Preamble

The Canadian Society of Respiratory Therapists is concerned with the health and safety of respiratory therapists across all areas of practice when faced with an outbreak of a communicable respiratory disease. As frontline providers of respiratory care, respiratory therapists are at a heightened risk of communicable respiratory disease transmission. Examples of this occurred during the SARS outbreak of 2003 and the COVID-19 pandemic of 2020.

The recommendations contained in this position statement apply to aerosol-generating procedures and pulmonary function testing.

Position

Aerosol-generating medical procedures (AGMP) create a heightened risk of infection for respiratory therapists and other health care practitioners, particularly when performed during an outbreak of a communicable respiratory disease. These procedures require the respiratory therapist or other practitioners to be within close proximity to the patient and increase the likelihood of exposure to contaminated respirable particles. Such procedures should only be performed when urgent and medically necessary (i.e., where the results of the procedure will alter the management or course of the disease), and personal protective equipment (PPE) suitable for airborne precautions should be available, with strict attention to proper donning and doffing and handwashing protocols.

Testing that requires vigorous exhalation or that could result in the patient coughing and/or expectorating should be done only when urgent and medically necessary (i.e., where the results of the procedure will alter the management or course of the disease). Such tests include pulmonary function testing, spirometry, and bronchial provocation challenge testing. If testing is required, PPE suitable for airborne precautions should be available, with strict attention to proper donning and doffing and hand hygiene protocols.

If an AGMP or testing as described above is required, strict adherence to local infection and prevention control and/or public health recommendations for equipment and environmental decontamination must occur. Local Infection Prevention & Control recommendations would include correct technique of PPE use and hand hygiene, reusable equipment disinfection/sterilization, environmental decontamination, and proper disposal of contaminated single-use items.

Practice Recommendations

1. Aerosol-generating medical procedures (AGMPs) should only be performed on people with suspected or confirmed communicable diseases that are transmitted or suspected to be transmitted by airborne or droplet routes when urgent and medically necessary (i.e., where the results of the procedure will alter the management or course of the disease).
 - a. In such cases, AGMPs should be carried out in negative pressure isolation rooms.
 - i. If a negative pressure isolation room is not available, the AGMP should be performed in a single patient room with all doors closed¹.
 - b. Only those persons required to be in the room to provide essential patient care or support while an AGMP is performed should remain in the room.
2. Pulmonary function testing (including spirometry and bronchial provocation testing) should be performed on people with suspected or confirmed communicable diseases that are transmitted or suspected to be transmitted by airborne or droplet routes only when urgent and medically necessary (i.e., where the results of the procedure will alter the management or course of the disease).
3. Appropriate (PPE) must be available and must be properly utilized by all health care personnel in the room when an AGMP or pulmonary function test (including spirometry and bronchial provocation testing) is performed and airborne and droplet/contact precautions should be employed.
 - a. At minimum, this requires gloves, an isolation gown, a properly fitted N95 mask and eye protection (goggles or face shield), and proper donning and doffing and handwashing protocols.
4. If exposure is suspected despite adherence to the recommendations, consultation with local/organization's Occupational Health & Safety or alternate authority should occur.

Rationale

AGMPs are any procedure requiring artificial manipulation of the airway that can induce the production of aerosols of various sizes, including droplet nuclei.¹ AGMPs include bronchoscopy, cardiopulmonary resuscitation during airway management, high flow nasal cannula, intubation and extubation, nebulized therapy of respiratory medications, non-invasive positive pressure ventilation, open suctioning, and sputum induction.^{2,3,4} Nasopharyngeal and throat swabs are not listed as aerosol-generating procedures.^{2,4}

AGMPs create a risk for the transmission of pathogens spread via the airborne route (e.g., tuberculosis), and the risk of opportunistic airborne transmission of pathogens normally spread through droplet or contact transmission (e.g., SARS, influenza, coronavirus).⁴

Pulmonary function testing that requires the patient to exhale vigorously may trigger the cough reflex⁵ and may create respiratory droplets and aerosols.⁶ In addition to the risk of direct contact transmission (when surfaces within the testing space become contaminated with exhaled droplets), there is risk of indirect transmission via aerosol droplets generated while the patient is performing the testing maneuver or expelled into the air between maneuvers⁵. Evidence obtained from persons infected with the influenza virus indicates they “release potentially infectious aerosol particles when they cough, sneeze, speak, and breathe.”⁷ Due to the likelihood of conditions favorable to the direct and indirect transmission of infection and to

emerging literature, it is recommended testing be done only when medically necessary (i.e., where the results of the procedure will alter the management or course of the disease) and that airborne precautions be used as with those procedures deemed “aerosol generating”.

About the Canadian Society of Respiratory Therapists (CSRT)

The CSRT is the national professional association representing respiratory therapists across Canada. The CSRT promotes the respiratory therapy profession at the national and international level and is the credentialing agency for respiratory therapists who practice in non-regulated jurisdictions in Canada.

Contact:

The Canadian Society of Respiratory Therapists
201-2460 Lancaster Road
Ottawa, ON K1B 4S5
csrt@csrt.com

Approved by: CSRT Board of Directors (April 2020)

Replaces: “Aerosol Generating Medical Procedures During a Severe Cardio-Pulmonary Health Outbreak”
CSRT Board of Directors: (October 2014)

References

1. Public Health Agency of Canada (2020). Infection prevention and control for coronavirus disease (COVID-19): Interim guidance for acute healthcare settings. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/interim-guidance-acute-healthcare-settings.html#a4.11> (Accessed March 31, 2020).
2. Public Health Agency of Ontario (2020). Updated IPAC Recommendations for Use of Personal Protective Equipment for Care of Individuals with Suspect or Confirmed COVID-19. <https://www.publichealthontario.ca/-/media/documents/ncov/updated-ipac-measures-covid-19.pdf?la=en> (Accessed March 31, 2020).
3. College of Respiratory Therapy of Ontario (2018). Infection Prevention and Control: Clinical Best Practice Guideline. http://www.crto.on.ca/pdf/PPG/Infection_Control_CBPG.pdf (Accessed March 31, 2020).
4. Provincial Infection Control Network of British Columbia (2018). Respiratory Infection Outbreak Guidelines for Health Care Facilities. https://www.picnet.ca/wp-content/uploads/Respiratory-Infection-Outbreak-Guidelines-for-Healthcare-Facilities_November-2018.pdf (Accessed March 31, 2020).
5. American Thoracic Society (2019). Standardization of Spirometry: 2019 Update. Am J Respir Crit Care Med Vol 200, Iss 8, pp e70–e88. Am J Respir Crit Care Med Vol 200, Iss 8, pp e70–e88 (Accessed April 1, 2020).
6. Chinese Medical Association Respiratory Branch (2020). Expert consensus on lung function tests during epidemic prevention and control of new coronavirus pneumonia. Chinese

Journal of Tuberculosis and Respiratory Diseases, 2020, 43. DOI: 10.3760 / cma.j.cn112147-20200225-00175. <http://rs.yiigle.com/yufabiao/1183736.htm> (Accessed March 31, 2020).

7. Lindsey, WG., Pearce, TA. *et al.* (2012). Quantity and Size Distribution of Cough-Generated Aerosol Particles Produced by Influenza Patients During and After Illness. *J Occup Environ Hyg.* 2012; 9(7): 443–449. doi:10.1080/15459624.2012.684582. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4676262/pdf/nihms742694.pdf> (Accessed March 31, 2020).