COVID-19 Enhanced Droplet and Contact Precautions

CONTENTS

POLICY:

Enhanced Droplet and Contact Precautions are to be used by all Windsor Regional Hospital (WRH) staff in addition to Routine Practices for ALL patients.

PURPOSE:

To outline the Enhanced Droplet and Contact Precautions to be used in addition to Routine Practices for ALL patients.

SCOPE:

This policy applies to:

- All WRH staff, professional staff, volunteers, learners, and visitors upon first encounter with the patient and every encounter throughout their length of stay.

DEFINITIONS:

Aerosol: Small droplet of moisture that may carry microorganisms. Aerosols may be light enough to remain suspended in the air for short periods of time, allowing inhalation of the microorganism.

Aerosol Generating Medical Procedure (AGMP): procedures that may generate droplets/aerosols that may expose staff to respiratory pathogens and are considered to be a potential risk for staff and others in the area. These

procedures artificially manipulate the airway and secretions therein. If an infection is present in the airway the procedure would agitate and dramatically increase the aerosols generated. The operator (such as during intubation) is in very close proximity to the airway and especially if the procedure is complicated or lengthy. PPE (mask and either protective eyewear or face shield) must be used by staff when within two metres of procedures generating droplets/aerosols on any patient, with or without symptoms of an acute respiratory infection, to prevent deposition of droplets/aerosols on staff mucous membranes. For COVID-19 the facial PPE required for AGMP is an N95 respirator and protective eyewear or face shield. Refer to Appendix A for a list of common AGMP.

The medical procedures that are listed as AGMPs are supported by epidemiological data that indicate these procedures may significantly increase risk of infection to health care workers within close range of the procedure and thus N95 respirators are required as a minimum level of respiratory protective equipment (as well as eye protection).

Contact transmission: Contact transmission is the most common route of transmission of infectious agents. There are two types of contact transmission:

- **Direct contact** occurs through touching
  - e.g. an individual may transmit microorganisms to others by touching them
- **Indirect contact** occurs when microorganisms are transferred via contaminated objects
  - e.g. *C. difficile* might be transferred between patients, if a commode used by a patient with *C. difficile* is taken to another patient without cleaning and disinfecting the commode in between uses.

Droplet Transmission: Droplet transmission occurs when droplets carrying an infectious agent exit the respiratory tract of a person. Droplets can be generated when talking, coughing or sneezing and through some procedures performed on the respiratory tract (like suctioning, bronchoscopy or nebulized therapies). **Droplets do not remain suspended in the air, usually travel less than two metres** and may enter the host's eyes, nose or mouth or fall onto surfaces. Microorganisms contained in these droplets are then deposited on surfaces in the patient's immediate environment and some microorganisms can remain viable for extended periods of time. Contact transmission can then occur by touching surfaces and objects contaminated with respiratory droplets.

PROCESS:

All WRH staff are responsible for following the practice guidelines below when Enhanced Droplet and Contact Precautions are in place. Compliance is monitored by Managers, Directors, and Infection Control Practitioners.

Enhanced Droplet and Contact Precautions are always in addition to Routine Practices, and may be combined with or Airborne Precautions (depending on the type of known or suspected infection). **Consult Infection Prevention and Control prior to discontinuing Enhanced Droplet and Contact Precautions in a confirmed COVID-19 case**.

Hand hygiene is the best way for staff to prevent the spread of any microorganism in the healthcare environment. **Always ensure hand hygiene is performed by the patient on leaving his/her room, and on presentation and departure from an ambulatory setting**. Refer to Hand Hygiene Policy for more information.

1. Accommodation

The required accommodation for Enhanced Droplet and Contact Precautions in acute care is a **single room with a dedicated toilet and patient sink**, and the door may remain open unless there is an AGMP in process.

Signage indicating the type of Additional Precautions in place must be posted on the door and visible to all staff that may enter the room.

When patient flow is delayed, patient safety is at risk or patient care is compromised, an asymptomatic rule out COVID-19, and may be cohorted if required for capacity. Director/VP or After Hours Administrator to approve (refer to policy on COVID-19).

The same principles of Enhanced Droplet and Contact Precautions apply on the occasion when Enhanced Droplet and Contact Precautions must be used with a single patient in a semi-private room (preferred over a ward), when single rooms are not immediately available (subject to Director approval). The term cubicle is often used to refer to

the patient's bed space or area within the curtain. To temporarily manage Enhanced Droplet and Contact Precautions in a semi-private or ward room:

1. Completely close the curtain around the patient in Enhanced Droplet and Contact Precautions. Place appropriate sign on the curtain and the door.
2. Do not allow the patient in Enhanced Droplet and Contact Precautions to share toileting facilities or any other equipment with any other patients who may not be in Additional Precautions (i.e. dedicate equipment).
3. Educate the patient and their roommate(s) about the Additional Precautions being used and why.

2. Personal Protective Equipment (PPE)

A **mask** and **eye protection** (or **face protection**) must be worn by any individual who is within two meters of the patient on Enhanced Droplet and Contact Precautions.

A gown is required for direct contact with the patient and the patient's environment (i.e. within the bedspace or curtain).

Gloves are required for direct contact with the patient. Gloves may be donned, following hand hygiene, at point of care.

3. Cohorting Patients in Enhanced Droplet and Contact Precautions

Patients may be cohorted while in **Enhanced Droplet and Contact Precautions** when:

- 2 negative COVID-19 tests in an asymptomatic suspected COVID-19 patient admitted from home, a long term care, rest home or other congregate setting, with no high risk exposure or exposure to an outbreak.

Do not cohort Enhanced Droplet and Contact Precautions when the patient has had a high risk exposure:

- patient has had close contact with anyone who has travelled outside of Canada in the past 14 days
- patient is a confirmed case of COVID-19 or had close contact with a confirmed case of COVID-19
- patient is from a facility currently under a COVID-19 outbreak (or a respiratory outbreak with unknown agent)
- **Consult MRP and Infection Prevention and Control when a patient has a high risk exposure**

For COVID-19 confirmed cases, and symptomatic patients, IPAC must be consulted prior to cohorting.

If there is any concern regarding the discontinuation, then the higher level of precautions must remain in effect (i.e. patient is not to be cohorted), and IPAC must be consulted.

4. Environmental Cleaning

Routine cleaning of the environment and equipment is sufficient for Enhanced Droplet and Contact Precautions, this includes following an AGMP.

5. Airborne Contaminant Removal

Following an AGMP there is a possibility that aerosols from the patient may remain in the air until sufficient air changes have occurred to remove any airborne contaminants from the air. To err on the side of caution and to ensure the highest level of protection of staff and patients, the room that housed a patient during an AGMP should have the doors kept closed and staff should allow sufficient time to pass to remove 99% of airborne contaminants prior to allowing the next patient into the room.

Staff may enter the room with the appropriate PPE (i.e. N95 respirator recommended) before the time is up.

If the patient must be removed from the room for medical necessity then the patient may be removed from the room. The hallway does not have to sit for any period of time as it would be considered low risk as the AGMP was not performed in the hallway.

Because how long a room should sit to sufficiently remove airborne contaminants depends the air changes per hour (ACH), and each room varies in their ACH the standard times used at WRH are **45 minutes for a regular room**, and **15 minutes for the Operating Rooms**. If the ACH is known for the room in question then the time to remove 99% of contaminants can be adjusted based on the information in Table 1 below.

Table 1. Air changes/hour (ACH) and time required for airborne-contaminant removal by efficiency

ACH § ¶	Time (mins.) required for removal: 99% efficiency	Time (mins.) required for removal: 99.9% efficiency
2	138	207
4	69	104
6+	46	69
8	35	52
10+	28	41
12+	23	35
15+	18	28
20	14	21
50	6	8

+ Denotes frequently cited ACH for patient-care areas.
§ Values were derived from the formula:

$$t2 - t1 = -[\ln(C2 / C1) / (Q / V)] \times 60, \text{ with } t1 = 0$$

where:
t1 = initial timepoint in minutes
t2 = final timepoint in minutes
C1 = initial concentration of contaminant
C2 = final concentration of contaminant
C2 / C1 = 1 – (removal efficiency / 100)
Q = air flow rate in cubic feet/hour
V = room volume in cubic feet
Q / V = ACH

¶ Values apply to an empty room with no aerosol-generating source. With a person present and generating aerosol, this table would not apply. Other equations are available that include a constant generating source. However, certain diseases (e.g., infectious tuberculosis) are not likely to be aerosolized at a constant rate. The times given assume perfect mixing of the air within the space (i.e., mixing factor = 1). However, perfect mixing usually does not occur. Removal times will be longer in rooms or areas with imperfect mixing or air stagnation.213 Caution should be exercised in using this table in such situations. For booths or other local ventilation enclosures, manufacturers' instructions should be consulted.

6. Patient Care Equipment

Use dedicated equipment if possible. Shared equipment should always be cleaned and disinfected between patients.

7. Transport

In most cases, transport should be limited unless required for diagnostic or medically necessary procedures. The patient must wear a mask during transport, if tolerated. **Ambulatory patients that can walk safely to their destination are encouraged to walk**.

Procedure for transport:

1. **All staff involved in transport of the patient shall wear mask and eye protection for all patient transport** – refer to COVID-19 Universal PPE Policy.

2. Check with the unit clerk that the receiving area is aware that the patient is in **Enhanced Droplet and Contact Precautions**.
3. Ensure patient is wearing a mask, and instruct the patient on proper cough etiquette during transport.
4. Use disinfectant wipes to clean areas on wheelchair or stretcher that will have contact with your hands.
5. Perform hand hygiene, and encourage / assist patient to perform hand hygiene.
6. Place clean sheet over patient.
7. Place patient's chart on top of clean sheet. All medications / equipment that must be transported with the patient must be cleaned and disinfected or placed in a plastic bag.
8. Transport patient.
9. Ensure receiving unit is aware that the patient has arrived, and requires **Enhanced Droplet and Contact Precautions**.
10. Clean equipment used to transport the patient with disinfectant wipes when the transport is complete.
11. Perform hand hygiene.

Note: If the patient cannot tolerate a mask, the transport staff must reduce exposure to others during transport (i.e. avoid high traffic areas and other patients by ensuring the corridors are as clear as possible and all persons should be asked to exit the elevator prior to use by the patient in Enhanced Droplet and Contact Precautions).

8. Patient Mobility

Symptomatic patients in Enhanced Droplet and Contact Precautions must remain in their room or bed space unless required for diagnostic and therapeutic procedures, or ambulation, until they are no longer considered infectious. A mask must be worn by the patient when leaving their room / bed space. As per Routine Practice, any equipment leaving with them (e.g. wheelchair, IV pole) should be cleaned and disinfected.

9. Visitors

Patients in Enhanced Droplet and Contacts Precautions due to known or suspected COVID-19 infection (i.e. symptomatic) are not permitted to have visitors.

If there are extenuating circumstances, contact the Patient Representative at the respective campus for further assessment.

Please refer to the Visitation Policy.

REFERENCES:

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8. (1990). *Occupational health and safety act, r.s.o.*. Retrieved August19th, 2015 from Service Ontario website: http://www.ontario.ca/Laws

9. (2016). Pocket ontario oh&s act & regulations. consolidated edition . Toronto, ON: Thomson Carswell.

Appendix A - Aerosol-Generating Medical Procedures (AGMP)

Adapted from the Toronto Region Hospital Operations Committee IPAC Consensus List of Aerosol-Generating Medical Procedures (AGMP)

Aerosol-Generating Medical Procedures

- Intubation
- Extubation
- Cardio Pulmonary Resuscitation (NB - chest compressions and cardioversion/defibrillation are not considered AGMP; however, procedures associated with CPR, such as emergent intubation and manual ventilation are AGMP)
- Non-invasive ventilation (e.g., CPAP, BiPAP) (suggest avoid where possible)
- Manual ventilation
- High-flow oxygen (i.e., AIRVO, Optiflow, not 5L oxygen by nasal prongs) (suggest avoid where possible)
- Open suctioning (e.g. “deep” insertion for naso-pharyngeal or tracheal suctioning, not inclusive of oral suction) (suggest avoid where possible)
- Bronchoscopy (suggest avoid where possible)
- Induced sputum (e.g. inhalation of nebulized saline solution to liquify and produce airway secretions, not natural coughing to bring up sputum) (suggest avoid where possible)
- Large volume nebulizers for humidity (suggest avoid where possible)
- Autopsy
- Nasopharyngoscopy
- Oral, pharyngeal, transphenoidal and airway surgeries (including thoracic surgery and tracheostomy insertion) (tracheostomy should be avoided if possible).
- High frequency oscillation ventilation (suggest avoid where possible)
- Needle thoracostomy

Not Considered Aerosol-Generating Medical Procedures

- Collection of nasopharyngeal or throat swab
- Ventilator circuit disconnect
- Chest compressions
- Chest physiotherapy
- Chest tube removal or insertion (unless in setting of emergent insertion for ruptured lung/pneumothorax)
- Coughing, expectorated sputum, sneezing
- Oral suctioning
- Oral hygiene
- Gastroscopy, colonoscopy, ERCP
- Laparoscopy (gastrointestinal/pelvic)
- Endoscopic retrograde cholangiopancreatography
- Cardiac stress tests
- Caesarian section or vaginal delivery of baby done with regional anaesthesia
- Any procedure done with regional anaesthesia
- Electroconvulsive therapy (ECT)
- Transesophageal echocardiogram (TEE)
- Nasogastric/nasojejunal tube/gastrostomy/gastrojejunostomy/jejunostomy tube insertion
- Bronchial artery embolization
- Chest physiotherapy (outside of breath stacking)
- Oxygen delivered at less than or equal to 6 liters per minute by nasal prongs and less than or equal to 15 liters per minute by Venturi masks and non-rebreather masks
- Intranasal medication administration such as naloxone

NOTE: In some cases a procedure may be listed as a non-AGMP, but WRH has recommended a higher level of PPE (e.g. nasopharyngeal swab collection). **Refer to specific WRH Care guidelines**. For non-AGMP there is no need for a room to sit for any period of time to clear airborne particles or aerosols from the room.