

ST. MARY'S GENERAL HOSPITAL
KITCHENER, ONTARIO

Subject/Title: Prevention and Management of Acute Respiratory Infection (ARI) Including Influenza

Policy Statement:

St. Mary's General Hospital's (SMGH) program to prevent Acute Respiratory Infection (ARI) consists of both active and passive screening, and active surveillance to identify new cases of ARI.

Purpose: To prevent transmission of droplet-spread ARI to other patients and to staff; to help the hospital quickly detect and contain clusters and outbreaks of common respiratory infections; and help detect and contain any new or virulent microorganisms causing respiratory infections.

Scope: All patients and staff at St. Mary's General Hospital.

Definitions:

Acute Respiratory Illness (ARI): is defined as any new onset acute respiratory infection that could potentially be spread by the droplet/contact route (either upper or lower respiratory tract), which presents with symptoms of new or worsening cough or shortness of breath and fever greater than 38 °C. (Note that the elderly or immunocompromised population may not display a febrile response to a respiratory infection).

Influenza and Influenza-like illness (ILI): ARI plus one or more of the following: sore throat, headache, chills, muscles aches, fatigue.

Staff: Includes, but is not limited to health care providers, volunteers, and contract workers.

Procedure/Process:

Screening

There are two types of case finding/surveillance methods:

1. **Passive** screening

Patients are directed to self-screen at kiosks located at Registration and at the Emergency Department Triage. Signage posted at hospital entrances and in public areas direct patients and visitors to self-assess and self-identify if they have respiratory symptoms. Individuals meeting case definition of ARI are directed to don a mask and perform hand hygiene.

Visitors are directed not to visit if they are unwell through hospital telephone greeting system.

2. **Active** screening

All patients presenting to SMGH are actively screened at the time of registration. Self-screening tool responses are verified by registration staff/Emergency Department Triage Nurse or other responsible SMGH staff. See Appendix 1.

Initiate Droplet/Contact Precautions immediately on patients who screen positive for ARI.

If patients screen positive in Section II of the screening tool, refer to Appendix 2 and 3.

Identification of Patients after admission:

All clinical staff

- Assess for symptoms of ARI is an on-going daily process as the patient's condition may change from the initial assessment.
 - e.g., onset of a new ARI (new or worsening cough or shortness of breath and fever > 38°C or symptoms of an influenza like illness*)
 - Initiate Droplet/Contact Precautions
 - Report new cases of ARI in admitted patients to Infection Prevention and Control (IPAC).
 -

Duration of Precautions will be established and communicated on a case by case basis by infection prevention and control. Precautions can only be discontinued following consultation with Infection Prevention and Control/designate or Infectious Diseases Physician.

Patient Transfer:

Transportation services and the receiving facility/department must be notified that the patient is in Droplet & Contact Precautions **prior to transfer**. Before transfer patients must perform hand hygiene, wear a yellow isolation gown and surgical mask. If patient is unable to tolerate mask, the transport team must wear procedure mask and eye protection and avoid high traffic areas.

Management of Contacts:

- In the event a patient is diagnosed with influenza during their admission, contact tracing may be initiated.
- Contacts are considered to be any patient who shared a room with the ill patient, one day prior to the onset of symptoms.
- Where a case of influenza is suspected contacts will be monitored for 72 hours after the last exposure to the ill patient. If they develop signs and symptoms of influenza contact(s) should be placed in an isolation room.
- The most responsible care provider must be notified and anti-viral prophylaxis/treatment should be considered for patients identified as influenza contacts.

IPAC staff

- Review all patients identified with ARI to determine need for Additional Precautions and document in the electronic record.
- Review fever surveillance report daily.
- Review all newly identified cases and suspect cases reported to IPAC and document in the patient's electronic health record.

- Investigate hospital acquired cases of ARI, implement measures to contain the infection, and report externally to Region of Waterloo Public Health Unit.
- Identify clusters of hospital ARI and report to the Manager(s) and Director(s) of the patient care unit and to Region of Waterloo Public Health Unit whenever the cluster is determined to be hospital acquired.

Employee Health and Wellness (EHW)

- Health care workers (HCW) have a responsibility to their patients and colleagues regarding not working when ill with symptoms that are likely attributable to an infectious disease including influenza-like illness and ARI.
- HCWs who are ill with ARI must report their illness to their Manager and contact EHW for guidance regarding return to work.
- EHW staff will report case(s) of occupationally acquired ARI to IPAC in a non-nominal format.

Limitations/Special Considerations

It is important that clinical staff consider that ARI screening is only one component of an assessment. It is important that healthcare providers consider the entire clinical picture and if signs of an upper or lower respiratory tract infection (e.g., pneumonia) is identified, then Droplet/Contact precautions should be initiated according to Provincial Infectious Diseases Advisory Committee Best Practice guidelines.

See Also:

Appendix 2 – Management of Novel Respiratory Viruses (e.g., Middle Eastern Respiratory Syndrome Coronavirus (MERS-CoV))

Appendix 3 - MERS-CoV Case Definitions

Appendix 4 - Management of Suspect, Probable and Confirmed Cases of MERS-CoV or Novel Respiratory Infection (NRI) Algorithm

Additional Precautions Policy and Procedure (Airborne/Droplet Contact Precautions)

Outbreak Investigation Policy and Procedure

Origin: Infection Prevention and Control

Date Approved: September 1, 1999, January 2011

Dates Revised: February 2019

Date Reviewed: February 2019

Responsibility: Infection Prevention and Control

References:

Ontario Agency for Health Protection and Promotion, Provincial Infectious Diseases Advisory Committee. *Annex B – Best Practices for Prevention of Transmission of Acute Respiratory Infection*. Annexed to: Routine Practices and Additional Precautions in All Health Care Settings. Toronto, ON: Queen’s Printer for Ontario; 2013

Ontario Agency for Health Protection and Promotion, Provincial Infectious Diseases Advisory Committee. Routine Practices and Additional Precautions in All Health Care Settings. 3rd edition. Toronto, ON: Queen's Printer for Ontario; November 2012.

Where relying upon any St. Mary's General Hospital policy and/or procedure, users are requested to consult the online policy and procedure manual to ensure access to and use of the most current, up-to-date and accurate policy. St. Mary's General Hospital cannot guarantee the currency or accuracy of any printed policy and/or procedure.

Appendix 1

Acute Respiratory Infection (ARI) and Emerging Infections Screening Tool Emergency Department

Patient's Name: _____ Hospital Number: _____
Nurse's Signature: _____ Date: _____

Section I:

Does the patient have any of the following symptoms?

1. A new / worsening cough or shortness of breath AND a fever greater than 38°C
2. Fever AND/OR travel from Africa

No, Stop here, no further questions.

Yes, Patient to perform hand hygiene using alcohol based hand rub and put on a mask. Staff to initiate Droplet /Contact Precautions (unless Airborne Precautions are indicated in Section II).
- Continue to Section II.

Note: some people, such as the elderly or immunocompromised may not develop a fever.

Section II:

1. Screening for MERS-CoV/H7N9 avian influenza risk factors, check all that apply.

- Has the patient travelled to or resided Saudi Arabia or surrounding countries (Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Palestinian territories, Qatar, Saudi Arabia, Syria, United Arab Emirates and Yemen) or China in the last **14** days before illness onset?
- Has the patient been in a healthcare facility or had contact with camel or camel products in the affected countries above in the last **14** days before illness onset?
- Has the patient had close contact with a confirmed case or person under investigation for novel coronavirus, avian influenza within the **14** days before illness onset?

If yes to any question or if there is a clinical suspicion of infection:

- In addition to Droplet/Contact use Airborne Precautions. Required Personal Protective Equipment (PPE) includes N95 respirator, eye protection, gowns and gloves for all care and negative pressure room.
- Please indicate the risk factor(s) when ordering laboratory testing. Respiratory virus testing is test code 5360. The information is critical for correct processing of samples.
- Notify Infection Control (or Clinical On Call for after hours and weekends).

2. Screening for Viral Hemorrhagic Fever (VHF), e.g., Ebola Virus Disease, risk factors, check all that apply.

- Has the patient travelled to a specific location in a country where VHF has recently occurred or is endemic within the previous **21** days illness onset?
- Has the patient had direct contact with blood, other body fluids, secretions, or excretions of a person or animal with VHF within the previous **21** days illness onset?
- Has the patient worked in a lab that handles hemorrhagic fever viruses or in an animal facility that handles animals known to be natural hosts of VHF agents within the previous **21** days before illness onset?

If yes to any question or there is a clinical suspicion of infection:

- Initiate Droplet/Contact Precautions and immediately contact:
 - a. Infection Control or Clinical On Call for after hours and weekends
 - b. Medical Microbiologist (Dr. Ciccotelli via Switchboard) or Chief of Laboratory Medicine

If the answer is No to all questions in Section II, continue with Droplet/Contact Precautions

Appendix 2
Management of Novel Respiratory Infections (e.g., Middle Eastern Respiratory Syndrome
Coronavirus (MERS-CoV))

Definition:

A Novel Respiratory Infection (NRI) is an illness that causes respiratory symptoms (e.g., fever, cough) where the etiologic agent and/or epidemiology of the disease is/are not yet known, and the morbidity and mortality is presumed to be severe. In these cases the epidemiology, severity, and clinical presentation are different from what might be expected from usual seasonal outbreaks and may involve a travel history or epidemiological link.

The Ministry of Health and Long Term Care (MOHLTC) and Public Health Ontario (PHO) monitor the emergence of respiratory infections around the world on an ongoing basis, which may include the following:

- Assess the level of risk to Ontarians
- Determine the characteristics of the illness (e.g., symptoms, incubation period, mode of transmission)
- Develop a case definition for the illness
- Develop surveillance screening and assessment tools (e.g., key screening questions based on characteristics of the disease)
- Develop laboratory handling protocols and specimen testing algorithms
- Work with local Public Health units to assess the level of risk at the local level

Health care providers should maintain a high index of suspicion when patients have risk factors identified by the ARI and Emerging Infections Screening Tool for either MERS-CoV or NRI. for a novel respiratory virus OR meets the MERS-CoV case definitions (Appendix 3)

- Anyone accompanying a patient who screens positive should also be screened for ARI

Initiate Airborne/ Droplet Contact Precautions in addition to Routine Practices immediately for all patients:

- With identified risk factors according to ARI and Emerging Infections Screening Tool
- Who meet the case definition for suspect, probable or confirmed MERS-CoV (Appendix 3)
- Who meet case definition for NRI (as communicated by MOHLTC and/or PHO)

Procedure/Process

Follow Algorithm (Appendix 4) for testing and management of patients.

1. **Initiate** Airborne/Droplet Contact Precautions in a Negative Pressure Isolation Room (Airborne Infection Isolation Room/AIIR).
 - i. Door must remain closed.
2. **Notify** Infection Prevention and Control (IPAC).
 - IPAC will notify Region of Waterloo Public Health Unit.
 - **After hours**, notify Public Health at 519-575-4400 and Clinical On Call.

3. Staff are responsible and accountable to:

- Wear appropriate personal protective equipment (PPE):
 - i. A fit-tested, seal checked N95 respirator
 - ii. Eye protection
 - iii. Gown
 - iv. Gloves
- Limit visitors to family and household contacts
- Provide education to visitors regarding PPE required to enter room:
 - i. Surgical mask
 - ii. Eye protection
 - iii. Gown
 - iv. Gloves

4. Laboratory Testing

The Public Health Ontario Laboratory provides testing for MERS-CoV.

- Contact Public Health Ontario Laboratory at:
1-877-604-4567 to discuss with Medical Microbiologist, confirm testing requirements and arrange specimen transportation.
- Additional information on testing is available at:
[http://www.publichealthontario.ca/en/ServicesAndTools/LaboratoryServices/Pages/Middle-Eastern-Respiratory-Syndrome-Coronavirus-\(MERS-CoV\).aspx](http://www.publichealthontario.ca/en/ServicesAndTools/LaboratoryServices/Pages/Middle-Eastern-Respiratory-Syndrome-Coronavirus-(MERS-CoV).aspx)

5. Aerosol-generating Medical Procedures (AGMP)

- AGMP should only be performed if urgent (i.e., non-elective)
- Keep the number of people in the room to a minimum and have only highly experienced staff perform the procedure.
- Family members may remain for compassionate reasons
- PPE required for anyone in the room:
 - i. A fit-tested, seal checked N95 respirator
 - ii. Eye protection
 - iii. Face shield
 - iv. Gown
 - v. Gloves

6. Patient Transport

Internal

- Patient should only be out of room for essential purposes only.
- Patient should wear a surgical/procedure mask, and perform hand hygiene before leaving room.
- Transport team must wear N95 respirators, eye protection, gown and gloves and avoid high traffic areas.
- Staff in the receiving area must be aware of patient's isolation status and wear appropriate PPE.

External

- Interfacility transport should be avoided until causative agent is confirmed.

- If transport is medically necessary, the receiving facility must be notified of the patient's health status before transport is initiated and be able to appropriately accommodate the patient.

7. Equipment

- Use disposable equipment such as: thermometers, electrodes, stethoscopes whenever possible and discard when precautions are discontinued.
- If equipment required is not disposable, dedicate to that patient only.
- If absolutely necessary, all equipment that must be taken out of the room for use on another patient **MUST** be immediately cleaned and disinfected upon removal from the room.

8. Visitors

- See Special Considerations

9. Discontinuing Precautions

- Only as directed by Infection Prevention and Control.

10. Notify Region of Waterloo Public Health Unit if patient is to be discharged from hospital.

Limits/Special Considerations

MERS Co-V

Healthcare Workers (HCWs) are expected to use Routine Practices and Airborne/Droplet Contact Precautions when at risk of exposure to a confirmed or probable case, or person under investigation and/or such patient's environment.

- Following unprotected exposure to a confirmed or probable case, a risk assessment will be conducted by Employee Health Services in conjunction with WDGPH to determine the need for, and degree of, follow up surveillance of the HCW
 - The following HCWs are a high priority for follow up:
 - A worker who provided direct clinical or personal care to, or examined, a symptomatic confirmed or probable case (see Appendix 3 for Case Definitions) involving direct face-to-face contact within two metres of the patient **OR**
 - A worker in the same room at the time an aerosol-generating procedure was performed on a confirmed or probable case
 - AND**
 - who was not wearing PPE (gown, gloves, eye protection, N95 respirator)
- For HCWs who require follow up:
 - Assess daily for respiratory symptoms for 14 days (may be active or passive for persons not present in the hospital; those working should be screened at the beginning of each work shift)
 - If fever or any respiratory symptoms develop, exclude the HCW from work and restrict to home

- Collect appropriate laboratory specimens for persons under investigation for possible MERS-CoV infection
- Collect acute (as soon as convenient after exposure is identified) and convalescent (day 21 after last exposure) serology for MERS-CoV
- Visitors at the bedside of a confirmed case of MERS-CoV for more than 15 minutes without wearing PPE (gown, gloves, surgical mask, eye protection) require follow up by WDGPH.

Novel Respiratory Infection

When appropriate precautions have not been implemented and potential exposure has occurred, follow algorithm Appendix 5.

Consider whether it is necessary to limit or discontinue visiting.

- If visitation is permitted, instruct visitors to sign in; visitor log will be kept with patient chart.
- Report visitors who do not comply with PPE requirements to WDGPH as new contacts.

In the event of an NRI Outbreak, education will be provided to staff on:

- Characteristics of the diseases, including symptoms and science of illness
- Level of risk in the community and health care setting
- Hospital's preparedness plan
- Information on preventative practices (e.g., hand hygiene, Routine Practices)
- Appropriate use of PPE
- Changes in practices that result from more becoming known about the novel infection

Instruct staff to self-screen at home.

- Staff with symptoms of ARI must not come to work and report their symptoms to EHS.

Staff deployment will be determined by the behaviour and transmissibility of the novel agent. Refer to Appendix 5.

Reference/Supporting Materials

Ontario Agency for Health Protection and Promotion (Public Health Ontario), Provincial Infectious Diseases Advisory Committee. Tools for preparedness: triage, screening and patient management for Middle East Respiratory Syndrome Coronavirus (MERS-CoV) infections in acute care settings. 5th revision, May 2016. Toronto, ON: Queen's Printer for Ontario; 2016.

Ontario Agency for Health Protection and Promotion (Public Health Ontario), Provincial Infectious Diseases Advisory Committee. Best practices for prevention, surveillance and infection control management of novel respiratory infections in all health care settings. Toronto, ON: Queen's Printer for Ontario; 2015.

Appendix 3 MERS-CoV Case Definitions

Person under investigation (Suspect Case)

A person with an acute respiratory infection (ARI), which may include history of fever and new onset of (or exacerbation of chronic) cough or breathing difficulty with or without indications of pulmonary parenchymal disease (e.g., pneumonia or acute respiratory distress syndrome [ARDS]), based on clinical or radiological evidence of consolidation **AND** any of the following:

- Person has travelled to, or resided in, Saudi Arabia¹ within 14 days before onset of illness;
OR
- Person has travelled to, or resided in other affected countries¹, within 14 days before onset of illness **AND had any of the following associated risk factors:**
 - Contact with a healthcare facility (e.g., patient, worker, visitor) within the affected country within 14 days before onset of illness; OR
 - Contact with camel or camel products (e.g., raw milk or meat, secretions, excretions, including urine) within 14 days before onset of illness
- Person had close contact² within 14 days before onset of illness with a person with acute respiratory illness of any degree who had a history of travel to, or residence in, Saudi Arabia or other affected countries with associated risk factors as defined above.
- Person with an acute respiratory illness of any degree of severity who, within 14 days before onset of illness, had close contact² with a confirmed case, presumptive case, or probable case of MERS-CoV while that person was ill.
- The disease occurs as part of a cluster³ that occurs within a 14-day period, without regard to place of residence or history of travel, unless another aetiology⁴ has been identified.
- The disease occurs in a health care worker who has been working in an environment where patients with severe acute respiratory illness are being cared for, particularly patients requiring intensive care, without regard to place of residence or history of travel, unless another aetiology⁴ has been identified.
- A person develops an unexpectedly severe clinical course despite appropriate treatment, *even if another aetiology has been identified*, if that alternate aetiology does not fully explain the presentation or clinical course of the patient

Probable Case

A person with an acute respiratory illness of any degree of severity who had close contact with a confirmed case or presumptive confirmed case and from whom laboratory diagnosis of MERS-CoV is unavailable⁵ or inconclusive⁶.

Presumptive Confirmed Case

A person with a positive laboratory test result of infection for MERS-CoV virus from the PHOL that is awaiting confirmation by the National Microbiological Laboratory.

Confirmed Case

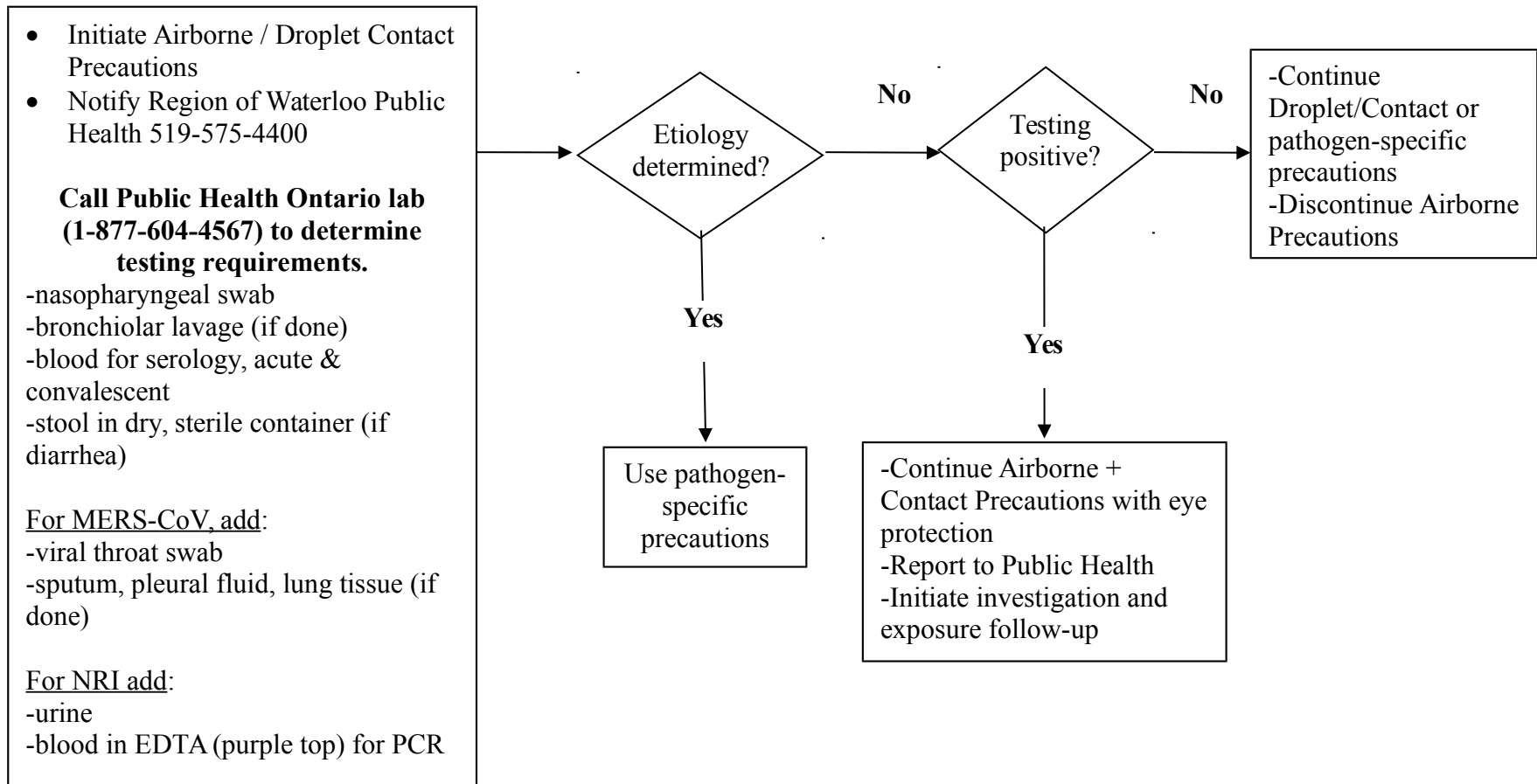
A person with laboratory confirmation⁷ of infection with the MERS-CoV virus.

Notes:

1. Saudi Arabia is currently experiencing continuing local transmission of MERS-CoV. Other affected countries in the Middle East with recent limited transmission among adults include Jordan, Oman, Qatar, United Arab Emirates, and Yemen. However, for these other countries, cases have almost been exclusively limited to adults who have had contact with camel or camel products. The risk of MERS CoV for individuals from these other countries without healthcare or camel exposure is extremely low.
2. Close contact is defined as: anyone who provided care for the patient, including a health care worker or family member, or who had other similarly close physical contact; or anyone who stayed at the same place (e.g. lived with, visited) as a confirmed case, presumptive confirmed case, or probable case while the case was ill.
3. A cluster is defined as two or more persons with onset of symptoms within the same 14-day period and who are associated with a specific setting, such as a classroom, workplace, household, extended family, hospital, other residential institution, military barracks or recreational camp.
4. Testing should be according to local guidance for management of community-acquired pneumonia. Examples of other aetiologies include *Streptococcus pneumoniae*, *Haemophilus influenzae* type B, *Legionella pneumophila*, other recognized primary bacterial pneumonias, influenza, and respiratory syncytial virus.
5. A laboratory diagnosis of MERS-CoV is unavailable if there is no possibility of acquiring samples for testing.
6. Inconclusive is defined as a positive test on a single target, a positive test with an assay that has limited performance data available, or a negative test on an inadequate specimen.
7. Laboratory confirmation of infection with MERS-CoV by the National Microbiology Laboratory.

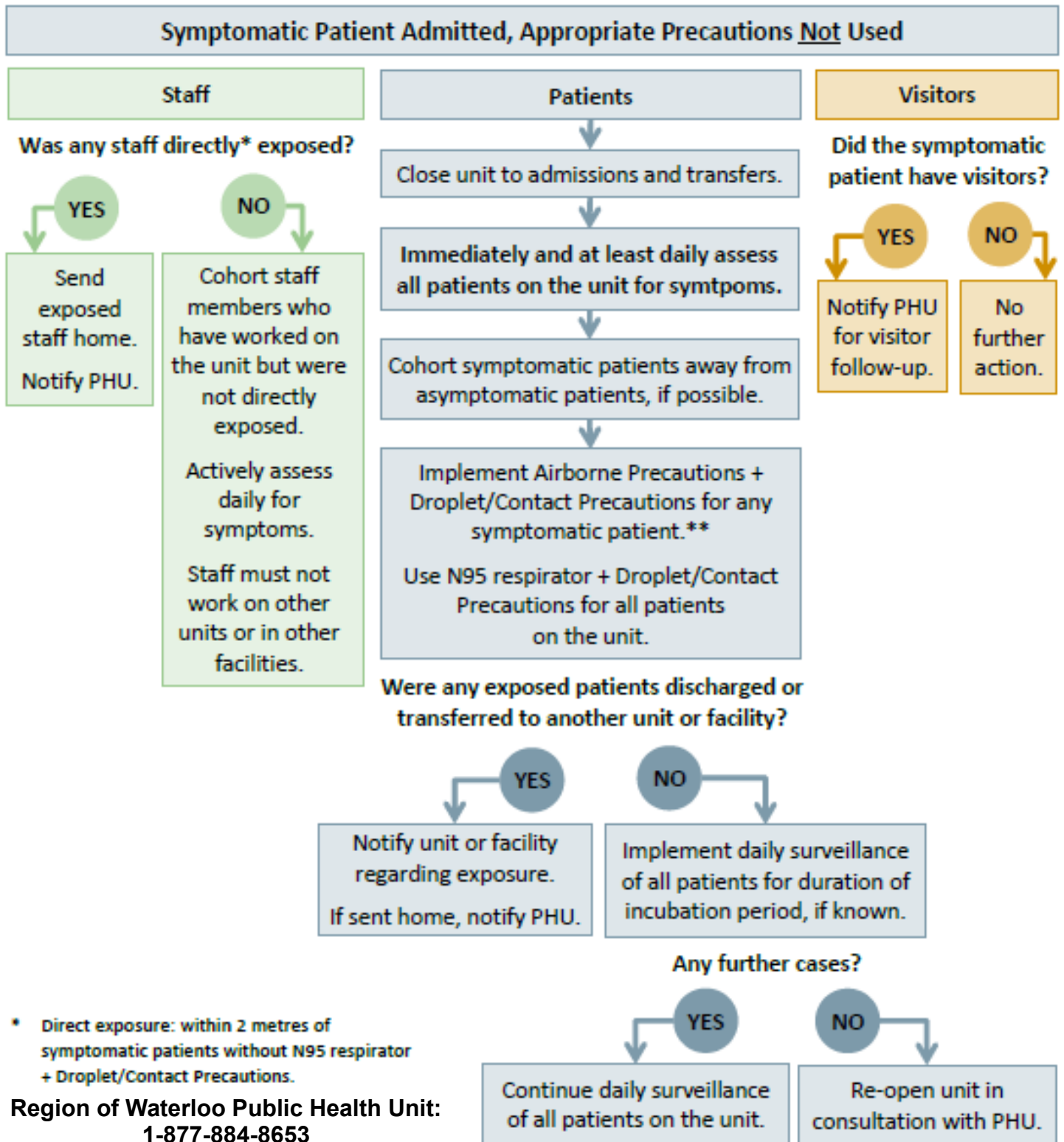
Appendix 4

Management of Suspect, Probable and Confirmed Cases of MERS-CoV or Novel Respiratory Infection (NRI) Algorithm



Appendix 5

Algorithm for Response to Symptomatic Patients Admitted without the Use of Appropriate Precautions



* Direct exposure: within 2 metres of symptomatic patients without N95 respirator + Droplet/Contact Precautions.

