

# Guidance for Acute Care Settings Regarding Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Infections

Provincial Infectious Diseases Advisory Committee (PIDAC)

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The **Provincial Infectious Diseases Advisory Committee on Infection Prevention and Control (PIDAC-IPC)** is a multidisciplinary committee of health care professionals with expertise and experience in Infection Prevention and Control. The committee advises Public Health Ontario on the prevention and control of health care associated infections, considering the entire health care system for protection of both clients/patients/residents and health care providers. PIDAC-IPC produces “best practice” knowledge products that are evidence-based, to the largest extent possible, to assist health care organizations in improving quality of care and client/patient/resident safety.

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#### **NOTES**

**This document is intended to provide best practices only. Health care settings are encouraged to work towards these best practices in an effort to improve quality of care.**

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# Guidance for Acute Care Settings Regarding Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Infections

As of June 5, 2013, 54 human cases of illness due to Middle East Respiratory Syndrome coronavirus (MERS-CoV) have been described in nine countries (United Kingdom, Kingdom of Saudi Arabia, United Arab Emirates, Qatar, Jordan, France, Germany, Tunisia and Italy). Illness is a severe acute respiratory infection associated with renal failure; 30 of these cases have died of their disease. Information on the current incidence of MERS-CoV may be obtained from the World Health Organization at:

[http://www.who.int/csr/disease/coronavirus\\_infections/en/index.html](http://www.who.int/csr/disease/coronavirus_infections/en/index.html).

Because of the small number of cases identified to date, there is very limited information on transmission, severity and clinical impact. Small family clusters in the United Kingdom, the Kingdom of Saudi Arabia, Tunisia and Italy suggest that limited human-to-human transmission may occur. The mode of transmission is unknown. Nosocomial transmission has occurred in France and Saudi Arabia. Other than the cases of household transmission identified in the United Kingdom, Tunisia and Italy and the nosocomial cases in France, all cases have had exposure to countries of the Arabian peninsula.

Health care providers and acute care facilities around the world should be conducting surveillance to identify cases of MERS-CoV that may present to their facilities, and to prevent transmission from such cases if they occur.

## Preparedness Before the First Case Arrives

<b>Surveillance</b>	<input type="checkbox"/> Establish institutional responsibility for tracking information about MERS-CoV (and other emerging pathogens).
<b>Education</b>	<input type="checkbox"/> Ensure that Emergency Department (ED) staff are aware of risk factors and updated as needed regarding case definition and screening for travel history. <input type="checkbox"/> Consider audits of ED triage screening. <input type="checkbox"/> Provide information to care providers (particularly nurses, physicians, respiratory therapists; focus on ED and ICU) on precautions to be taken for patients with suspected/confirmed MERS-CoV infection.
<b>Laboratory Readiness</b>	Establish: <input type="checkbox"/> a notification system for laboratory regarding suspect patients; <input type="checkbox"/> a mechanism for notification and prompt delivery of specimens from suspected patients to your public health laboratory; <input type="checkbox"/> a system for communicating results to relevant staff and departments; <b>a MERS-CoV result should be treated as a critical result;</b> <input type="checkbox"/> safety protocols for laboratory staff who will be handling specimens.
<b>Communication</b>	<input type="checkbox"/> Draft an outline of a communication plan associated with admission of a suspected/confirmed case.
<b>Planning</b>	<input type="checkbox"/> Develop a case management plan. <input type="checkbox"/> Review/update plan semi-annually.
<b>Case Treatment</b>	<input type="checkbox"/> Consider participation in investigations to describe clinical features and epidemiology and investigate new therapy (e.g., <a href="http://isaric.tghn.org/">isaric.tghn.org/</a> ).

## Components of Case Management Plan

### Accommodation

- Identify appropriate room in ED for patients being investigated for disease.
- Establish timeline for movement of patient out of ED if admission is required.

### Additional Precautions

- Patients will require accommodation in an airborne infection isolation room (AIIR), and Droplet/Contact/Airborne Precautions (i.e., gown, gloves, eye protection, N95 respirator\*).
- Ensure that precautions are initiated whenever a case is suspected, to be discontinued by infection prevention and control staff or their designate when case is cleared.

### Diagnosis

- Document the process for confirming that patient meets the case definition and requires testing.
- Consider availability of materials to remind staff how to obtain specimens using appropriate precautions.
- Document the process and communications required for rapid transport and testing of relevant specimens.

### Communication

- Notify local public health unit and public health laboratory.
- Notify pre-designated internal stakeholders as per plan (e.g., senior management team, Occupational Health, Infection Prevention and Control, Communications, microbiology laboratory).

### Education/Training

- Establish mechanism for updating institution's knowledge regarding status of MERS-CoV (e.g., via public health department).
- Define what materials will be needed (e.g., Q&A for ED/ICU staff; email to senior management; reassurance to laboratory staff who will be handling specimens) and who will be responsible for drafting and review.
- Define which hospital departments may be providing care and/or provide diagnostic services for the patient and require information (e.g., nursing areas, respiratory therapy, physiotherapy, occupational therapy, nutrition, diagnostic imaging, pastoral care, laboratories, pharmacy, security).
- Define contractors and external agencies whose employees may have been exposed (e.g., Emergency Medical Services, other first responders, home care services).
- Draft messages/ information needed for family and visitors, in collaboration with local public health department.

### Follow-up for Identification of Transmission

- Consult with public health authorities regarding risk assessment, and develop a plan for follow-up of exposed staff and visitors.
- Report to local public health to identify and manage relevant out of hospital exposures.
- Confirm guidelines for follow-up for staff and patients (e.g., World Health Organization, Public Health Agency of Canada).
- Identify staff/patients/visitors who require follow-up.

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\* In Ontario, the Ministry of Labour requires N95 respirator and AIIR for MERS-CoV. This advice differs from guidance from the Public Health Agency of Canada.

## Guidance for Exposure Follow-up

Most local public health laboratories do not currently have tests available for MERS-CoV, but samples may be sent to the Public Health Ontario Toronto laboratory, which does have testing available. At the present time, serological testing for MERS-CoV is not available through the National Microbiology Laboratory; but blood may be collected for acute and convalescent serology testing at presentation and at 21-28 days after onset should testing become available.

### WHO REQUIRES FOLLOW-UP

The following health care workers require follow-up:

- A worker who provided direct clinical or personal care to or examined a symptomatic confirmed case  
OR
- A worker in the same room at the time an aerosol-generating procedure was performed  
OR
- A worker with more than 15 minutes of face-to-face contact  
AND
- who was not wearing gown/gloves/eye protection/N95 respirator.

Visitors who require follow-up:

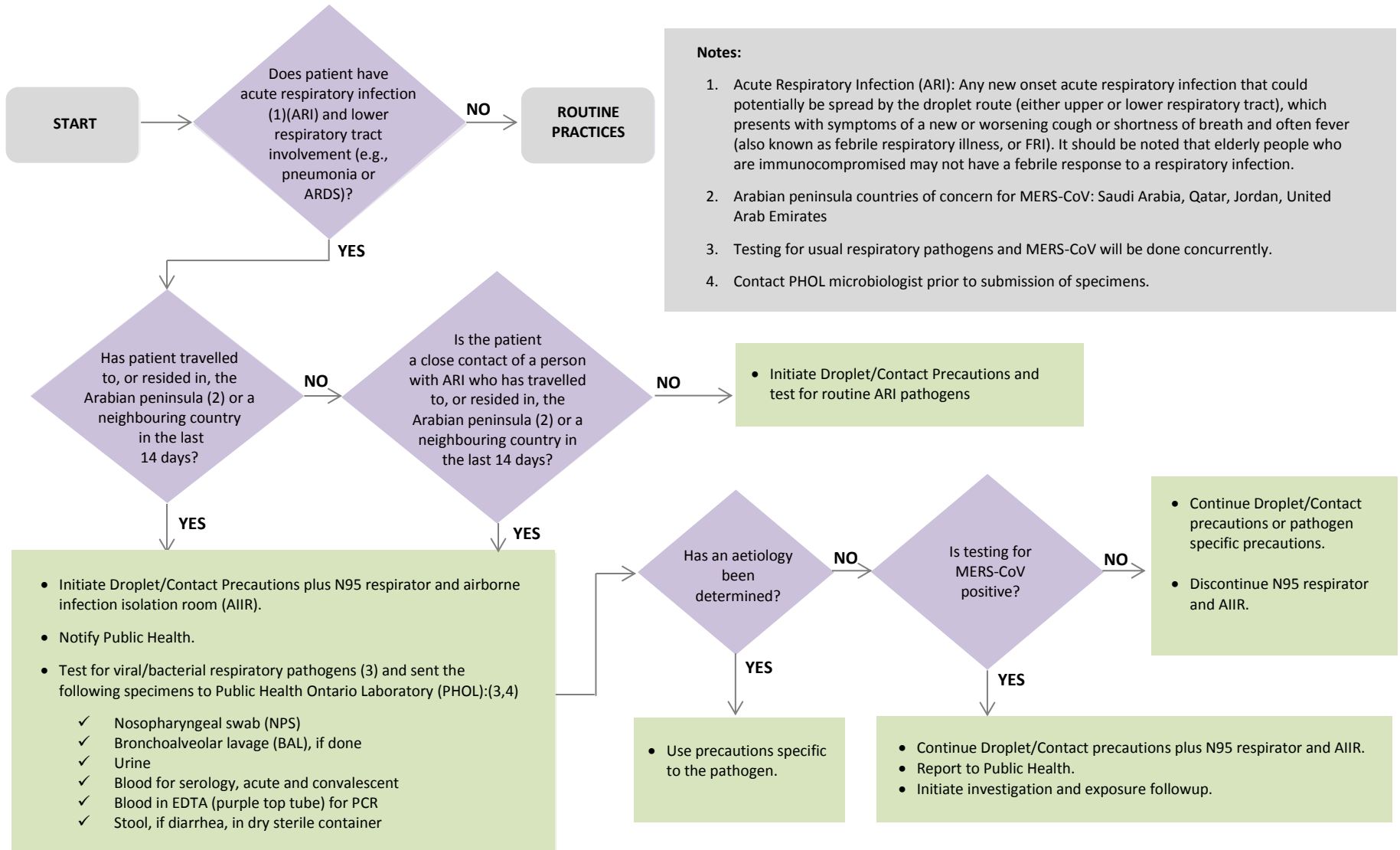
- Visitors at the bedside of a confirmed case for more than 15 minutes without wearing gown/glove/face protection (i.e., not adhering to Droplet/Contact Precautions)

### WHAT FOLLOW-UP IS REQUIRED

For those that require follow-up:

- Assess daily for respiratory symptoms for 12 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 individual from work, restrict to home, collect nasopharyngeal swab for multiplex PCR and MERS-CoV testing.
- Acute (as soon as convenient after exposure identified) and convalescent (day 21 after last exposure) serology for MERS-CoV antibody testing.

# Case Finding Algorithm for Middle East Respiratory Syndrome Coronavirus (MERS-CoV)



**Notes:**

1. Acute Respiratory Infection (ARI): Any new onset acute respiratory infection that could potentially be spread by the droplet route (either upper or lower respiratory tract), which presents with symptoms of a new or worsening cough or shortness of breath and often fever (also known as febrile respiratory illness, or FRI). It should be noted that elderly people who are immunocompromised may not have a febrile response to a respiratory infection.
2. Arabian peninsula countries of concern for MERS-CoV: Saudi Arabia, Qatar, Jordan, United Arab Emirates
3. Testing for usual respiratory pathogens and MERS-CoV will be done concurrently.
4. Contact PHOL microbiologist prior to submission of specimens.



# Bibliography/Further Reading:

1. Information for Health Workers and Health Sector Employers regarding nCoV-EMC:  
<http://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/Default.aspx>
2. World health organization guidance on novel coronavirus infections:  
[http://www.who.int/csr/disease/coronavirus\\_infections/en/](http://www.who.int/csr/disease/coronavirus_infections/en/)
3. Public Health Agency of Canada (PHAC) Interim Guidance - Novel Coronavirus (nCoV):  
<http://www.phac-aspc.gc.ca/eri-ire/coronavirus/guidance-directives/nCoV-ig-dp-eng.php>
4. U.S. Centers for Disease Control and Prevention Guidance:  
<http://www.cdc.gov/coronavirus/ncv/index.html>
5. Public Health England Guidance:  
<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/NovelCoronavirus2012/Guidance/>
6. PHAC Biosafety guidance for specimens:  
<http://www.phac-aspc.gc.ca/lab-bio/res/advi-avis/hce-che-2013-01-22-eng.php>  
No special handling required for diagnostic specimens in hospital laboratories.

