

Severe Acute Respiratory Infection (SARI) Guidelines

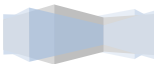
Chief Public Health Office

Department of Health & Wellness



2020

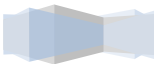
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Severe Acute Respiratory Infection (SARI) Guidelines

Background

Surveillance for the clinical signs and symptoms of severe acute respiratory infection (SARI) is increasingly important. Humans, and viruses, can now easily circumnavigate the globe in less than 24 hours. When a new respiratory virus is introduced to a naive population clinical signs and symptoms of SARI will present first. Unlike with known pathogens, health professionals cannot rely on laboratory confirmation and routine reporting mechanisms for SARI.

An inherent quality of new, emerging respiratory viruses is they are not yet fully characterized; surveillance for the clinical symptoms of SARI introduces a more sensitive case definition designed to detect infections of emerging respiratory pathogens prior to laboratory confirmation.

Prompt recognition of SARI and reporting to public health facilitates epidemiological investigation which can potentially curb the spread of disease. In addition to the importance of recognizing SARI for surveillance purposes, prompt recognition of SARI assists health care workers in implementing appropriate infection prevention and control measures to protect not only themselves, but other patients and those in contact with the case.

This document serves as a guide for health professionals when they encounter a case of SARI on Prince Edward Island and was created by adapting both national and other provincial/territorial documents.

Increased vigilance is needed for surveillance of SARI since the emergence of Avian Influenza A (H7N9) in China, Middle East Respiratory Syndrome Coronavirus (MERS-CoV) on the Arabian Peninsula and 2019 Novel Coronavirus (2019-nCoV).

Avian Influenza A

Since February 2013, well over 1500 human cases of A/H7N9 have been reported with a case fatality of 39%. To date, all cases have been confined to or linked to travel to China. Although the etiology remains unknown, the majority of cases report contact with poultry.

MERS-CoV

Since the emergence of MERS-CoV in Saudi Arabia in September 2012, there have been over 160 cases with a case fatality of 42%. All cases of MERS have been linked through travel to, or residence in, countries in and near the Arabian Peninsula. The reservoir for this novel coronavirus has yet to be elucidated, although bats and camels have been postulated. MERS-CoV has spread from ill people to others through close contact, such as caring for or living with an infected person.

Novel Coronavirus 2019

In December 2019, China identified an outbreak of respiratory illness in Wuhan, China, which early reports link to a large seafood and animal market, suggesting animal-to-person spread. In January 2020, it was determined that there was limited person-to-person transmission.



Severe Acute Respiratory Infection (SARI) Guidelines

Duty to Report

Clinicians should be alert for patients presenting with SARI (see case definition, p.8) in particular with appropriate travel history or contact with someone with a travel history. Physicians should report any hospitalized patients with suspected SARI to the Chief Public Health Office¹ (as per Public Health Act requirements). The **Case Report Form** available in Appendix A will need to be completed as soon as possible.

The Chief Public Health Office will follow-up immediately to facilitate² any contact tracing using the **Contact Tracing Form** (Appendix B). Contacts that will be investigated include:

- Anyone who stayed at the same place (e.g. lived with, visited within the same room) as a probable or confirmed case while the case was symptomatic; OR
- Anyone who provided direct care for a case, including health workers and family members or anyone who had other similarly close physical contact

Infection Control Measures

Prior to any patient interaction, all healthcare workers (HCWs) have a responsibility to assess the infectious risk posed to themselves and to other patients, visitors, and HCWs. Infection control precautions are important to protect HCWs and other patients and visitors. Recommendations for infection prevention and control measures for patients presenting with suspected infection with SARI in all health care settings include:

1. **Routine Practices:** For all patients, at all times, in all healthcare settings including when performing a point-of-care risk assessment, and adherence to respiratory hygiene and hand hygiene.
2. **Contact and Droplet Precautions** (*should be implemented empirically*):
 - Wear gloves and a long-sleeved gown upon entering the patient's room, cubicle or bedspace.
 - Wear facial protection (surgical or procedure mask and eye protection, or face shield, or mask with visor attachment) when within two (2) metres of a patient suspected or confirmed to have SARI infection.
3. **Airborne Precautions:** When performing aerosol-generating medical procedures (AGMPs³). A respirator and face/eye protection should be used by all HCWs present in a room where an AGMP is being performed on a patient suspected or confirmed to have SARI infection. Whenever possible, AGMPs should be performed in a negative pressure room.

¹ Chief Public Health Office: 902-368-4996 or fax: 620-3354 or after hours on-call number: 902-629-9624

² Assistance with contact tracing may include: ICPs, occupational health and safety and public health nursing

³ Procedures that can generate aerosols include: intubation, manual ventilation, open endotracheal suctioning, cardiopulmonary resuscitation, sputum induction, nebulization, surgery, non-invasive positive pressure ventilation (CPAP, BiPAP) and autopsy.



Severe Acute Respiratory Infection (SARI) Guidelines

Further infection prevention and control information for **MERS-CoV** can be found at the link:
<http://www.phac-aspc.gc.ca/eri-ire/coronavirus/guidance-directives/nCoV-ig-dp-eng.php>

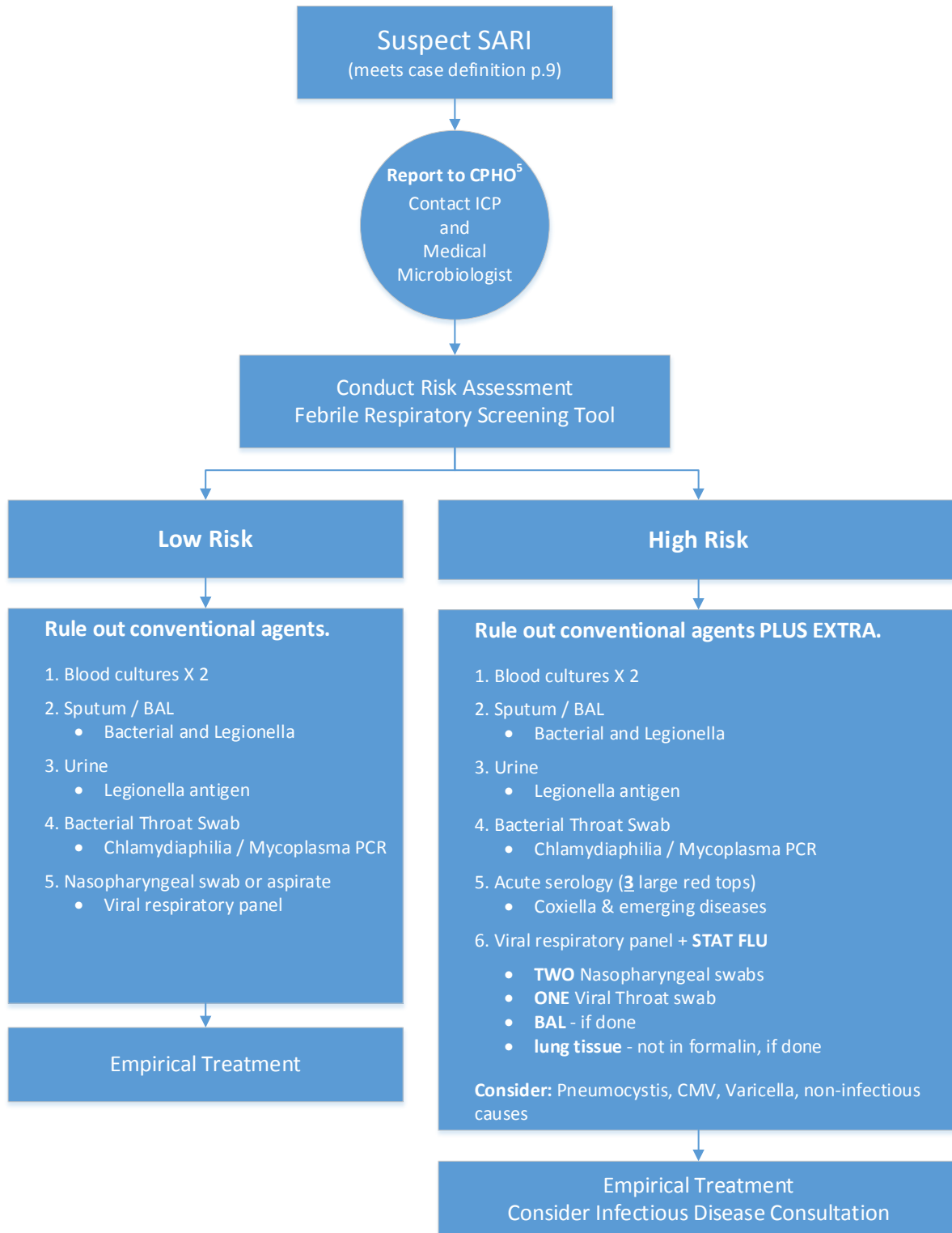
Further infection prevention and control information for H7N9 can be found at the link :
<http://www.phac-aspc.gc.ca/eri-ire/h7n9/guidance-directives/h7n9-ig-dp-eng.php>



Severe Acute Respiratory Infection (SARI) Guidelines

Laboratory Information / Health Care Algorithm

Front-line staff are asked to continue to use the **Febrile Respiratory Screening Tool** at triage as per usual practice.

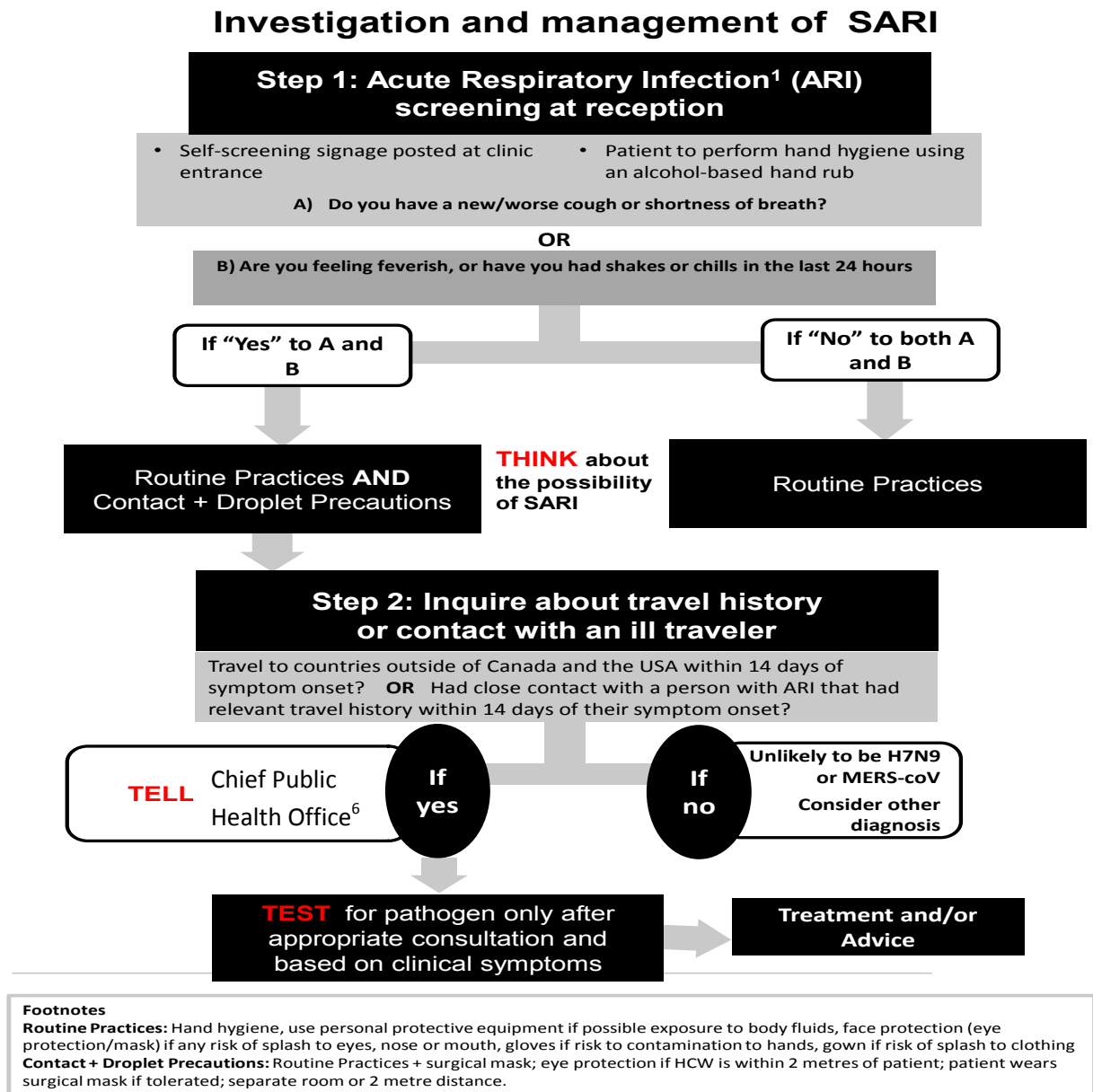


⁵ Chief Public Health Office: 902-368-4996 or fax: 620-3354 or after hours on-call number: 902-629-9624



Severe Acute Respiratory Infection (SARI) Guidelines

If a patient is admitted to **Intensive Care** please use the following algorithm for SARI screening:



⁶ Chief Public Health Office: 902-368-4996 or fax: 620-3354 or after hours on-call number: 902-629-9624

Severe Acute Respiratory Infection (SARI) Guidelines

Case Definition⁴

The provincial case definition for SARI is applicable to any person meeting **ALL of the following** five criteria (I, II, III, IV, and V):

I. Respiratory symptoms

- Fever (≥ 38.0 degrees Celsius)¹ **AND**
- New onset of (or exacerbation of chronic) cough or breathing difficulty

AND

II. Evidence of illness progression

- Either radiographic evidence of infiltrates consistent with pneumonia, or a diagnosis of acute respiratory syndrome (ARDS) or severe ILI², which may also include complications such as encephalitis, myocarditis or severe and life-threatening complications

AND

III. ICU/ventilation

- Admission to intensive care unit or other area of facility where critically ill patients are cared for **OR** mechanically ventilated

AND

IV. No alternative diagnosis within the first 72 hours of hospitalization

- Results of preliminary clinical and/or laboratory investigations, within the first 72 hours, cannot ascertain a diagnosis that reasonably explains the illness

AND

V. One or more of the following exposures/conditions:

- Residence, recent travel (within ≤ 10 days of illness onset) to a country where human cases of novel influenza virus or other emerging/re-emerging pathogens have recently been detected or are known to be circulating in animals.
- Close contact with an ill person who has been to an affected area/site within 10 days prior to onset of symptoms.
- Exposure to settings in which there have been mass die-offs or illness in domestic poultry or swine in the previous 6 weeks.
- Occupational exposure involving direct health care, laboratory or animal exposure:
 - Health care exposure involving health care workers who work in an environment where patients with severe acute respiratory infections are being cared for, particularly patients requiring intensive care; or
 - Laboratory exposure in a person who works directly with laboratory biological specimens; or
 - Animal exposure in a person employed as one of the following;
 - Poultry/swine farm worker
 - Poultry/swine processing plant worker
 - Poultry/swine culler (catching, bagging, transporting, or disposing of dead birds/swine)
 - Worker in live animal market
 - Dealer or trader of pet birds, pigs or other potentially affected animals
 - Chef working with live or recently killed domestic poultry, swine or other potentially affected animals
 - Veterinarian worker

⁴ Case definition was adapted from the Public Health Agency of Canada.



Severe Acute Respiratory Infection (SARI) Guidelines

- Public health inspector/regulator

For Chief Coroner's Office use ONLY: SARI following autopsy	
A deceased person with the following:	
I.	History of respiratory symptoms <ul style="list-style-type: none">• History of unexplained acute respiratory illness (including fever, and new onset of (or exacerbation of chronic) cough or breathing difficulty) resulting in death
AND	
II.	Autopsy performed with findings consistent with SARI <ul style="list-style-type: none">• Autopsy findings consistent with the pathology of ARDS without an identifiable cause
AND	
III.	No alternate diagnosis that reasonably explains the illness
AND	
IV.	One or more of exposures/conditions, as listed above.

¹ As per the influenza-like illness (ILI) definition, fever may not be prominent in patients under 5 years or over 65 years as well as in immuno-suppressed individuals. Failure to take temperature should not rule out a history of self-reported fever. Clinical judgment should always prevail with regard to these groups.

² Severe ILI: In addition to the symptoms of ILI, severe ILI may include complications such as encephalitis, myocarditis or other severe and life-threatening complications.

³ Close contact is defined as: Anyone who provided care of the patient, including a health care worker or family member, or who had other similarly close physical contact; anyone who stayed at the same place (e.g. lived with, visited) as a probable or confirmed case while case was ill.



EMERGING RESPIRATORY PATHOGENS AND SEVERE ACUTE RESPIRATORY INFECTION (SARI) CASE REPORT FORM

SECTION 1: CASE PROTECTED INFORMATION – Local / Provincial / Territorial use only

DO NOT FORWARD THIS SECTION TO PHAC

CASE Information		PROXY Information	
Last name:		Is respondent a proxy? (e.g. for deceased patient, child)	
First name:		No	Yes (complete information below)
Usual residential address:		Last name:	
City:		First name:	
Province/Territory:		Relationship to case:	
Postal code:		Phone number(s):	
Local Health Region		Phone number	
Phone number(s):			
Phone number			
Date of Birth		(dd/mm/yyyy)	
Local Case ID:			
Contact information for person reporting			
First and Last Names:			
Telephone #:			
Email:			

Instructions for Completion

- Please complete as much detail as possible on this form at the time of the initial report.
- It is not expected that all fields will be completed during the initial report, but that updates will be made when information becomes available.

Instructions to local public health authorities

- **Reporting:** Please report cases using normal local / provincial/territorial methods
- **Travel:** The Office of Quarantine Services at the Public Health Agency of Canada may be of assistance with requesting passenger manifests from conveyance operators, when requested to do so, by a local public health authority. Local public health authorities can contact the manager on-call 1-416-MANAGER (626-2437).

Instructions to provincial / territorial public health authorities

- **Reporting:** Fax completed form (without first page) to 1-800-332-5584 and send an email notification (do not attach form) to HSFLUEPI@phac-aspc.gc.ca, within 24 hours of case notification to Provincial/Territorial Public Health.
- After regular business hours (8:00 – 5:00pm ET) please contact the Agency Medical Officer on-call at 613- 952-7940



ADMINISTRATIVE INFORMATION

Reporting Province / Territory:

BC AB SK MB ON QC NB NS PE NL YK NT NU

Contact information for P/T person reporting

First and Last Names:

Telephone #:

Email:

P/T Case ID:

Initial Report

Updated Report

Report Date:

(dd/mm/yyyy)

Outbreak or cluster related? Yes No

If yes, local Outbreak ID:

Has the outbreak been declared and made public?

Yes No

If case is related to a provincial /territorial outbreak, P/T Outbreak ID:

Number of ill persons affected by the outbreak:

CASE TYPE

Unknown at this time

Severe Acute Respiratory Infection

Novel Coronavirus *Specify:*

Other Novel Respiratory Pathogen

Specify:

Novel Influenza A

H1 H3 H5 H7

Other:

Novel Influenza B

SURVEILLANCE CASE CLASSIFICATION *(please refer to case definitions if available)*

Suspect / Patient Under Investigation

Probable

Confirmed

DEMOGRAPHIC INFORMATION

Gender: Male Female Unknown

Age: years *If under 2 years* months Unknown

Does the case identify as Aboriginal? Yes No Refused to answer Unknown

If yes, please indicate which group: First Nations Metis Inuit

Does the case reside on a First Nations reserve most of the time? Yes No Refused to answer Unknown

SYMPTOMS *(check all that apply)*

Date of onset of first symptom(s):

(dd/mm/yyyy)

Asymptomatic

Abdominal pain	Dizziness	Nausea	Sore throat
Anorexia/decreased appetite	Fatigue	Nose bleed	Sputum production
Arthralgia	Fever ($\geq 38^{\circ}\text{C}$)	Otitis	Swollen lymph nodes
Chest pain	Feverish/chills (temp. not taken)	Rhinorrhea/nasal congestion	Vomiting
Conjunctivitis	Headache	Rash	Other, specify:
Cough	Malaise	Seizures	
Diarrhea	Myalgia	Shortness of breath / difficulty breathing	
		Sneezing	

CLINICAL COURSE, HOSPITALIZATIONS, COMPLICATIONS and OUTCOME

Date of first presentation to medical care:		(dd/mm/yyyy)	
Clinical Evaluations (check all that apply)		Encephalitis	Renal Failure
Altered mental status		Hypotension	Sepsis
Arrhythmia		Meningismus / nuchal rigidity	Tachypnea (accelerated respiratory rate)
Clinical or radiological evidence of pneumonia		O2 saturation $\leq 95\%$	Other (specify):
Diagnosed with Acute Respiratory Distress Syndrome			
Case Hospitalized?	Yes	No	Unknown
Admission Date:		(dd/mm/yyyy)	
Diagnosis at time of admission:		Re Admission Date: (dd/mm/yyyy)	
Case admitted to Intensive Care Unit (ICU)	Yes	No	Unknown
ICU Admission Date:		(dd/mm/yyyy)	
ICU Discharge Date:		(dd/mm/yyyy)	
Patient isolated in hospital?	Yes	No	Unknown
If yes, specify type of isolation (e.g. respiratory droplet precaution, negative pressure):			
Supplemental oxygen therapy	Yes	No	Unknown
Mechanical ventilation	Yes	No	Unknown
If yes, number of days on ventilation			
Case Discharged from Hospital	Yes	No	Unknown
Discharge Date 1:		(dd/mm/yyyy)	
Discharge Date 2:		(dd/mm/yyyy)	
Case Transferred to another hospital	Yes	No	Unknown
Transfer Date:		(dd/mm/yyyy)	
Current Disposition	Recovered	Stable	Deteriorating
Deceased		(dd/mm/yyyy)	

If deceased, is post-mortem:		Performed	Pending	None	Unknown
Death attributed/linked to respiratory illness?		Yes	No	Unknown	
Cause of death (as listed on death certificate):					
PRE-EXISTING CONDITIONS and RISK FACTORS (check all that apply)					None identified
Cardiac Disease	Yes	No	Unknown	Hemoglobinopathy/Anemia	Yes No Unknown
<i>If yes, please specify:</i>				<i>If yes, please specify:</i>	
Hepatic Disease	Yes	No	Unknown	Receiving immunosuppressive medications	Yes No Unknown
<i>If yes, please specify:</i>				<i>If yes, please specify:</i>	
Metabolic Disease	Yes	No	Unknown	Substance use	Yes No Unknown
<i>If yes, please specify:</i>				<i>If yes, please specify:</i>	
Diabetes				Smoker (current)	
Obese (BMI > 30)				Alcohol abuse	
Other:				Injection drug use	
Other:				Other:	
Renal Disease	Yes	No	Unknown	Malignancy	Yes No Unknown
<i>If yes, please specify:</i>				<i>If yes, please specify:</i>	
Respiratory Disease	Yes	No	Unknown	Other Chronic Conditions	Yes No Unknown
<i>If yes, please specify:</i>				<i>If yes, please specify:</i>	
Asthma					
Tuberculosis					
Other:					
Neurologic Disorder	Yes	No	Unknown	Pregnancy	Yes No Unknown
<i>If yes, please specify:</i>				<i>If yes, week of gestation:</i>	
Neuromuscular Disorder				Estimated birth date: (dd/mm/yyyy)	
Epilepsy					
Other:				GPA (gravida, para, aborta):	
Immunodeficiency disease / condition	Yes	No	Unknown	Post-Partum (≤6 weeks)	Yes No Unknown
<i>If yes, please specify:</i>					

PROPHYLAXIS

Did the case receive prescribed prophylaxis prior to symptom onset? Yes No Unknown

Specify name:

date of first dose: (dd/mm/yyyy)

date of last dose: (dd/mm/yyyy)

TREATMENT *(submit additional information on a separate page if required)*

In the treatment of this infection, is the case taking:

Antiviral medication

Specify name (1):

Antibiotic/antifungal medication

date of first dose (1): (dd/mm/yyyy)

Immunosuppressant/immunomodulating medication

date of last dose (1): (dd/mm/yyyy)

Unknown

None

Specify name (2):

date of first dose (2): (dd/mm/yyyy)

date of last dose (2): (dd/mm/yyyy)

VACCINATION

Did the case receive the current year's seasonal influenza vaccine?

Yes No Unknown Not yet available

If yes, date of vaccination:
(dd/mm/yyyy)

Did the case receive the previous year's seasonal influenza vaccine?

Yes No Unknown

Did the case receive pneumococcal vaccine in the past? Yes No Unknown

If yes, year of most recent dose: (dd/mm/yyyy)

If yes, type polysaccharide or conjugate: 7 or 13

LABORATORY INFORMATION

Microbiology / Virology / Serology *(complete if applicable)*

Lab ID	Date Specimen Collected	Specimen Type & Source	Test Method	Test Result	Test Date

Antimicrobial Resistance of suspect etiological agent(s) <i>(complete if applicable)</i>					
Lab ID	Name of Antimicrobial	Specimen Type & Source	Test Method	Test Result	Test Date

SOURCE IDENTIFICATION: EXPOSURES *(add additional details in the comments section as necessary)*

Travel

In the 14 days prior to symptom onset, did the case travel outside of their province/territory of residence or outside of Canada? Yes No Unknown

If yes, please specify the following (submit additional information on a separate page if required)

	Country/ City Visited	Hotel or Residence	Dates of Travel
Trip 1			
Trip 2			

In the 14 days prior to symptom onset, did the case travel on a plane or other public carrier(s)? Yes No Unknown

If yes, please specify the following

Travel Type	Carrier Name	Flight / Carrier #	Seat #	City of Origin	Date of Travel

Human

In the 14 days prior to symptom onset, was the case in close contact *(cared for, lived with, spent significant time within close quarters (e.g. co-worker) or had direct contact with respiratory secretions)* with:

A confirmed case of the same disease? If yes, specify the Case ID:	Yes No Unknown
A probable or suspect case of the same disease? If yes, specify the Case ID:	Yes No Unknown

A person who had fever, respiratory symptoms (such as cough or sore throat), or respiratory illness (such as pneumonia)?	Yes	No	Unknown
<i>If yes, specify the type of contact:</i>			
Household member	Person who travelled outside of Canada		
Person who works in a healthcare setting	Person who works in a laboratory		
Works with patients	Other (specify):		
Person who works with animals			
Occupational			
The case is a:			
Healthcare worker or volunteer	If yes, with direct patient contact?	Yes	No
Laboratory Worker handling biological specimens	School or Daycare Worker/Attendee	Unknown	
Veterinary Worker	Farm Worker		
Other:			
Residential			
Resident of a retirement residence or long-term care facility			
Resident in an institutional facility (<i>dormitory, shelter/group home, prison etc.</i>)			
Other:			
Animal			
A. Direct Contact (<i>touch or handle</i>)			
In the 14 days prior to symptom onset, did the case have direct contact with any animals or animal products (<i>faeces or urine, bedding/nests, carcass/fresh meat, fur/skins etc.</i>)? Yes No Unknown			
If yes, specify date of last direct contact:		(dd/mm/yyyy)	
What type of animals did the case have direct contact with? (<i>check all that apply</i>)			
Cat(s)	Dogs	Horses	Cows
	Poultry	Sheep / Goat	Wild Birds
			Rodents
			Swine
Wild game (eg. Deer)	Bats	Camels or Dromedary camels	Other:
Did the animal display any symptoms of illness or was the animal dead? Yes No Unknown			
Where did the direct contact occur? (<i>check all that apply</i>)			
Home	Work (<i>confirm occupation above</i>)	Agricultural Fair or event / Petting Zoo	

