Public health management of cases and contacts of novel coronavirus (2019-nCoV) in Ontario

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Version 3 – Significant Updates:

1. Page 7- Management of PUI who does not require hospital care
2. Pages 13 – 15 - Updates to close contact tracing and categorization
3. Page 15-17 – Recommended activity restrictions and public health monitoring
4. Page 20 - 21 - Changes to Guidance for Travelers

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This document provides information for the public health sector in Ontario. The Ministry of Health has developed this document with contributions from Public Health Ontario (PHO) based on current available scientific evidence and expert opinion. This document is subject to change as new information about the novel coronavirus (2019-nCoV) initially identified in Wuhan, China, is identified and understood.

Nothing in this document is intended to restrict or affect the discretion of local medical officers of health to exercise their statutory powers under the *Health Protection and Promotion Act*. This document is intended for information and guidance purposes only.

Purpose

The Ministry of Health (ministry) has developed this guidance for public health units (PHUs) to use to assess and manage persons under investigation (PUI) and conduct case and contact management activities for 2019-nCoV. This document also contains guidance on the guidance for individuals on arrival to Ontario with a travel history to an affected area within the past 14 days.

This document outlines a strategy to contain the spread of 2019-nCoV in Ontario. PHUs should use this document when the outbreak management objective is containment and there are low levels of importation or community transmission.

PHUs should conduct case and contact management for all probable, presumptive confirmed[1] and confirmed 2019-nCoV cases, as well as for PUIs with high risk of exposure, specifically where the PUI is a contact of a confirmed, presumptive or probable case, or the PUI has exposure to Hubei province, China, in the 14 days prior to onset of symptoms. Case definitions are available in the ministry's Guidance for Health Care Workers and Health Sector Employers posted on the 2019-nCoV website.

Public Health Ontario (PHO) Laboratory conducts testing and shares laboratory results with the requesting health care provider and the relevant PHU; significant results are also shared with the ministry. The identification of a probable case or presumptive confirmed case triggers a number of actions, including activation of the Ministry's Emergency Operations Centre (MEOC)[2], at which PHO and relevant ministry divisions are represented. Once activated, the MEOC is the primary source of information, support and provincial coordination of health system response activities. The MEOC can be accessed through the Health Care Provider Hotline at 1-866-212-2272 on a 24/7 basis. Shortly after activation, the MEOC holds a Health Sector Coordination Teleconference with all relevant stakeholders to discuss next steps, including implementation of the guidance in this document. Once activated, the MEOC will continue to provide Health Sector Coordination for all new cases in Ontario.

[1] A presumptive confirmed case is defined as an individual with a positive polymerase chain reaction (PCR) test conducted by Public Health Ontario (PHO). It is anticipated that the Public Health Agency of Canada's (PHAC's) National Microbiology Laboratory will confirm 2019-nCoV cases in Ontario.
[2] For more information on the MEOC, please view the Ministry of Health Emergency Response Plan.

Investigation Tools

PHUs can use the following tools to conduct case and contact management activities:

- Appendix 1: Ontario's Severe Acute Respiratory Infection (SARI) Case Report Form – PHUs can use this form to guide their collection of information from probable, presumptive confirmed and confirmed cases or their proxies. PHUs should enter all cases in the integrated public health information system (iPHIS), as per iPHIS entry guidelines.
- Appendix 2: Routine Activities Prompt Worksheet for Cases – PHUs can use this sample worksheet to identify potential exposures that may have led to disease acquisition in a case. Along with the SARI Case Report Form in Appendix 1, this worksheet can also be used to interview the case or their proxy to collect detailed information and to investigate potential exposures in the 14 days before onset of symptoms.
- Appendix 3: Daily Clinical Update Form for a Case Managed in an Acute Care Setting and Appendix 4: Daily Clinical Update Form for a Case Managed in a Household Setting – PHUs can use these sample forms to monitor the health status of a probable, presumptive confirmed or confirmed case for the duration of their illness and infectious period (which continues until documentation of two negative tests by PHO on respiratory specimens[3] collected at least 24 hours apart), or until a probable case no longer meets the case definition (i.e., as a result of additional laboratory testing).
- Appendix 5: Close Contact Tracing Worksheet – PHUs can use this sample worksheet to identify close contacts of a probable, presumptive confirmed or confirmed case as well as PUIs with high risk exposures
- Appendix 6: Daily Contact Clinical Update Form – PHUs can use this sample form to follow-up and monitor close contacts.

Assessment and Management of Person Under Investigation (PUI)

Ontario hospitals and the broader provincial healthcare system, including primary and community care, have been alerted to this outbreak associated with 2019-nCoV and advised to assess individuals presenting with acute respiratory symptoms for their travel history and other potential exposures to the virus. Clinicians who identify PUIs and are requesting testing for 2019-nCoV should report the PUI to their local public health unit. Requests for testing need to be discussed with PHO Laboratory. In the hospital setting, clinicians should alert their hospital's Infection Prevention and Control (IPAC) department to ensure appropriate management of the individual. Health care providers

[3] Where feasible, the collection of two respiratory specimens at the time of each testing (e.g. nasopharyngeal plus throat swab is currently recommended.

in the community should discuss with their local PHU how to facilitate clinical evaluation and testing for PUIs depending on their level of illness and exposure history.

Public health involvement with PUIs may include providing guidance on whether the individual is a PUI, and if so, where testing can be safely arranged. PHUs should provide direction to the PUI on self-isolation to prevent potential transmission and actively monitor while testing is pending particularly if the PUI is not in hospital. A single negative result for 2019-nCoV by PHO is sufficient for ruling out a PUI. PHUs may enter PUIs into iPHIS; however, there is no requirement to complete a full SARI case report form for a PUI, or to initiate contact tracing, unless otherwise advised by the MEOC.

PUI with high-risk contacts

PHUs may initiate contact identification and potentially contact follow-up for individuals being tested who are at higher risk of having 2019-nCoV, including:

- Having close contact with a probable, presumptive confirmed or confirmed case in the 14 days prior to symptom onset, OR having been in Hubei province, China, in the 14 days prior to onset of symptoms.

Management of PUI who does not require hospital care

As the case definition is evolving as more is known about this virus, and the epidemiology of affected areas is changing, there may be patients who are being tested for 2019-nCoV who do not meet the PUI case definition. All patients undergoing testing for 2019-nCoV should follow the same PUI advice regarding self-isolation while testing is pending. If PUI does not require hospital care, they should follow the same advice as for a case isolating at home (see Case Management, Public Health Advice in Household Settings) until test results are received.

Reporting of Cases to the Public Health Agency of Canada

Within 24 hours of the identification of a probable or presumptive confirmed case in Ontario, the ministry will report to PHAC as part of national notifiable disease reporting requirements, as well as in accordance with the International Health Regulations.

To meet this timeline, the PHU gathers relevant case information using the SARI form (see Appendix 1 to view Ontario's SARI case report form) in as much detail as possible and as quickly as possible. This form should be used even if the case does not meet the clinical criteria for SARI. Completing all of the fields in the SARI Case Report Form may take some time as they are based on information gathered by PHUs over the course of the case and contact investigation. However, at a minimum, the PHU must submit the

following information to the MEOC[4] as soon as possible to enable provincial reporting to PHAC:

- reporting PHU
- outbreak or cluster related within Ontario
- gender
- age
- date of symptom onset
- symptoms
- whether hospitalized/date of hospitalization
- whether in ICU/ date of ICU admission
- if deceased/ date of death
- laboratory test method and result (when or if available)
- travel history (i.e., dates and locations (city/country), travel conveyance used)
- other possible exposures (e.g., ill contact, live animal market or other animal contact, etc.)

PHUs should enter probable, presumptive confirmed and confirmed cases into iPHIS as per the instructions provided in the iPHIS Special Notice re: iPHIS changes related to the addition of novel coronaviruses to the list of Diseases of Public Health Significance, and the accompanying Quick Reference Summary. PHUs may also submit the case report form to PHO via iPHIS referral.

Case and Contact Management

The identification of a probable, presumptive confirmed or confirmed case triggers an investigation by the PHU in order to assess potential exposures within the 14 days prior to symptom onset and to evaluate potential transmission among close contacts. These investigation results assist in preventing further transmission and improve knowledge about the epidemiology of 2019-nCoV (e.g., provide information about duration and type of exposures that facilitate virus transmission).

Case Management

Recommendations to support PHUs to manage a probable, presumptive confirmed or confirmed case are outlined below.

Case follow-up and monitoring

- The PHU interviews the case and/or household contacts/ family members (i.e., if the case is too ill to be interviewed, has died, or is a child) as soon as possible to collect the reporting information outlined above (see Reporting to the Public

[4] The MEOC provides the PHU with instructions on the reporting process at the initial Health Sector Coordination Teleconference.

Health Agency of Canada) and identify close contacts (see Contact Management).
    - Most PHU investigators conduct these interviews by telephone.
    - For interviews conducted in person, the investigator follows Routine Practices and Contact, Droplet and Airborne Precautions when entering the case's environment (see the ministry's Guidance for Health Care Workers and Health Sector Employers for further information on occupational health & safety (OHS)[5] and infection IPAC measures).
- The PHU interviews the case to identify potential exposures that may have led to disease acquisition (see Appendix 2 for a sample template).
- The PHU monitors the presumptive confirmed and confirmed case's health status on a daily basis for the duration of illness (whether the case is in an acute care setting or household setting) and until two respiratory specimens[6] collected at least 24 hours apart are negative by PHO (see Appendix 3 and Appendix 4 for sample templates to assist with this monitoring). The PHU monitors probable case's health status on a daily basis for the duration of illness.
- Cases that are hospitalized and no longer require hospital-level clinical care but have not had two negative respiratory specimens may be discharged home under self-isolation and PHU active monitoring until two respiratory specimens collected at least 24 hours apart are negative by PHO. Cases discharged home should follow advice below on preventing transmission in household settings.

Public health advice for the case in household settings

The PHU should provide the following advice to a case in a household setting:

- The case should self-isolate while ill and not go to work, school, or other public areas until their symptoms are resolving and until two respiratory specimens[7] collected at least 24 hours apart are negative by PHO. This includes not using public transportation or taxis and limiting visitors.
- If the case must go out for a medical appointment or urgent care, they should wear a mask (surgical/ procedure mask) over their nose and mouth, and travel in a private vehicle if at all possible.
- The case or family members should alert all health care workers about the case's status (exposure and illness) so that appropriate OHS & IPAC measures can be taken (including notifying Ambulance Communication Centres that have a direct link to paramedic services, should an ambulance be called to transport the case).
- The case and household members should reduce opportunities for disease transmission within the household setting:

[5] Further information on legislated occupational health and safety requirements may be found on the Ministry of Labour, Training and Skills Development's Health and Safety website.
[6] Where feasible, the collection of two respiratory specimens at the time of each testing (e.g. nasopharyngeal plus throat swab is currently recommended.
[7] Where feasible, the collection of two respiratory specimens at the time of each testing (e.g. nasopharyngeal plus throat swab is currently recommended.

    - The case should be separated from others in the household environment to the greatest extent possible (e.g., remain/ sleep in a separate room and have a dedicated bathroom; if these steps are not possible, maintain a distance of two metres from others).
    - If the case cannot be separated from others, then they should wear a mask (if tolerated).
    - Shared rooms or areas (e.g., kitchen, bathroom, and the case's room) should be well ventilated (i.e., keep window open if possible and tolerated).
- The case should be instructed about respiratory etiquette:
    - The case should have tissues beside or with them to be able to cover coughs, sneezes or to wipe or blow their nose. If a tissue is not immediately available when coughing or sneezing, the case should cover their mouth and nose with the sleeve of their clothing to reduce droplets spread into the air.
    - The case should cover their mouth and nose with tissues or wear a mask while receiving care (e.g., receiving medications, dressing, bathing, toileting, repositioning in bed).
    - The case should discard tissues/ disposable materials including masks in a plastic-lined, covered garbage can.
    - The case should perform hand hygiene. Alcohol-based hand rub/ sanitizer (ABHR) is preferred however, plain soap and water is acceptable if ABHR is not available. If hands are visibly soiled, clean them with plain soap and water immediately after contamination with respiratory secretions and/ or after disposing of used tissues or masks.
    - The case should use a paper towel to dry hands. If that isn't an option, the case should use a dedicated cloth towel that is kept separate from everyone else's towels.
- The case should limit contact with household members as much as possible, recognizing that care may need to be provided by household members. Caregiving activities may include washing the case's face or hands and assisting with bathing, toileting, dressing, feeding or offering liquids, and taking medications.
- The case may need to make arrangements to remain isolated, including having discussions with their employer, making alternate arrangements to support children/ other dependents and taking steps to ensure an adequate supply of groceries and other necessities.

The PHU should provide the following advice to **household caregivers and others** in the case's immediate household environment:

- The only people in the household should be those who are essential for providing care:
    - People who are not taking care of the case should make arrangements to live somewhere else until the case no longer needs to self-isolate. If this is not possible, they should stay in another room or be separated from the person as much as possible.

    - Anyone who is at higher risk of developing complications from infection should avoid caring for or come in close contact with the case. This includes people with underlying chronic or immunocompromising conditions.
- Household caregivers who have been living in the same household since the case became symptomatic (and who have already had an exposure risk) may decide to use gloves, a mask and eye protection (goggles or a face shield) to reduce their risk of acquiring the virus while providing care and when in the same room as the case.
- A new caregiver coming into the household and who hasn't had previous contact with the case while the case was symptomatic (and therefore has not had a previous exposure) should wear gloves, a mask and eye protection while providing care to the case and when in the same room as the case.
- When outside of the case's room, caregivers must remove personal protective equipment (PPE) in the appropriate sequence to reduce the risk of contamination of hands or face through inadvertent contact with contaminated PPE:
    - After gloves and the gown are removed, perform hand hygiene. Alcohol-based hand rub/ sanitizer (ABHR) is preferred however, plain soap and water is acceptable if ABHR is not available. If hands are visibly soiled, clean them with plain soap and water.
    - Remove eye protection. Then remove the mask by holding only onto the ear loops or ties (do not touch the front of the mask that was over the face) and dispose of the mask immediately into a waste container or disposable bag. Clean eye protection with a cleaner/disinfectant as per manufacturer's instructions or place into a container for later cleaning/disinfection.
    - Perform hand hygiene again immediately after removing PPE. If hands are visibly dirty or have come into contact with respiratory secretions or other body fluids, clean them with plain soap and water to physically remove the soil.
- Caregivers should avoid other types of possible exposure to the case or contaminated items. For example, they should avoid sharing toothbrushes, cigarettes, eating utensils, drinks, towels, washcloths or bed linen. Dishes and eating utensils should be cleaned with dish soap and water after use. Use of a dishwasher with a drying cycle also provides a sufficient level of cleaning.
- High-touch areas such as toilets, sink tap handles, doorknobs and bedside tables should be cleaned daily using regular household cleaners and more often if visibly soiled. The contact's clothes and bedclothes can be cleaned using regular laundry soap and water and do not require separation from other household laundry.
- All waste generated can be bagged in a regular plastic bag and disposed of in regular household waste.

Given the high degree of exposure, household contacts should follow guidance on monitoring and activity restriction based on their level of exposure (see Contact Management) for 14 days from last exposure to the case. The ministry has developed a fact sheet on Preventing 2019-nCoV from Spreading to Others in Homes and

Communities that PHUs can use to provide guidance and information for probable cases, presumptive confirmed cases and confirmed cases who are being cared for in household settings.

In the event the case lives in a congregate setting, with communal facilities such as dining areas and bathrooms, the PHU should assess the living situation for options to minimize interactions with others. This may include assessing bathroom and kitchen facilities or alternate living arrangements.

Occupational health & safety and infection prevention & control advice for acute care settings

- If the PHU refers the probable, presumptive confirmed or confirmed case to an acute care setting for follow-up, the PHU should provide a procedure mask for the case to wear when in public and during transport (in a private vehicle or ambulance). The PHU should notify the acute care setting of the case's impending arrival and advise/remind the organization that at this time, in addition to Routine Practices, cases are to be placed on **Droplet/Contact/Airborne Precautions** preferably in an airborne infection isolation room. For now, fit tested N95 respirators and eye protection are to be worn for direct patient care.
- Acute care settings should consult the ministry's website on 2019-nCoV.

Contact Management

PHUs and acute care settings should conduct active monitoring of close contacts for 14 days after last exposure to a probable, presumptive confirmed, or confirmed case. Close contacts of cases[8] should self-isolate for 14 days after last exposure to the case and self-monitor for signs and symptoms in addition to the active monitoring conducted by PHUs. Contact management may involve collaboration between PHUs and acute care settings:

- PHUs actively monitor close contacts in the community. This includes close contacts who were exposed in an acute care setting or other health care setting (e.g., primary health care setting, urgent care clinic) but live in the community. The responsibility to actively monitor close contacts that were exposed during their hospital admission (i.e., inpatients) and subsequently discharged prior to completing 14 days should be transferred from the acute care setting to the PHU.
- Acute care settings actively monitor close contacts who were exposed in the hospital and are currently admitted (i.e., inpatients). This includes patients who were exposed in the emergency department and subsequently admitted. Acute care settings also actively monitor health care workers who were exposed at work. Acute care settings should refer to PIDAC Tools for Preparedness: Triage, Screening and Patient Management for Middle East Respiratory Syndrome Coronavirus (2019-nCoV) Infections in Acute Care Settings for additional information.

Tracing and categorization of Close Contacts

- PHUs conduct contact tracing activities to identify close contacts of a probable, presumptive confirmed or confirmed case (see Appendix 5 for a sample worksheet to conduct close contact tracing activities). PHUs may also conduct contact identification and possibly contact follow-up activities for PUIs who are close contacts of cases or travel to Hubei province, China, in the 14 days prior to symptom onset.
- PHUs should assess each contact based on exposure setting and risk of exposure based on the interaction with the case.
- **Period of communicability:**
    - As early symptoms of 2019-nCoV may be mild and non-specific, and early reports of potential asymptomatic transmission, contact tracing should start from the last day the case felt asymptomatic/well. Contact tracing should also continue to assess for possible new exposures until the case is recovered and released from isolation.
    - In the event of an asymptomatic presumptive or confirmed case, contact tracing may extend back to date of likely source of exposure, or up to 14 days prior to test specimen collection date.

[8] This includes: presumptive confirmed cases, confirmed cases, and PUIs who need to be assessed by the local PHU regarding whether or not they should self-isolate, pending test results on the PUI

- **Table 1** details contacts by their exposure setting and exposure type, as well as their recommended activity restriction. **Table 2** details description of activity level and PHU follow-up.

Table 1: Contact management recommendations based on exposure setting and type

Exposure Setting	Exposure Type	Activity Restriction Recommendations (see Table 2)
Household (includes other congregate settings)	• Anyone living in the same household, while the case **was not self-isolating**: ○ This may include members of an extended family, roommates, boarders, 'couch surfers' etc. ○ This may include people who provided care for the case (e.g., bathing, toileting, dressing, feeding etc.) ○ This may include congregate settings (e.g., dormitories, shelters, group homes, detention centres, child/daycare centres) where contacts are in direct contact through shared communal living areas (e.g., kitchen, bathroom, living room)	Full activity restrictions
	• Household contacts as above who only had exposure to the case while the case **was self-isolating** and applying consistent and appropriate precautions	No activity restrictions
Community	• Had direct contact with infectious body fluids of the case (e.g., coughed on or sneezed on) • Had close prolonged[1] contact while case **was not self-isolating**	Full activity restrictions
	• Had prolonged[1] contact while the case **was self-isolating**	Partial Restrictions
	• Only transient interactions (e.g., walking by the case or being briefly in the same room)	No activity restrictions
Healthcare	• Healthcare worker and/or support staff who provided care for the case, or who had	Full activity restrictions

	other similar close physical contact **without** consistent and appropriate use of personal protective equipment	
	• Healthcare worker and/or support staff who provided care for the case, or who had other similar close physical contact **with** consistent and appropriate use of personal protective equipment	No activity restrictions
	• Laboratory worker processing 2019-nCoV specimens from case **without** appropriate PPE (including accidental exposures where appropriate PPE was breached).	Full activity restrictions
	• Laboratory worker processing 2019-nCoV specimens from case **with** appropriate PPE.	No activity restrictions
Conveyance (e.g., aircraft, train, bus)[2]	• Passengers seated within 2 meters of the case (approximately three to five two seats in all directions, depending on type of aircraft and seating) • Other passengers/crew with close prolonged[1] contact while case was not self-isolating or direct contact with infectious body fluids	Full activity restrictions
	• Crew members who do not meet criteria above • Passengers seated more than 2 meters away from the case	Partial activity restrictions
	• Other passengers seated elsewhere in cabin/car as case who do not meet above criteria.	No activity restrictions

[1] As part of the individual risk assessment, consider the duration and nature of the contact's exposure (e.g., a longer exposure time likely increases the risk), the case's symptoms (coughing or severe illness likely increases exposure risk) and whether personal protective equipment (e.g., procedure/surgical mask) was used.
[2] The PHU and/or MEOC works with PHAC's Office of Border Health Services to obtain passenger flight manifests for international flights.

Table 2: Description of recommended activity restrictions and public health monitoring

Activity restriction level	Activity restrictions	Public health monitoring
Full activity restrictions	• Do not attend school or work • Avoid close contact with others, including those within your home,	Daily monitoring for 14 days from last exposure

	as much as possible (see Preventing 2019-nCoV from spreading to others in homes and communities) • Have a supply of procedure/surgical masks available should close contact with others be unavoidable • Postpone elective health care until end of monitoring period • Use a private vehicle. Where a private vehicle is not available, private hired vehicle may be used while wearing a procedure/surgical mask and sitting in the rear passenger seat with the window open (weather permitting). Do not take public transportation. • Remain reachable for daily monitoring by local public health unit • Discuss any travel plans with local public health unit • If symptoms develop, ensure self-isolating immediately, and contact local public health unit and health care provider prior to visiting a health care facility	
Partial activity restrictions	• Avoid congregate settings (including high risk setting such as hospitals, schools), limit public activities, and practice social distancing • Postpone elective health care until end of monitoring period • Use a private vehicle. Where a private vehicle is not available, private hired vehicle may be used while wearing a procedure/surgical mask and sitting in the rear passenger seat with the window open (weather	Public health has initial follow-up with contact and at the end of 14 days, and intermittently in the intervening timing period at the discretion of the health unit based on level of exposure and circumstances of the individual.

	permitting). Do not take public transportation. • Remain reachable for active monitoring by local public health unit • Have a supply of procedure/surgical masks available should close contact with others be unavoidable • Discuss any travel plans with local public health unit • If symptoms develop, ensure self-isolating immediately, and contact local public health unit and health care provider prior to visiting a health care facility	

No activity restrictions	• Self-monitor for fever and respiratory symptoms
	  ○ If symptoms develop, contact local public health unit and health care provider prior to visiting a health care facility
	  ○ Self-isolate immediately if symptoms develop
		Written information provided by public health unit on symptoms, self-monitoring period and what to do if symptomatic

- Contact management may involve collaboration between PHUs and acute care settings:
  - PHUs actively monitor close contacts in the community. This includes close contacts who were exposed in an acute care setting or other health care setting (e.g., primary health care setting, urgent care clinic) but live in the community. The responsibility to actively monitor close contacts that were exposed during their hospital admission (i.e., inpatients) and subsequently discharged prior to completing 14 days should be transferred from the acute care setting to the PHU.
  - Acute care settings actively monitor close contacts who were exposed in the hospital and are currently admitted (i.e., inpatients). This includes patients who were exposed in the emergency department and subsequently admitted. Acute care settings also actively monitor health care workers who were exposed at work. Acute care settings should refer to PIDAC Tools for Preparedness: Triage, Screening and Patient Management for Middle East Respiratory Syndrome Coronavirus (2019-nCoV) Infections in Acute Care Settings for additional information.

Contact follow-up and monitoring

- The period of monitoring is 14 days following last known exposure or until a probable case no longer meets the case definition (e.g., the laboratory investigation has ruled out 2019-nCoV infection).
- The PHU can use the ***Daily Contact Clinical Update Form in*** Appendix 6 to monitor close contacts requiring active daily or intermittent monitoring
- All contacts should be informed of how to contact the PHU if they develop symptoms or have other questions.
    - A contact who becomes ill with any acute respiratory infection symptoms (eg cough) or fever within 14 days following last known exposure to the case should immediately self-isolate and report their symptoms to the PHU. The PHU should facilitate testing for 2019-nCoV and manage the symptomatic contact as a PUI (until laboratory testing results are available. Health care workers should submit samples to PHO following the guidance on the ministry's website on 2019-nCoV. Detailed information on laboratory testing for 2019-nCoV is available at the PHO website.
        - For contacts who were under partial or full activity restrictions that become PUIs, the PHU should initiate contact investigation and management of those PUIs
        -
    - Testing asymptomatic contacts for 2019-nCoV is not recommended at this time. However, in the event that an asymptomatic contact tests positive for 2019-nCoV, the PHU should manage this person as if they were a case (including the initiation of further case and contact management activities). The PHU can remove an asymptomatic case from isolation after two negative respiratory specimens[9] collected 24 hours apart, or after they have completed a 14-day isolation period without any symptoms.

Public health advice for all contacts

- The PHU should advise all contacts to undertake the following activities for 14 days following last known exposure to the case or until the probable case no longer meets the case definition (i.e., the laboratory investigation has ruled out 2019-nCoV infection):
    - All individuals travelling from Hubei province should self-isolate for 14 days and monitor themselves for signs and symptoms.
    - Contacts of cases should go into self-isolation for 14 days after the last exposure to the case. The contact should also self-monitor for signs and symptoms, in addition to the active monitoring conducted by the PHU.
    - Contacts should self-monitor (in addition to active monitoring if being actively monitored) for the appearance of any acute respiratory illness, symptoms of which include acute onset of fever and/ or respiratory

[9] Where feasible, the collection of two respiratory specimens at the time of each testing (e.g. nasopharyngeal plus throat swab is recommended.

symptoms, including measuring their temperature daily (recognizing that young children and the elderly may not develop a fever).
    - Close contacts should maintain good respiratory etiquette and hand hygiene practices.
    - Should symptoms develop, contacts should immediately self-isolate (if not already in self-isolation) and maintain distance from others in the household environment to the extent possible (e.g., stay in separate room or maintain distance of two metres) and make contact with their usual health care provider and the PHU for further advice on getting assessed and tested.
    - PHUs should facilitate testing of the symptomatic contact including ensuring the receiving health services are informed ahead of time.
- The PHU should advise contacts to seek medical attention if symptoms worsen and/ or call 911 if they require emergency care and inform paramedic services or health care provider(s) that they are a close contact of a case.
- The PHU should advise contacts that if they develop symptoms, the PHU will ask them to isolate themselves until laboratory testing has ruled out 2019-nCoV infection – and to isolate themselves for even longer if laboratory testing confirms 2019-nCoV infection (if not already in self-isolation).
- For contacts under partial of full activity restrictions, the PHU should ask about the contact's needs in order to be able to comply with these recommendations. This might include discussion with employers, making alternate arrangements to support children/dependents and ensuring an adequate supply of groceries and other necessities.
- All contacts should also consider these needs if they become symptomatic and need to isolate themselves while testing is pending

Travelers from affected areas

As of February 6, 2020, the Public Health Agency of Canada has advised travelers who have been in Hubei province, China in the past 14 days to limit contact with others, including self-isolation and staying at home, for 14 days from last exposure. Travellers returning from other known affected regions are advised to self-monitor for symptoms and to self-isolate and seek medical attention immediately if symptoms develop.

Any returning travelers who develop symptoms and are being tested should follow self-isolation guidance for PUIs.

Monitoring of travelers

- Individuals who present themselves to the PHU with exposure to **Hubei province** in the past 14 days should follow **full activity restrictions and PHU monitoring** as described in Table 2

- Individuals who present themselves to the PHU with exposure to a known or likely case of 2019-nCoV abroad should follow either partial or full activity restrictions and associated PHU monitoring depending on the risk of exposure to the case, as described in Table 2
- Individuals who have been advised to self-monitor but not self-isolate based on their travel exposure risk and who present to the PHU should follow the **no activity restrictions and no PHU monitoring**, as described in Table 2

Responsibilities

All PHUs:

- Keep updated on the 2019-nCoV case definitions (available on the ministry's Guidance for Health Care Workers and Health Sector Employers on 2019-nCoV website).
- Review the case and contact management guidance in this document.
- Ensure health care workers who may be engaged in case and contact management are aware of appropriate OHS & IPAC measures and have current fit-testing for an N95 respirator, in case specimen collection or aerosol-generating procedures are conducted.

PHUs with a probable, presumptive confirmed or confirmed case within their jurisdiction:

- Submit initial minimum data fields from the SARI Case Report Form to the MEOC[10] as soon as possible in order to facilitate the ministry's reporting to the PHAC (see Reporting to the Public Health Agency of Canada for more information).
- Enter case details in iPHIS as per iPHIS guidance. Conduct contact tracing to identify contacts of the case.
- Monitor the case/PUI on a daily basis for the duration of illness and until virologic testing clearance from isolation or or until laboratory testing has ruled out 2019-nCoV infection.
- Provide information and monitoring of contacts based on their exposure level for 14 days following last known exposure to a case.
- Ensure close contacts of cases[11] are self-isolating for 14 days following the last exposure to the case.
- Ensure local health care workers are aware of appropriate screening, laboratory testing and IPAC & OHS measures.

[10] The MEOC will provide guidance on how to transmit information including the SARI case report forms. Direction about data entry via iPHIS will be provided through regular routes, including iPHIS Bulletins.

[11] This includes: presumptive confirmed cases, confirmed cases, and PUIs who need to be assessed by the local PHU regarding whether or not they should self-isolate, pending test results on the PUI

- Support coordinated provincial communication activities.

PHO:

- Participate in the MEOC's response activities.
- Provide scientific and technical advice to stakeholders in areas such as laboratory testing, case and contact management information, reporting of case information using SARI case report form and data entry in the integrated public health information system (iPHIS), outbreak management recommendations, and advice on clinical management and IPAC & OHS measures.
- Conduct provincial epidemiological surveillance and analyses.
- Provide laboratory testing for 2019-nCoV.

Ministry of Health:

- Coordinate the response to 2019-nCoV in Ontario.
- Coordinate and participate in MEOC's response activities.
- Share information with the public.
- Receive notifications of PUIs.
- Report case details to PHAC.

Additional Resources

- Centers for Disease Control and Prevention's 2019-nCoV website
- European Centre for Disease Prevention and Control's 2019-nCoV website
- Ministry of Health's novel coronavirus website
- Provincial Infectious Diseases Advisory Committee's Tools for Preparedness: Triage, Screening and Patient Management of Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Infections in Acute Care Settings
- Public Health Agency of Canada's Emerging Respiratory Infection website
- World Health Organization's Disease Outbreak News website
- World Health Organization's Global Alert and Response website
- World Health Organization's coronavirus

Appendix 1: Ontario's Severe Acute Respiratory Infection Case Report Form

iPHIS Case ID: _____

CLIENT RECORD

Last name: _____
First name: _____
Usual residential address: _____
_____
City: _____ Province/Territory: _____
Postal code: _____

Responsible Health Unit: _____
Branch office: _____

Diagnosing Health Unit: _____

Phone number(s): (_____) _____ - _____
(_____) _____ - _____

Date of Birth ____/____/_____ (dd/mm/yyyy)

PROXY Information

Is respondent a proxy? (e.g., for deceased patient, child)

☐No ☐ Yes (complete information below)

Last name:
_____
First name:
_____

Relationship to case:
_____

Phone number(s): (_____) _____ -
_____
(_____) _____ -
_____

Contact information for health unit person reporting

Name: _____
Telephone #: ( ) ____-_____
Email: _____

Emerging Pathogens and Severe Acute Respiratory Infection (SARI) Case Report Form

(2) ADMINISTRATIVE INFORMATION

□ Initial Report □ Updated Report	Report Date: ____/____/_____ (dd/mm/yyyy)
Outbreak or cluster related? □ Yes □ No If yes, local Outbreak #:_____ Number of ill persons associated with the outbreak: _____	**For Provincial Use Only** Has the outbreak been declared and made public? □Yes □ No If case is related to a provincial /territorial outbreak, P/T Outbreak ID:_____

(3) CASE DETAILS: DISEASE / AETIOLOGIC AGENT / SUBTYPE

□ Severe Acute Respiratory Infection □ Middle East respiratory syndrome coronavirus (MERS-CoV) □ 2019-nCoV, Wuhan,China □ Other Novel Respiratory Pathogen *Specify:*_____ _____	□ Novel Influenza A □ H1__ □ H3__ □ H5__ □ H7__ □ Other: _____ □ Novel Influenza B _____

(4) CASE DETAILS: CASE CLASSIFICATION *(please refer to Ontario case definitions)*

□ Confirmed □ Presumptive Confirmed □ Probable

(5) CLIENT RECORD: DEMOGRAPHIC INFORMATION

Gender: □ Male □ Female □ Unk □ Other (sp): _____	Age:_____ years *If under 2 years* _____months □ Unk

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

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 □ Unk

(6) SYMPTOMS *(check all that apply)*

Date of onset of first symptom(s): ____/____/_____ (dd/mm/yyyy)

□ Fever (≥38°C)	□ Swollen lymph nodes	□ Shortness of breath/difficulty breathing	□ Nose bleed
□ Feverish (temp. not taken)	□ Sneezing	□ Chest pain	□ Rash
□ Cough	□ Conjunctivitis	□ Anorexia/decreased appetite	□ Seizures
□ Sputum production	□ Otitis	□ Nausea	□ Dizziness
□ Headache	□ Fatigue/prostration	□ Vomiting	□ Other, specify: _____
□ Rhinorrhea/nasal congestion	□ Malaise/chills	□ Diarrhea	□ No Symptoms
□ Sore throat	□ Myalgia/muscle pain	□ Abdominal pain	
	□ Arthralgia/joint pain		

(7) SYMPTOMS, INTERVENTIONS, and OUTCOME

Date of first presentation to medical care: ____/____/_____ (dd/mm/yyyy)

Clinical Evaluations *(check all that apply)*

□ Altered mental status
□ Arrhythmia
□ Clinical or radiological evidence of pneumonia
□ Diagnosed with Acute Respiratory Distress Syndrome
□ Encephalitis
□ Hypotension
□ Meningismus/nuchal rigidity
□ O2 saturation ≤95%
□ Renal Failure
□ Sepsis
□ Tachypnea (accelerated respiratory rate)
□ Other (specify): _____

Case Hospitalized? □ Yes □ No □ Unk
Diagnosis at time of admission: _____
Admission Date: ____/____/_____ (dd/mm/yyyy)
Re Admission Date: ____/____/_____ (dd/mm/yyyy)

Case admitted to Intensive Care Unit (ICU) □ Yes □ No □ Unk
ICU Admission Date: ____/____/_____ (dd/mm/yyyy)
ICU Discharge Date: ____/____/_____ (dd/mm/yyyy)

Patient isolated in hospital? □ Yes □ No □ Unk
If yes, specify type of isolation (e.g., respiratory droplet precaution, negative pressure):_____

Supplemental oxygen therapy □ Yes □ No □ Unk
Mechanical ventilation □ Yes □ No □ Unk
If yes, number of days on ventilation _____

Case Discharged from Hospital □ Yes □ No □ Unk
Discharge Date 1: ____/____/_____ (dd/mm/yyyy)
Case Transferred to another hospital □ Yes □ No □ Unk
Discharge Date 2: ____/____/_____ (dd/mm/yyyy)
Transfer Date: ____/____/_____ (dd/mm/yyyy)

Current Disposition □ Recovered □ Stable □ Deteriorating □ Deceased ____/____/_____ (dd/mm/yyyy)
If deceased, is post-mortem: □ Performed □ Pending □ None □ Unk
Respiratory illness contributed to the cause of death? □ Yes □ No □ Unk
Respiratory illness was the underlying cause of death? □ Yes □ No □ Unk
Cause of death *(as listed on death certificate)*: _____

(8) RISK FACTORS (check all that apply)

□None identified

Cardiac Disease □ Yes □ No □ Unk
If yes, please specify:

Hemoglobinopathy/Anemia □ Yes □ No □ Unk
If yes, please specify:

Hepatic Disease □ Yes □ No □ Unk
If yes, please specify:

Receiving immunosuppressing medications □ Yes □ No □ Unk
If yes, please specify:

Metabolic Disease □ Yes □ No □ Unk
If yes, please specify:

Substance use □ Yes □ No □ Unk
If yes, please specify:

□ Diabetes □ Obese (BMI > 30) □ Other:_____ _____	□ Smoker (current) □ Alcohol abuse □ Injection drug use □ Other:_____ _____
Renal Disease □ Yes □ No □ Unk *If yes, please specify:*	Malignancy □ Yes □ No □ Unk *If yes, please specify:*
Respiratory Disease □ Yes □ No □ Unk *If yes, please specify:* □Asthma □Tuberculosis □Other:_____ _____	Other Chronic Conditions □ Yes □ No □ Unk *If yes, please specify:*
Neurologic Disorder □ Yes □ No □ Unk *If yes, please specify:* □Neuromuscular Disorder □Epilepsy □Other:_____ _____	Pregnancy □ Yes □ No □ Unk *If yes, week of gestation:*_____
Immunodeficiency disease / condition □ Yes □ No □ Unk *If yes, please specify:*	Post-Partum (≤6 weeks) □ Yes □ No □ Unk

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

Did the case receive prescribed prophylaxis prior to symptom onset? □ Yes □ No □ Unk	Specify name:_____ date of first dose*:* ____/____/_____ (dd/mm/yyyy) date of last dose*:* ____/____/_____ (dd/mm/yyyy)
In the treatment of this infection, is the case taking: □ Antiviral medication □ Antibiotic/antifungal medication □ Immunosuppressant/immunomodulating medication □ Unknown □ None □ Other	Specify name (1):_____ date of first dose (1)*:* ____/____/_____ (dd/mm/yyyy) date of last dose (1)*:* ____/____/_____ (dd/mm/yyyy) Specify name (2):_____ date of first dose (2)*:* ____/____/_____ (dd/mm/yyyy) date of last dose (2)*:* ____/____/_____ (dd/mm/yyyy)

(10) INTERVENTIONS: IMMUNIZATIONS

Did the case receive the <u>current</u> year's seasonal influenza vaccine? □ Yes □ No □ Unk □ Vaccine not yet available	*If yes,* date of vaccination: ____/____/_____ (dd/mm/yyyy)

Did the case receive the previous year's seasonal influenza vaccine? □ Yes □ No □ Unk

Did the case receive pneumococcal vaccine in the past? □ Yes □ No □ Unk
If yes, year of most recent dose: ____/____/_____ (dd/mm/yyyy)
If yes, type ☐ polysaccharide or ☐ conjugate: 7 or 13

(11) 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) *(complete if applicable)*

Lab ID	Name of Antimicrobial	Specimen Type & Source	Test Method	Test Result	Test Date

(12) 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 ☐ Unk
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 □ Unk

If yes, please specify the following

Travel Type	Carrier Name	Flight / Carrier #	Seat #	City of Origin	Dates 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 enclosed quarters (e.g., co-worker) or had direct contact with respiratory secretions)* with:

A confirmed case of the same disease? □ Yes □ No □ Unk
If yes, specify the Case ID:_____
A probable case of the same disease?

If yes, specify disease:_____ and specify the Case ID:_____ □ Yes □ No □ Unk

A person who had fever, respiratory symptoms like cough or sore throat, or respiratory illness like pneumonia? □ Yes □ No □ Unk

If yes, specify the type of contact:

□ 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

Where did exposure occur?

□ In a household setting
□ School/daycare
□ Farm
□ Other (please specify)
□ In a health care setting (e.g., hospital, long-term care home, community provider's office)
□ Other institutional setting (dormitory, shelter/group home, prison, etc.)
□ In means of travel (place, train, etc.)

Occupational / Residential

The case is a:

□ Health care worker or health care volunteer

If yes, with direct patient contact? □ Yes □ No □ Unk

□ Resident in an institutional facility *(dormitory, shelter/group home, prison, etc.)*
□ Laboratory worker handling biological specimens
□ Veterinary worker
□ School or daycare worker/ attendee
□ Farm worker
□ Resident of a retirement residence or long-term care facility
□ Other:

Animal

A. Direct Contact ***(touch or handle)***

In the 14 days prior to symptom onset, did the case have <u>direct contact</u> with any animals or animal products *(faeces, bedding/nests, carcass/fresh meat, fur/skins, camel milk, etc.)*? □ Yes □ No □ Unk

If yes, specify date of last direct contact: ____/____/_____ (dd/mm/yyyy)

What type of animals did the case have direct contact with? *(check all that apply)*

□ Cat(s) □ Dogs □ Horses □ Cows □ Poultry □ Sheep / Goat □ Wild Birds □ Rodents □ Swine □ Camel □ Snakes/ reptiles

□Wild game (eg. Deer) □ Bats □ Other:_____

Did the animal display any symptoms of illness or was the animal dead? □ Yes □ No □ Unk

Where did the direct contact occur? *(check all that apply)*

□ Home □ Work *(fill in occupational section)*□ Agricultural fair or event/petting zoo

□ Outdoor work/recreation (camping, hiking, hunting etc.) □ Other:_____

B. Indirect Contact ***(e.g., visit or walk through or work in an area where animals are present, etc.)***

In the 14 days prior to symptom onset, did the case have <u>indirect contact</u> with animals? □ Yes □ No □ Unk

If yes, specify date of last indirect contact: ____/____/_____ (dd/mm/yyyy)

Where did the indirect contact occur? *(check all that apply)*

□ Home □ Work *(fill in occupational section)* □ Agricultural fair or event/petting zoo

□ Outdoor work / recreation (camping, hiking, hunting, etc.)

□ Market where animals, meats and/or animal products are sold

□ Other:_____

(13) ADDITIONAL DETAILS/COMMENTS *(add as necessary)*

Appendix 2: Routine Activities Prompt Worksheet – Case[12]

When interviewing a case, ensure that the following activity prompts are considered to identify a possible source of infection within the 14 days prior to the onset of symptoms: work; school; visitors at home; volunteer activities; daycare; religious activities; social activities (restaurants, shopping); sports; visits to acute care settings, long-term care homes, retirement homes, medical labs, dentists, and other health care providers; contact with ill persons; and contact with birds/swine or other animals.

Date of Onset: _____ (Create an acquisition exposure for each activity)

Case Last Name: _____ Case First Name: _____ Date of Birth: _____ Gender: _____

PHU representative: _____

Date/Time (Start and End)	Activities/Contacts	Location of Activity	Contact Person (Name & Tel)	Comments

[12] Adapted with permission from Toronto Public Health

Date/Time (Start and End)	Activities/Contacts	Location of Activity	Contact Person (Name & Tel)	Comments

Appendix 3: Daily Clinical Update Form – Case Managed in an Acute Care Setting

Case Last Name: _____ Case First Name: _____ Date of Birth: _____ (yy/mm/dd) Gender: _____

Progression	Follow-up Date/Time (YEAR/MM/DD)	Purpose (1)	Admission Date (YEAR/MM/DD)	Discharge Date (YEAR/MM/DD)	Facility Name (Progression Recovery Location) (2)	Facility Type (3)	Class (4)	Progression (Clinical) (5)	Progression					PHU representative
									ICU (Y/N/DK)	Antiviral Drugs (Y/N/DK)	Oxygen Saturation	Temp	On Oxygen (Y/N/DK)	

1) Purpose	(2) Facility Name - Progression Recovery Location	(3) Facility Type	(4) Classification	5) Progression – Clinical		Notes:
C = Convalescing D = Diagnostics I = Isolation T= Treatment	Enter facility name or DK = Don't know	Hosp = Hospital LTC = Long-term care Home = person is at home DK = Don't know	C= Confirmed P = Probable PUI = Person Under Investigation DNM = Does Not Meet case definition	CC = Case Closed. Completed home isolation after discharged from hospital or no longer being followed. D = Deceased DC = Discharged I = Improving	II = Improving (Intubated) S = Stable SI = Stable (Intubated) W = Worsening WI = Worsening (Intubated) EX = Extubated	

Appendix 4: Daily Clinical Update Form – Case Managed in a Household Setting

Case Last Name: _____ Case First Name: _____ Date of Birth: _____ (yy/mm/dd) Gender: _____

PHU representative: _____

Date	Symptoms (please indicate if present ☑ absent ⊗ or resolved (R))									Complications		Specimens/Diagnostics			Treatment/Supportive Therapy	
	No Symptoms	Fever > 38	Cough	Shortness of breath	Diarrhea	Runny nose	Malaise	Chest pain	Other (specify)	Pneumonia	Other (specify)	Nasopharyngeal swab	Chest xray	Other (specify)	Medication	Other (specify)

Appendix 5: Close Contact Tracing Worksheet[13]

When interviewing a case to identify potential close contacts, consider all individuals that could have had exposure since the case was symptomatic. See the Close Contact Tracing section for the definition of a close contact. Use the following activity prompts to help identify potential close contacts: work; school; visitors at home; volunteer activities; daycare; religious activities; social activities (restaurants, shopping); sports; visits to acute care settings, long-term care homes, retirement homes, medical labs, dentists, and other health care providers; contact with ill persons; and contact with birds/swine or other animals.

Date of Onset: _____

Case Last Name: _____ Case first Name: _____ Date of Birth: _____ (yy/mm/dd) Gender: _____

PHU representative: _____

Date/Time (Start and End)	Activities	Location of Activity	Name & contact information of potential close contacts	Comments

[13] Adapted with permission from Toronto Public Health

Date/Time (Start and End)	Activities	Location of Activity	Name & contact information of potential close contacts	Comments

Appendix 6: Close Contact Daily Clinical Update Form

Contact Last Name: _____ Contact First Name: _____ Date of Birth: _____ (yy/mm/dd) Gender: _____

PHU representative: _____

Follow-up Date/Time (YEAR/MM/DD and 24 Hour Clock)	Symptoms? (Y/N)	If yes, please specify (e.g., fever >38; cough, difficulty breathing, headache, fatigue, sore throat, chills, muscle pain, nasal congestion, nausea, vomiting, diarrhea, joint pain, decreased appetite)	Did contact seek medical attention for ARI symptoms? (Y/N)	If yes, please specify where contact went to seek attention (e.g., primary health care, home care, acute care, etc.)

Follow-up Date/Time (YEAR/MM/DD and 24 Hour Clock)	Symptoms? (Y/N)	If yes, please specify (e.g., fever >38; cough, difficulty breathing, headache, fatigue, sore throat, chills, muscle pain, nasal congestion, nausea, vomiting, diarrhea, joint pain, decreased appetite)	Did contact seek medical attention for ARI symptoms? (Y/N)	If yes, please specify where contact went to seek attention (e.g., primary health care, home care, acute care, etc.)

Document History

Revision Date	Document Section	Description of Revisions
January 30 2020		Document was created.
February 5 2020	Contact Management – Public Health Advice	Language included to reflect policy change: self-isolation of 14 days for those returning from Hubei province and for close contacts of cases.