

INTERIM PROTOCOL

PREVENTION AND MANAGEMENT OF SUSPECT OR PROBABLE CASES OF SEVERE ACUTE RESPIRATORY SYNDROME (SARS) ON CRUISE SHIPS

This document has been developed in response to an urgent need for recommendations regarding the follow-up of passengers upon cruise ships when a Severe Acute Respiratory Syndrome (SARS) case is detected in a person who is planning to travel or is travelling by cruise ship. As more information about the cause, communicability, and transmission of this illness becomes available, the recommendations provided in this document may change.

1. Introduction

In response to outbreaks of Severe Acute Respiratory Syndrome (SARS), international and domestic conveyances, including cruise ships, have been asked to report suspect or probable cases of SARS to Canadian Port Authorities. Because of varied travel itineraries of the passengers and crew members, long periods of travel with extensive interaction among passengers and between passengers and crew members, and the densely populated shipboard environment, cruise ships can provide fertile ground for the introduction and spread of communicable diseases. The cruise industry and Health Canada, along with the US Centers for Disease Control and Prevention (CDC), have a shared interest in preventing the introduction of SARS on cruise ships, controlling its spread if inadvertently introduced, and protecting the health of passengers and the crew members who live and work on the ship.

Cases of SARS can be classified as Suspect or Probable; others which are possible cases but do not meet a case definition may be classified as Persons Under Investigation (PUI). The definition of SARS may change as new information becomes available. The current case definition of SARS can be found at <http://www.sars.ca/>. The list of areas in the world affected by SARS may also change over time. Updated information on affected areas can be found on the website for the World Health Organization at <http://www.who.int/csr/sars/en/>. Detailed information on affected sites within Canada can be found in the "Summary of SARS Cases: Canada and International" at <http://www.sars.gc.ca>.

The primary way that SARS appears to spread is by close person-to-person contact. Most cases of SARS have involved people who cared for or lived with someone with SARS, or had direct contact with infectious material (for example, respiratory secretions, body fluids, and/or faeces) from a person who has SARS. Potential ways in which SARS can be spread include touching the skin of persons or objects that are contaminated with infectious droplets and then touching your eye, nose, or mouth. This can happen when someone who is sick with SARS coughs or sneezes droplets onto themselves, other persons, or possibly surfaces. Due to lack of evidence it is controversial whether SARS can be spread through the air and by fomites.

This interim protocol is designed to assist cruise ships' medical staff in developing programs to prevent and manage suspect and probable cases of SARS, and PUIs, on board ships. This document contains three sections: 1) Pre-Departure screening of passengers and crew for suspect or probable cases of SARS; 2) Identification of a suspect or probable case of SARS during the

voyage; and 3) Arrival in Canada of a ship with a suspect or probable case of SARS on board. All material referenced in this document can be found on the Health Canada SARS website at <http://www.sars.gc.ca>. The ships' medical staff should review the content of the documents available on that website, including the documents Public Health Management of SARS Cases and Contacts: Interim Guidelines and Management of Severe Acute Respiratory Syndrome (SARS): Interim Recommendations for Health Care Providers, to become familiar with SARS and the recommended management.

2. Pre-Departure Screening of Passengers and Crew Members

Before boarding the ship, all passengers and crew members should receive a pre-departure SARS screening form (Attachment A). The form reviews travel history to affected areas in the last 10 days, contact with a suspect or probable case of SARS in the last 10 days, and presence of any symptoms consistent with SARS.

The following approach is recommended for pre-departure screening of passengers and crew:

- A. Passengers or crew members without symptoms (i.e., “asymptomatic”) who have travelled to an affected area outside Canada as defined by the WHO or an affected site within Canada should be provided with information about SARS and should be instructed to seek medical attention immediately if they develop any symptoms of SARS within 10 days of being in the location of concern (passive surveillance). These persons should be allowed to board.
- B. Asymptomatic passengers or asymptomatic crew members who have had close contact (see below for definition) with a person meeting the **probable** case definition for SARS should not be allowed to board. Such people should defer their travel, and provincial public health authorities should be informed.
- C. Asymptomatic passengers or asymptomatic crew members who are close contacts of **suspect** cases, because they lived with, cared for, or have a strong suspicion of contact with respiratory secretions from a suspect case, should be instructed to remain in their community and refrain from travel for the 10 day duration of daily active surveillance, as per the Public Health Management of SARS Cases and Contacts: Interim Guidelines (www.sars.gc.ca). Therefore, such people should defer their travel, and provincial public health authorities should be informed. If the asymptomatic person did not live with or care for a suspect case but believes that they had other “close contact” with a suspect case, whether they may board a ship should be reviewed on a case-by-case basis. If they are allowed to board the ship, they should be provided with information and instructions regarding self-monitoring of temperature and for presence of symptoms. They should self-monitor for 10 days from their last contact with the suspect case and should report any symptoms to the medical staff on board. Travelling companions including family members, care providers, and anyone for whom there is a strong suspicion of direct contact with respiratory secretions, body fluids and/or faeces of the case would be included in the highest risk setting. Other Travelling companions, such as members of a tour group, should be reviewed on a case-by-case basis as to their risk of exposure and the appropriate recommendations.

- D.** Passengers and crew with any symptoms (i.e., “symptomatic”) and history of travel to an affected area or contact with a case should be evaluated. Those who meet the suspect or probable case definition should not board. Persons who meet the PUI case definition and have a history of close contact with a probable or suspect case should not be allowed to board.

Persons who meet the PUI definition because they have a history of travel to an affected area outside Canada or to an affected site within Canada should not be able to board unless they have been monitoring their temperature and have been afebrile (without the use of fever-reducing medications) for more than 72 hours. If they have been afebrile for 72 hours, have not developed cough or shortness of breath, and are feeling well enough to travel, they should be allowed to board. If it has not been 10 days since their last exposure to the affected area, they should continue to monitor for SARS symptoms until the 10-day period is over and should be advised to report to medical staff if any symptoms develop.

3. Pre-Departure Medical Management of Symptomatic Passengers and Crew Members

If SARS is suspected infection control measures including airborne, droplet, and contact precautions should be implemented. (For more information consult the Infection Control Guidance fact sheets on the Health Canada SARS website.)

The following approach is recommended for pre-departure medical evaluation and follow-up of passengers and crew:

The medical staff conducting the evaluation should follow the precautions for the protection of Triage Staff described in the document Infection Control Guidance for Health Care Workers in Outpatient Settings available on the website: <http://ww.sars.gc.ca>. When medically evaluating persons for SARS at pre-departure, the following steps should be taken:

- i. Isolate the person with suspect or probable SARS to the extent possible.** Keep him/her away from public areas to minimize contact with other people. Place a mask on the ill person. A surgical mask is sufficient for this purpose. N95 masks, that do not have an exhalation valve, are not necessary but may be used if available and tolerated. As with all infectious illnesses, the first line of defense is careful hand hygiene. Waterless, alcohol-based antiseptic hand rinses are effective for hand hygiene and should be readily available. If there is visible soiling, hands should be washed with soap and water before using waterless antiseptic hand rinses. If soap and water are unavailable, cleanse hands first with detergent-containing towelettes to remove visible soil.
- ii. If the person is thought to have SARS, notify public health officials.** This notification should always include local (municipal and provincial or territorial public health officials), and may include, depending on jurisdiction, federal public health officials. The federal public health authorities may be contacted through the PPHB Duty Officer at 1-800-545-

7661. Ship authorities should ensure that the Health Canada Traveller Contact Information and Health Information forms are distributed as appropriate, depending on who may have had close contact with the person prior to the medical assessment.

iii. Refer the suspect or probable case of SARS to a health care facility. Before the ill person is transported, the health care facility and transporting agency should be alerted to the need for appropriate precautions. It is recommended the Port Authority make these arrangements.

iv. Contact tracing and management. When a case is found during pre-departure screening, contact tracing should be performed in cooperation with the local public health authority. Currently recommended management of close contacts of a case can be found in the Public Health Management of SARS Cases and Contacts: Interim Guidelines (www.sars.gc.ca). Travelling companions should be considered close contacts and screened and managed as per section 2.

“Close contact” is defined as having cared for, lived with, or had face-to-face contact with (within 1 metre), or direct contact with respiratory secretions and/or body fluids, of a suspect or probable case of SARS.

Quarantine practices such as restricting the movement of close contacts, in addition to the isolation of suspect or probable cases of SARS, have varied among public health authorities within and between countries depending on their local situation. The legal and public health recommendations of the jurisdiction in which one is operating should be respected, as public health authorities in some jurisdictions may have recommendations that differ from the interim national recommendations.

4. Identification of a Suspect or Probable Case of SARS During Voyage

It is recommended that passengers or crew who require medical assessment for symptoms consistent with SARS be assessed in their cabins rather than in the infirmary. This is to reduce the exposure of others to any infectious respiratory disease the person in question may have, until the medical assessment is complete. Staff going to the cabin to conduct the assessment should be notified in advance so that they don adequate protection as recommended for Triage staff.

The medical staff conducting the evaluation should follow the precautions for the protection of Triage Staff described in the document Infection Control Guidance for Health Care Workers in Outpatient Settings available on the website: <http://www.sars.gc.ca>. Further, it is recommended that ships consider waiving their medical fees for the assessment of respiratory symptoms, so as not to discourage patients from self-reporting.

A. Isolate the suspect or probable case of SARS to the extent possible. If a suspect or probable case of SARS among passengers or crew members is identified during the voyage, the medical staff should immediately place him or her on infection control measures including airborne, droplet, and contact precautions. (For more information consult the Infection Control Guidance fact sheets on the Health Canada SARS website.) If

a medical respiratory isolation unit is not available on board, the suspect or probable case of SARS should be isolated in a separate cabin or quarters with an independent ventilation system until he or she can be taken off the ship, transported to a health care facility, and placed on airborne precautions.

B. Notify the nearest Port Authority for assistance. As required by law, the captain of the ship should report the illness immediately to the nearest Port Authority, who will notify local, provincial, and/or federal authorities as appropriate. Officials will work with the cruise line and local and provincial health departments to assist with medical transportation of the suspect or probable case of SARS upon arrival, disease prevention and control measures, passenger and crew notification and surveillance activities, and disinfection procedures on board the ship. If the ship's arrival at a Canadian port is not imminent, health authorities will assist ship officials with the management and isolation of the suspect or probable case of SARS and with carrying out the recommendations for other passengers and crew members.

C. Contact tracing and management. Persons who have close contact with the suspect or probable case of SARS while the ship is at sea should be managed according to the Public Health Management section of the Public Health Management of SARS Cases and Contacts document available at <http://www.sars.gc.ca>.

- Symptomatic passengers or crew who are contacts of probable or suspect cases should be managed as per management of probable or suspect cases or PUIs, depending on their symptoms.
- Passengers or crew who are asymptomatic contacts of a **probable** case should be quarantined in their cabins and placed under daily active surveillance for 10 days. Crew members who are quarantined should not be transferred to another ship.
- Asymptomatic travelling companions or asymptomatic crew members who have provided care to a **suspect** case should be placed under daily active surveillance for 10 days, without restrictions on activities as long as they remain asymptomatic. Other “close contacts” should be asked to self monitor for symptoms for 10 days since last contact with the suspect case. Whether crew members who are close contacts of suspect cases may be allowed to go on leave or transfer to another ship should be reviewed on a case-by-case basis.
- Close contacts of a PUI should be provided with educational information.

If there is a probable or suspect case of SARS on board, all passengers and crew should be provided with information on SARS. All passengers should be instructed to seek medical attention promptly if they develop any symptoms of SARS (passive surveillance). Crew members should be provided with information about SARS, and the ship's medical staff may want to consider conducting daily active surveillance on crew members for 10 days. Information for passengers and crew members that can be distributed includes: a letter

notifying passengers about a suspect case of SARS (Attachment B); a Health Canada Health Alert Notice (Attachment C); and general information about SARS (<http://www.sars.gc.ca>).

D. Disinfect materials possibly contaminated with SARS. As soon as the suspect or probable case of SARS vacates his or her cabin or living quarters, the area should be cleaned according to a standardized approach to housekeeping and disinfection. The housekeeping staff should wear masks, preferably N95 or equivalent, gloves, eye protection (goggles or face shield), and disposable gowns while doing the following:

- a) bag and promptly deliver used linen and towels directly to the ship's laundry for immediate washing according to the ship's standard laundry procedure;
- b) wipe down smooth, durable surfaces (for example, desks, doors, walls, floor, windows, and lavatory surfaces) and frequently touched objects (for example, light switches, doorknobs, dresser handles, and faucet handles) with a chemical germicide with virucidal label claims and allow to air dry in accordance with manufacturer's instructions. Sufficient quantity of germicide in the correct concentration applied with a clean cloth are components of an effective cleaning process. Visible soil must be removed prior to disinfection. All cleaning equipment should be disinfected after use. Comply with contact time on label and workplace safety requirements. Personnel who are assigned this responsibility should be trained and supervised in cleaning and disinfection methods. Medical staff should instruct and monitor cleaning staff regarding order of removal of protective equipment to prevent self contamination.
- c) handle ice with proper technique to avoid contamination, so that buckets are not transferred between cabins and are disinfected between groups of passengers;
- d) change gloves if they become soiled or damaged and discard after cleaning is finished;
- e) Hand hygiene should be performed using waterless, alcohol-based antiseptic hand rinses immediately after removing gloves. Special cleaning of durable fabric materials (e.g., upholstery and carpet) is not indicated. Guidelines for the cleaning of commercial aircraft on which a suspect case of SARS was a passenger can be consulted, and is available at <http://www/sars.gc.ca>.

It is important to prevent aerosol generation during housekeeping. Many cruise lines have developed housekeeping procedures for norovirus outbreaks, using 1:10 dilution of household bleach to clean passenger cabins, crew living quarters, and public areas on board the ship. These measures are considered to be effective against SARS. However, fogging devices to discharge aerosolized chlorine should not be used because of possible re-aerosolization of infectious material. Caution is advised in using chlorine with germicidal agents, as this combination may interfere with disinfection capabilities and be an occupational risk. Housekeeping staff should not use a vacuum unless the vacuum has a HEPA filter to clean possible SARS-contaminated rooms and materials, and should not shake out linens and towels. Wet mopping with a disinfectant (hard surfaces) or steam cleaning (carpets) is recommended.

5. Arrival in Canada with a Suspect or Probable Case of SARS among Passenger or Crew.

In the event of a death or ill person on board, the master of a ship destined for a U.S. or Canadian port is required to report the occurrence to the nearest Canadian Port Authority or CDC Quarantine Station. Local health officials will meet the arriving ship. If the suspect or probable case of SARS has not disembarked at a previous port, he or she will be transported to a pre-arranged health-care facility. Health officials will work with the cruise line, port authorities, and local health departments. There will be a courtesy notification system between Health Canada and the CDC, to keep both countries advised of suspect or probable cases of SARS on ships.

6. Additional sources of information

**Health Canada recommendations for infection prevention and control, including routine practices and additional precautions are in *Infection Control Guidelines Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Health Care*.
<http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/ccdr-rmtc/99vol25/25s4/index.html>**

**Health Canada recommendations for hand hygiene, glove use, cleaning and disinfecting equipment, housekeeping, laundry and waste management are in *Infection Control Guidelines Hand Washing, Cleaning, Disinfection and Sterilization in Health Care*.
<http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/ccdr-rmtc/98pdf/cdr24s8e.pdf>**

Health Canada recommendations for the handling of human remains are in *Infection Control Guidance for Handling of Human Remains* on the Health Canada SARS website.