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Update #4: Outbreaks of Severe Acute Respiratory Syndrome (SARS): Information and Recommendations for Health Care Providers

**Please distribute to Emergency Department Staff, Infectious Disease Physicians,
Internists, Pulmonologists, Pediatricians, Family Practice Physicians,
Infection Control Staff, Outpatient Clinic Staff, and Laboratory Directors**

The New York State Department of Health (NYSDOH) is providing this update to hospitals and local health departments to provide current information on the outbreaks of respiratory disease in Asia and Toronto, Canada:

- **New York State has identified twenty-eight NYS residents (New York City – 13, NYS, excluding NYC - 15) who meet the Centers for Disease Control and Prevention (CDC) case definition for SARS. All twenty-eight cases are associated with travel to affected regions and not the result of transmission to healthcare workers or family contacts in New York State.**
- **SARS was designated as a communicable disease by the NYSDOH Commissioner on April 10th, 2003, giving NYSDOH and local health departments the authority utilize methods to protect the public health as delineated in 10 NYCRR Section 2. All patients who meet the suspect SARS case definition should be immediately reported to the local health department.**
- **Toronto, Canada: There has been transmission within specific community settings in Toronto. To date there have been 303 probable or suspect SARS cases, including 13 deaths. Most secondary cases have occurred among household or hospital contacts and have been traced back to the index patient who had traveled to Hong Kong in mid-March. This week, Health Canada, the Ontario Ministry of Health and the Toronto Department of Health reported a new cluster among a religious community in Toronto. To date, there have been at least 30 suspect or probable SARS cases occurring among members of the Bukas-Loob Sa Diyos (BLD) Covenant Community, who attended a large gathering in Toronto on March 28-29, 2003. SARS has caused serious illness among members of the BLD Covenant Community and has spread to members of their households and other close contacts.**

- **Travelers Alert for International Travelers Arriving in the United States from Toronto, Canada:** Travelers returning from Toronto are advised to monitor their health for 10 days. Health care providers should ask a detailed travel history which includes Toronto, Canada in addition to China, including Hong Kong; Singapore; and Hanoi, Vietnam when evaluating a patient with respiratory symptoms and/or fever.
- **Updated CDC SARS Interim Case Definition**
- **Infection control precautions for healthcare facilities across the healthcare continuum**

I. REPORTING SUSPECT SARS CASES

Effective April 10, 2003, on an emergency basis, SARS was added to the reportable disease list (Section 2.1 of the New York State Sanitary Code). Physicians should immediately report any suspect cases to the local health department. **If there are difficulties reaching your local health department, please contact the NYSDOH. During business hours, call 518-473-4436; after hours, call 1-866-881-2809. In New York City, call the Bureau of Communicable Disease at 1-212-788-9830; after hours, call the Poison Control Center at 1-212-764-7667 or 1-800-222-1222.**

The CDC has developed the following case definition for severe acute respiratory syndrome (SARS) **(updated 4/18/03):**

A person with onset of illness after February 1, 2003 with:

- (a) measured high fever ($> 100.4^{\circ}\text{F} / 38^{\circ}\text{C}$ oral temperature) AND
- (b) one or more clinical findings of respiratory illness (*e.g.* cough, shortness of breath, difficulty breathing, hypoxia, or radiographic findings of either pneumonia or acute respiratory distress syndrome) AND
- (c) either
 - recent travel* to areas with suspected or documented community transmission of SARS (including Mainland China and Hong Kong Special Administrative Region; Hanoi, Vietnam; Singapore and **Toronto, Canada**) within 10 days of symptom onset.
 - OR
 - Close contact **within 10 days of onset of symptoms with a person who is known to be a suspect SARS case (**Revision**).

*Travel includes transit in an airport in an area with documented or suspected community transmission of SARS (**New addition to case definition**).

** Close contact includes having cared for, having lived with, or having had direct contact with respiratory secretions and/or body fluids of a person known to be a suspected SARS case.

II. GUIDANCE FOR INFECTION CONTROL FOR SUSPECTED SARS CASES

□ **For the Outpatient Setting:** Patients calling for an appointment to be seen for a respiratory illness should be screened for SARS by eliciting a travel history or any known exposure to a SARS case. Any patients with respiratory symptoms that have had travel to affected areas (i.e., mainland China and Hong Kong; Hanoi, Vietnam; Singapore; and Toronto, Canada) or an exposure to a known or suspect SARS case within 10 days of onset should be considered for SARS in their differential diagnosis. Their appointment should be scheduled at the end of the day to minimize exposures.

Masks, gloves and eye protection should be readily available for triaging personnel. Upon presentation to the outpatient or ambulatory setting, patients with respiratory symptoms, which include influenza-like symptoms such as fever, myalgias, headache, sore throat, dry cough, shortness of breath, or difficulty breathing should immediately be given a surgical mask and be screened for SARS. The healthcare worker triaging the patient should wear respiratory protection and other personal protective equipment as needed to prevent an exposure when completing screening of the patient for a SARS travel/exposure history, particularly if the patient cannot tolerate a surgical mask. An N-95 respirator is the preferred mask, but a surgical mask can be worn if the clinic does not have access to N-95 respirators.

Ill patients identified with a history of recent travel to affected areas or contact with a known or suspected SARS case should immediately be isolated in an airborne infection isolation room or, if one is not available, in a private room with a closed door. All healthcare personnel should wear an N-95 respirator (a surgical mask may be worn only if an N-95 respirator is not available), gloves, gowns and eye protection with all contact with suspect SARS cases to prevent exposure. Hand hygiene (use of an alcohol-based waterless hand cleanser or washing hands with soap and water for 15 seconds) must be performed before donning and after removal of personal protective equipment. Patient care equipment should be dedicated or disinfected before use on another patient.

The ambulatory clinic should immediately notify the local health department of the suspect SARS case.

□ **For the Emergency Department:** Personal protective equipment (masks, gloves and eye protection) should be readily available for triaging personnel. All patients who present to the emergency department with respiratory symptoms, which include influenza-like symptoms such as fever, myalgias, headache, dry cough, shortness of breath, or difficulty breathing should immediately be given a surgical mask and be screened for SARS. The triaging personnel should don a mask, and other personal protective equipment as needed, to prevent exposure while completing the screening of the patient for SARS, particularly if the patient cannot tolerate a mask. An N-95 respirator or higher is the preferred mask, but a surgical mask can be worn if the Emergency Department does not have access to N-95 respirators. Any patients with respiratory symptoms that have had travel to affected areas (i.e., mainland China and Hong Kong; Hanoi, Vietnam; Singapore; and Toronto, Canada) or an exposure to a known or suspect SARS case within 10 days of onset should be considered for SARS in their differential diagnosis. The patient should be immediately placed in an airborne isolation room (or private room with the door closed, if not available) and be placed on the following precautions to prevent exposures:

- **Standard Precautions:** Includes the use of personal protective equipment for all patient contact to prevent an exposure to blood, skin, mucous membranes, and clothing. We additionally recommend the use of eye protection for all direct patient contact with a suspect SARS case. Hand hygiene

(use of an alcohol-based waterless hand cleanser or washing hands with soap and water for 15 seconds) must be performed before donning gloves and after removing personal protective equipment.

- Contact Precautions: Includes the use of gown and gloves for all contact with the patient and the patient's environment. Equipment should be dedicated or disinfected after each use.
- Airborne Precautions: Includes isolating the patient in a room with negative pressure relative to the surrounding area and use of an N-95 filtering disposable respirator or powered air purified respirator (PAPR)* for persons entering the room. Where possible, a qualitative fit test should be conducted for N-95 respirators; detailed information on fit testing can be accessed at: <http://www.osha.gov/SLTC/etools/respiratory/oshfiles/fittesting1.html>. Airborne isolation rooms should be smoke tested prior to usage and daily when in use to validate they are working properly.

* If N-95 respirators or PAPRs are not available, a surgical mask should be worn. Every effort should be made to have N-95 respirators available.

The Infection Control Practitioner of the facility should be notified immediately if a suspect SARS case is in the Emergency Department. The Infection Control Practitioner should notify the Local Health Department.

□ **For the Inpatient Setting:** If a suspect SARS patient is admitted to the hospital, infection control personnel should be notified immediately. Infection control measures for inpatients should include (<http://www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm>): Airborne Precautions, including negative pressure isolation rooms, should be used whenever possible. If this is not possible, patients should be placed in a private room with a closed door, and all persons entering the room should wear N-95 respirators or PAPRs. **Regardless of the availability of facilities for Airborne Precautions, Standard and Contact Precautions should be implemented for all suspected SARS patients, as outlined above.**

□ **For Aerosol-generating Procedures:** CDC has received anecdotal reports that aerosol-generating procedures may have facilitated transmission of the etiologic agent of SARS in some cases. Procedures that induce coughing can increase the likelihood of droplet nuclei being expelled into the air. These potentially aerosol-generating procedures include aerosolized medication treatments (e.g., albuterol), diagnostic sputum induction, bronchoscopy, airway suctioning, and endotracheal intubation. For this reason, healthcare personnel should ensure that patients have been evaluated for SARS before initiation of aerosol-generating procedures. Evaluation for SARS should be based on the most recent case definition available for SARS. Aerosol-inducing procedures should be performed on patients who may have SARS only when such procedures are deemed medically necessary. These procedures should be performed using airborne precautions as previously described for other infectious agents, such as *Mycobacterium tuberculosis*; (See CDC's Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Facilities). In summary, healthcare personnel should apply Standard, (e.g., hand hygiene and eyewear), Airborne (e.g., respiratory protective devices with a filter efficiency of greater than or equal to 95%), and Contact (e.g., gloves and gown) Precautions when aerosol-generating procedures are being performed on patients who may have SARS.

III. ENVIRONMENTAL GUIDANCE FOR SARS IN THE HEALTHCARE SETTING (INCLUDING CLINIC, AMBULATORY, AND HOSPITAL SETTINGS)

Suspect SARS cases will be placed in airborne isolation room. The airborne isolation room should be smoke tested before usage and daily when in use to validate it is working properly. If the facility does not have an airborne isolation room, a room with physical barriers and a door should be used. The door should remain closed while the patient is in the room. The patient should be given a surgical mask in the room, and should remain masked while in the facility, if they can physically tolerate it.

□ After the patient leaves the room, the door should remain closed to new patients for the following time in minutes to achieve a removal efficiency of 99% (*Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Facilities*. MMWR/October 28,1994/Vol.43/No. RR-13) :

- For 1-2 air changes per hour (ACH): 138 minutes;*
- For 6 ACH: 46 minutes;**
- For 12 ACH: 23 minutes***

* Usual ACH for regular rooms.

** Most older constructed Airborne Isolation Rooms.

***Newer constructed Airborne Isolation Rooms.

Housekeeping staff who are fit-tested for proper respiratory equipment (e.g. N-95 mask) may enter the room in the interim for cleaning. If the staff are not fit-tested, they must wait the designated time until cleaning of the room can be performed.

□ Cleaning: Gloves are to be worn for all cleaning of the environment in the room where a suspect SARS case was seen. Frequently touched surfaces in the examining room (exam table, counter tops, any non-critical equipment used, such as blood pressure cuffs) should be wiped down with an Environmental Protection Agency (EPA)-registered low - or intermediate – level disinfectant and allowed to dry as per manufacturer's instructions. Examples of acceptable disinfectants are:

- A 1:10 dilution of bleach (5.25% sodium hypochlorite) prepared fresh for use daily;
- Phenolics;
- Quaternary ammonium compounds.

After cleaning is performed, gloves are to be removed, and hand hygiene must be performed.

IV. EXPOSURES TO A SARS CASE

□ **NYSDOH Interim Exposure Definitions for SARS:** Exposure criteria for SARS cannot be determined with certainty until more information about the etiologic agent and the epidemiology of the disease is known. These definitions were based on what is known about the transmission of airborne and contact organisms.

- **Period of Communicability:** Based on limited available information, the assumed period of communicability is believed to be the first onset of any symptoms until ten (10) days after fever

resolves and respiratory symptoms are improving. Symptoms include fever of $>100.4^{\circ}\text{F}$, cough, muscle aches, malaise, chills, and shortness of breath. Those people who wear approved personal protective equipment (e.g., N-95 respirator, eye protection, gowns and gloves) as per the Centers for Disease Control and Prevention (CDC) recommendations would not meet exposure definitions.

- **Intimate/Household Exposure:** An intimate or household exposure is any contact who shares living space with a known SARS patient or has had intimate contact with a known SARS patient during the period of communicability. This includes having direct contact with respiratory secretions and/or bodily fluids (e.g., kissing, close hugging, sexual activity, sharing of utensils or water bottles, etc.). Follow-up is needed.
- **Close Contact Exposure:** A close contact exposure is face-to-face contact or being in an enclosed space for ≥ 30 minutes in close proximity to a known SARS patient during the period of communicability. Examples of close contact would be close conversation, physical examination, contact sports (e.g. wrestling, football). Follow-up is needed.
- **Casual Contact Exposure:** A casual contact exposure is non face-to-face contact or a minimal/indirect exposure or passing by in an enclosed space (e.g., walking by or sitting across the waiting room or office setting for a brief period of time). No follow-up is needed for a casual contact exposure.

□ **General Guidance for Exposed Persons:**

- All exposed persons should:
 - Be provided a copy of:
 - For Household Contacts: the *NYSDOH Instructions for Household Contacts of Persons with Suspect Severe Acute Respiratory Syndrome (SARS)*.
 - Other Contacts: *the NYSDOH Severe Acute Respiratory Syndrome (SARS) Contact Daily Temperature Log*.
 - Monitor their temperature twice a day.
 - Be contacted daily by the local health department to:
 - Ensure temperature is being monitored by contacts;
 - Quickly identify any possible SARS transmission;
 - Ensure appropriate infection control measures are implemented should the contact become symptomatic.
- If there are no fever or respiratory symptoms, there are no restrictions.
- If the contact develops an elevated temperature (greater than 100.4°F orally) or respiratory symptoms, (s)he should notify his/her healthcare provider that (s)he has been exposed to SARS and put on a surgical mask before leaving the house.
- If the clinical illness does not meet the SARS case definition (fever and respiratory symptoms), the contact should limit interactions outside of the home and not go to work, school, out-of-home child care, or other public areas until 72 hours after onset of symptoms.
- If the clinical illness progresses to meet the SARS case definition within 72 hours, then the person should be considered a SARS case and managed appropriately (See *NYSDOH Patient Discharge Instructions for Suspect Severe Acute Respiratory Syndrome (SARS)*).
- If the illness does not progress within 72 hours to meet the SARS case definition, no restrictions are required.

□ **SARS Exposure in the Healthcare Setting:** Exposure is defined as a health care worker who came into direct or close contact with someone who has SARS while not wearing approved personal protective equipment (N-95 respirator, gown, gloves, eye protection). All identified exposed persons should be given the *NYSDOH Instructions For Health Care Workers with Unprotected Exposure to Patients with Suspect Severe Acute Respiratory Syndrome (SARS)* (please see last page of document). All exposed persons should be reported to the local health department.

Exclusion of duty is not recommended for an exposed healthcare worker if they do not have either fever or respiratory symptoms.

Persons exposed must:

- Monitor his/her temperature twice a day for 10 days. The local health department will follow.
- Report to the facility-designated person daily (when at work) his/her temperature and any symptoms that develop.
- If the healthcare worker develops an elevated temperature (greater than 100.4°F orally) or respiratory symptoms, the healthcare worker should not report for duty, but should stay at home and report symptoms to the appropriate facility point of contact immediately and notify their healthcare provider.
- If the healthcare worker develops a fever or respiratory symptoms during work, they should put on a surgical mask and be excluded from work immediately. They should report to the facility-designated person for an evaluation and notify their healthcare provider.
- If the clinical illness does not meet the SARS case definition, the contact should limit interactions outside of the home and not go to work, school, out-of-home child care, or other public areas:
 - If the illness does not progress within 72 hours to meet the SARS case definition, the healthcare worker may be allowed to return to work after consultation with infection control, occupational health, and the local health department.
 - If the clinical illness progresses to meet the SARS case definition within 72 hours, then the person should be considered a SARS case and managed appropriately (See *NYSDOH Patient Discharge Instructions for Suspect Severe Acute Respiratory Syndrome (SARS)*).
- Healthcare workers who meet or progress to meet the case definition for suspected SARS should be excluded from work until 10 days after the resolution of fever, provided respiratory symptoms are absent or improving.

V. Additional Information

For additional information on this evolving outbreak, please check the following sites:

Centers for Disease Control and Prevention: <http://www.cdc.gov/ncidod/sars/>

World Health Organization <http://www.who.int/en/>

Updates on this outbreak, as well as the CDC and WHO alerts, will be posted on the NYSDOH's Health Alert Network (HAN): <https://commerce.health.state.ny.us/hpn>

Reference on infection control precautions:

Garner JS, Hospital Infection Control Practices Advisory Committee. Guideline for isolation precautions in hospitals. *Infect Control Hosp Epidemiol* 1996;17:53-80, and *Am J Infect Control* 1996;24:24-52. <http://www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm>

Information in this alert was adapted from the CDC's Interim Domestic Guidance for Management of Exposures to Severe Acute Respiratory Syndrome (SARS) for Healthcare and Other Institutional Settings, April 12, 2003; Health Alerts Updated Interim US Case Definition of Severe Acute Respiratory Syndrome, April 10, 2003; Interim Domestic Guidelines for the Management of Exposures to SARS for Healthcare and Other Institutional Settings, March 27, 2003; Triage of Patients Who May Have SARS: Interim Guidance for Screening in Ambulatory Settings, March 25, 2003; Infection Control Precautions for Aerosol-Generating Procedures on Patients who have Suspected SARS, March 20, 2003.