

December 29, 2003

**RE: SEVERE ACUTE RESPIRATORY SYNDROME (SARS) PREPARATION**

Although the global outbreak of Severe Acute Respiratory Syndrome (SARS) was contained in July 2003, SARS could return. In this letter we have highlighted key information about SARS protection for your staff and encourage you to review more thorough SARS infection control information on the Centers for Disease Control and Prevention (CDC) website to be prepared if SARS emerges in Minnesota. The information is also relevant to prevent disease transmission of other respiratory diseases such as influenza and respiratory syncytial virus (RSV).

**Background**

According to the World Health Organization, during 2003 a total of 8,098 people became infected with SARS and 774 died. In the U.S., there were 192 suspect SARS cases. The overall case fatality rate was about 9%. There were no SARS-related fatalities in the U.S. SARS is now a reportable disease and efforts to track SARS in Minnesota are being conducted by the Minnesota Department of Health (MDH).

Symptoms of SARS are similar to those of other viral respiratory illnesses, but may become more severe and lead to respiratory failure in a small percentage of cases. Use the following criteria developed by the CDC to evaluate a possible SARS patient:

**Criteria for the Evaluation of a Possible SARS Patient**

**1. In the absence of known SARS activity worldwide**, use the following criteria to screen patients with a severe respiratory illness. For anyone meeting the criteria, Droplet Precautions (i.e. surgical mask) should be implemented:

- In the 10 days before illness onset, travel to or close contact with other ill persons who recently traveled to mainland China, Taiwan, or Hong Kong, **OR**
- Employment as a healthcare worker with direct patient contact or worker in a laboratory with live SARS virus, **OR**
- Part of a cluster of cases of atypical pneumonia without an alternative diagnosis

**2. If a case(s) of suspect SARS is reported in the world**, continue screening as above and consider anyone meeting the following criteria to be a possible SARS case (and institute Airborne and Contact Precautions in addition to Standard Precautions):

- Fever of  $\geq 100.5^{\circ}$  F ( $>38^{\circ}$ C)
- One or more respiratory illness symptoms: cough, shortness of breath, difficulty breathing, or hypoxia, **AND**
- Travel (including transit in an airport) within 10 days of onset of symptoms to an area with documented or suspected community transmission of SARS (countries/cities named if case[s] is reported), **OR**
- History of close contact with another person who may have had SARS within 10 days of onset of symptoms. A “close contact” includes having cared for, lived with, or had direct contact with a person with possible SARS.

If a patient meets the criteria above, notify the receiving hospital immediately to ensure that they are prepared to receive the patient.

### **Infection Control Precautions**

If SARS cases are present in the world and if your staff has contact with a patient who fits the above criteria, it is critical to institute appropriate infection control precautions. These precautions include placing a surgical mask on the patient and implementing Airborne and Contact Precautions plus eye protection (e.g., NIOSH approved N-95 respirator, eye protection such as goggles, gowns, gloves, and hand hygiene), in addition to Standard Precautions. N-95 respirators must be fit-tested for each employee. If N-95 respirators or powered air purifying respirators (PAPRs) are not available, surgical masks may be substituted, but they provide a much lower level of protection.

The virus that causes SARS, a coronavirus, is thought to spread primarily by contact and droplet routes, although the possibility of airborne transmission cannot be ruled out. Coronaviruses may live on surfaces up to 24 hours; SARS may be transmitted if residual infectious particles on environmental surfaces are brought into direct contact with the eyes, nose or mouth, e.g., by contaminated hands. Hand hygiene is of primary importance. Hands should be cleaned with antimicrobial soap and water or with an alcohol-based handrub (if hands are not visibly soiled). Contact contamination can occur during removal of masks and gowns; knowledge of proper don/doff procedures is essential (the CDC will soon post SARS don/doff information on the SARS website).

### **Aerosol-generating Procedures**

During the SARS outbreak earlier this year, some healthcare workers who were present during aerosol-generating procedures performed on patients with SARS became infected with SARS, suggesting that these procedures (i.e., suctioning, intubation, nebulizers, BiPAP/CPAP) may increase the risk of SARS transmission. Therefore, aerosol-generating procedures should be avoided during prehospital care, unless medically essential. The CDC is recommending that healthcare providers review their strategies to protect healthcare workers during these procedures, including the use of personal protective equipment (PPE) and safe work practices, and to alert healthcare workers performing such procedures that there may be an increased risk for transmission of SARS.

**Ambulance Decontamination**

Following ambulance transport of a possible SARS case, the interior surfaces of the patient care area should be wiped down with standard disinfectant solution. Personnel decontaminating the ambulance must use the same PPE as those doing patient care. Patient care equipment such as pulse oximeters, blood pressure cuff, etc., should be cleaned and disinfected.

**Influenza Update**

On a related note, as it is influenza season, consider reviewing infection control procedures with your staff in order to best protect them when they are transporting patients with viral respiratory diseases. Influenza kills an average of 36,000 people in the U.S. every year. Use appropriate infection control precautions even if a patient has been vaccinated against influenza. In cases of respiratory infection, unless the etiology would dictate alternative precautions, Droplet Precautions should be followed.

We appreciate your time in assuring that your employees and patients receive appropriate instructions and accurate information concerning SARS. For more information, please visit the MNSTAR knowledge base or contact Aarron Reinert at 612-617-2682 or 800-747-2011 or MDH at 612-676-5414 or 877-676-5414. A copy of this letter is available electronically on the EMSRB website at [www.emsrb.state.mn.us](http://www.emsrb.state.mn.us).

Sincerely,



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cc: Ambulance Medical Directors  
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Training Program Coordinators  
Regional Program Directors  
Medical Direction Standing Advisory Committee  
EMS Regulatory Board  
EMS Regulatory Board Staff

# INFECTION CONTROL PRECAUTIONS

## STANDARD

- Hand hygiene\* critical
- Gloves for blood and other body fluids, mucous membranes and non-intact skin
- Masks, eye protection, face shields and gowns if splashes of blood or body fluids likely

## DROPLET

- Surgical mask (if within 3 feet of patient)

## CONTACT

- Gloves and gowns

## AIRBORNE

- N-95 respirators or powered air purifying respirators (PAPRs)
- Eye protection for SARS can include goggles or face mask; tight fitting goggles should be used in the setting of an aerosol generating procedure
- In hospitals, airborne infection isolation room [AIIR], exhaust outside or through HEPA filtration

\*Alcohol-based handrubs are the leading recommended tool for hand hygiene in CDC's 2002 Guideline for Hand Hygiene in Healthcare Settings"

[www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm](http://www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm)

## **Website References (SARS information is subject to change at any time)**

Infection Control Precautions:

[www.cdc.gov/ncidod/sars/ic.htm](http://www.cdc.gov/ncidod/sars/ic.htm)

[www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm](http://www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm)

Infection Control Precautions for Aerosol Generating Procedures:

[www.cdc.gov/ncidod/sars/aerosolinfectioncontrol.htm](http://www.cdc.gov/ncidod/sars/aerosolinfectioncontrol.htm)

Interim Guidance for Ground Emergency Medical Transport for SARS patients  
(includes transport decontamination recommendations):

[www.cdc.gov/ncidod/sars/emtguidance.htm](http://www.cdc.gov/ncidod/sars/emtguidance.htm)

Hand Hygiene:

[www.cdc.gov/handhygiene](http://www.cdc.gov/handhygiene)

Respirator Fit Testing:

[www.osha.gov/SLTC/etools/respiratory/oshfiles/fittesting1.html](http://www.osha.gov/SLTC/etools/respiratory/oshfiles/fittesting1.html)

General SARS information:

- World Health Organization: [www.who.int/en/](http://www.who.int/en/)
- CDC : [www.cdc.gov/ncidod/sars/index.htm](http://www.cdc.gov/ncidod/sars/index.htm)
- MDH: [www.health.state.mn.us/divs/idepc/diseases/sars/index.html](http://www.health.state.mn.us/divs/idepc/diseases/sars/index.html)