



## SEVERE ACUTE RESPIRATORY SYNDROME

# NOTICE

Since 2004, there have not been any known cases of SARS reported anywhere in the world. The content in this PDF was developed for the 2003 SARS epidemic. But, some guidelines are still being used. Any new SARS updates will be posted on this Web site.



## Supplement I: Infection Control in Healthcare, Home, and Community Settings

### IV. Infection Control for Prehospital Emergency Medical Services (EMS)

Effective communication among clinicians requesting emergency transport of a patient with possible or known SARS-CoV disease, EMS personnel, and receiving facilities is necessary to ensure the appropriate protection of healthcare workers. Prehospital care personnel should follow the updated Standard Precautions recommendations to prevent the spread of respiratory infections described in III.B above. These include promoting respiratory hygiene/cough etiquette ([www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm](http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm)) and using Droplet Precautions ([www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm](http://www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm)), in addition to Standard Precautions, for all patients with symptoms of a respiratory infection. When SARS is suspected in a patient needing emergency transport, ***prehospital care providers and healthcare facilities should be notified in advance that they may be transporting or receiving a patient who may have SARS-CoV disease.***

#### A. Patient Transport

**Objective:** Safely transport patients with known or possible SARS-CoV disease.

##### Activities

Patients who may have SARS-CoV disease may be safely transported in any emergency vehicle with the proper precautions.

- Involve the fewest EMS personnel required to minimize possible exposures.
- Family members and other contacts of SARS patients should not ride in the ambulance if possible. If necessary, they should be evaluated for fever and lower respiratory symptoms and, if either is present, asked to wear a surgical or procedure mask when riding in the vehicle.
- When possible, use vehicles that have separate driver and patient compartments that can provide separate ventilation to each area. Close the door/window between these compartments before bringing the patient on board. Set the vehicle's ventilation system to the non-recirculating mode to maximize the volume of outside air brought into the vehicle. If the vehicle has a rear exhaust fan, use it to draw air away from the cab, toward the patient-care area, and out the back end of the vehicle. Some vehicles are equipped with a supplemental recirculating ventilation unit that passes air through HEPA filters before returning it to the vehicle. Such a unit can be used to increase the number of ACH (NIOSH HETA report 95-0031-2601 [[www.cdc.gov/niosh/hhe/reports/pdfs/1995-0031-2601.pdf](http://www.cdc.gov/niosh/hhe/reports/pdfs/1995-0031-2601.pdf)]).
- If a vehicle without separate compartments and ventilation must be used, open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to the highest setting. This will create a negative pressure gradient in the patient area.

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- If possible, place a surgical mask on the patient to contain droplets expelled during coughing. If this is not possible (i.e., would further compromise respiratory status, difficult for the patient to wear), have the patient cover the mouth/nose with tissue when coughing.
- Oxygen delivery with a non-rebreather face mask may be used to provide oxygen support during transport. If needed, positive-pressure ventilation should be performed using a resuscitation bag-valve mask, preferably one equipped to provide HEPA or equivalent filtration of expired air.
- If a patient has been mechanically ventilated before transport, HEPA or equivalent filtration of airflow exhaust should be available. (EMS organizations should consult their ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive-pressure ventilation.)
- Cough-generating procedures (e.g., mechanical ventilation, nebulizer treatment) should be avoided during prehospital care.

### **B. Personal Protective Equipment**

**Objective:** Ensure the safety of prehospital care providers who transport patients with known or possible SARS-CoV disease.

#### **Activities**

- Prehospital care providers who directly handle a patient with SARS-CoV disease or who are in the compartment with the patient should wear PPE as recommended for Standard, Contact, and All Precautions. These include the following:
  - Disposable isolation gown, pair of disposable patient examination gloves, eye protection (i.e., goggles or face shield).
  - Respiratory protection (i.e., N-95 or higher-level respirator)
- Personnel in the driver's compartment who will have no direct patient contact should wear an N-95 or higher-level respirator during transport. Drivers who also provide direct patient care (e.g., moving patients on stretchers) should wear the recommended PPE for patient contact. This PPE, with the exception of the respirator, should be removed and hand hygiene performed after completing patient care and before entering driver's compartment to avoid contaminating the compartment. Instructions on how to safely don, use, and remove PPE is being developed and will be provided when available on CDC's SARS website: [www.cdc.gov/ncidod/sars/](http://www.cdc.gov/ncidod/sars/).

### **C. Safe Work Practices**

**Objective:** Ensure safe work practices among EMS personnel to prevent transmission of SARS-CoV.

#### **Activities**

- Avoid touching one's face with contaminated gloves.
- Avoid unnecessary touching of surfaces in the ambulance vehicle.
- Arrange for the receiving facility staff to meet the patient at the ambulance door to limit the need for EMS personnel to enter the emergency department in contaminated PPE. (It may not be practical to change PPE before patient transfer into the facility.) Remove and discard PPE

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after transferring the patient at the receiving facility and perform hand hygiene. Treat used disposable PPE as medical waste.

### ***D. Clinical Specimens***

**Objective:** Safely collect clinical specimens from SARS patients during transport.

#### **Activities**

- Handle clinical specimens that must be collected during transport (e.g., blood gas) in accordance with standard operating procedures.

### ***E. Post-Transport Management of the Contaminated Vehicle***

**Objective:** Safely clean vehicles used for transport of SARS patients to prevent SARS-CoV transmission.

#### **Activities**

- Follow standard operating procedures for the containment and disposal of regulated medical waste.
- Follow standard operating procedures for containing and reprocessing used linen. Wear appropriate PPE when removing soiled linen from the vehicle. Avoid shaking the linen.
- Clean and disinfect the vehicle in accordance with standard operating procedures. Personnel performing the cleaning should wear a disposable gown and gloves (a respirator should not be needed) during the clean-up process; the PPE should be discarded after use. All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g., stretcher, rails, control panels, floors, walls, work surfaces) should be thoroughly cleaned and disinfected using an EPA-registered hospital disinfectant in accordance with manufacturer's recommendations.
- Clean and disinfect reusable patient-care equipment according to manufacturer's instructions.

### ***F. Follow-up of EMS Personnel***

**Objective:** Ensure appropriate follow-up and care of EMS personnel who transport SARS patients.

#### **Activities**

- Manage EMS personnel who transport SARS patients as recommended for hospital personnel (see Section IX).

For more information, visit [www.cdc.gov/ncidod/sars](http://www.cdc.gov/ncidod/sars) or call the CDC public response hotline at (888) 246-2675 (English), (888) 246-2857 (Español), or (866) 874-2646 (TTY)