

County of Riverside

Community Health Agency
Department of Public Health

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Supplemental Clinical Guidance

Severe Acute Respiratory Syndrome (SARS)

Q & A Document for Hospital and Healthcare Providers

County of Riverside Community Health Agency

Department of Public Health

Adapted from California Department of Health Services (CDHS)

April 10, 2003

What is Severe Acute Respiratory Syndrome or SARS?

SARS is an illness of currently unknown etiology that presents with influenza-like symptoms including fever, myalgias, headache, sore throat, non-productive cough, and sometimes pneumonia by chest x-ray. Some patients with SARS (currently estimated at 10-20%) have developed more severe signs and symptoms, such as shortness of breath, hypoxia, and respiratory distress requiring intubation and mechanical ventilation. Thrombocytopenia and leukopenia have also been reported. To date, there is no evidence linking avian influenza (H5N1) to SARS. However, information to date suggests that coronaviruses and/or the paramyxoviridae family of viruses may be the cause of SARS.

How is SARS defined?

Clinicians should be alert for persons with respiratory illness of unknown etiology with onset since February 1, 2003. The Centers for Disease Control and Prevention (CDC) are currently defining a **Suspect Case** as:

- Fever $\geq 100.5^{\circ}$ F ($>38^{\circ}$ C)

AND

- 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

One or more of the following:

- History of travel to Hong Kong or Guangdong Province in People's Republic of China, Hanoi, Vietnam; or Thailand, within 7 days of symptoms onset.

OR

- Close contact* with persons with respiratory illness having the above travel history.

* Close contact is defined as having cared for, having lived with, or having direct contact with respiratory secretions and/or body fluids of a patient known to be suspect SARS case.

OR

- A person with an unexplained respiratory illness resulting in death who traveled recently to Hong Kong or Guangdong Province in People's Republic of China,

OR

- Hanoi, Vietnam (with autopsy examination demonstrating the pathology of respiratory distress syndrome without another clear etiology).

Note: Suspect cases with either radiographic evidence of pneumonia or respiratory distress syndrome; or evidence of unexplained respiratory distress syndrome by autopsy are designated “probable” cases by the World Health Organization (WHO) case definition.

What is the incubation period for SARS?

Although information on the clinical course of SARS is rapidly evolving, it is presently believed that the incubation period averages 2-7 days.

How many cases of SARS have been reported?

SARS was first recognized on February 26, 2003 in Hanoi, Vietnam. According to WHO, as of April 8, 2003, 2,671 cases of SARS had been reported.

As of April 4, 2003, the SARS case count in California is 36, involving 17 counties. There have been no deaths. Locally, in Riverside County, there is one suspect case and one case under investigation.

Can SARS be fatal?

As of April 8, 2003, 103 deaths have been associated with SARS.

Who is at risk for SARS?

As of March 15, 2003, the majority of cases have occurred in people who have had very close contact with other cases and over 90% of cases have occurred in healthcare workers.

How is SARS diagnosed?

Because the etiology for SARS is presently unknown, SARS is currently a **clinical diagnosis** based on the above case definitions. Basic diagnostic testing should be performed at the local hospital, while more specialized testing should be sent to the Riverside County Public Health Laboratory. **Please know that until we get further information, these specimens should be handled as Biosafety Level (BSL) 2+ pathogens (handle in a BSL-2 facility with BSL-3 practices).** The County Public Health Laboratory will forward appropriate specimens to the California Department of Health Services (CDHS) Laboratory. Initial diagnostic testing at the hospital should include: (NOTE: Laboratory specimens should be labeled as “Suspect SARS.”)

- Chest x-ray
- CBC with differential
- Sputum for Gram stain and routine bacterial culture and sensitivity
- Sputum for *Legionella* culture and Direct Fluorescent Antibody (DFA), and urine for *Legionella pneumophila* serogroup 1 antigen (Ag)
- Blood cultures
- Nasopharyngeal swabs for viral DFA testing and viral culture, specifically testing for influenza A and B, parainfluenza, and respiratory syncytial virus (RSV).

Specimen Submission

The following are now the requested and optimal samples to collect and submit ASAP to VRDL (via the Riverside County Public Health Laboratory) on suspected SARS cases:

- (**≥2**) NP swabs in Viral Transport Medium (VTM)
(Endotracheal Tube aspirate (if intubated))
- **Acute Serum - ≥ 3cc** (collected ≤ 7 days after onset)
- **Stool sample OR rectal swab in VTM**

AND – 21 days post onset (of fever):

- Convalescent serum - ≥ 3cc
- Convalescent NP swab(s)

Notable Changes: Urine, white blood cells, and whole blood are no longer required by California Department of Health Services. A convalescent NP swab with serum sample is **very important 21 days post fever onset.**

Clinicians are asked to remind laboratories not to discard any SARS-related specimens, and to freeze serum for potential further studies.

How is SARS treated?

Since the exact cause of SARS remains unknown, no specific treatment recommendations can be made at this time. For patients with more severe illness, empiric therapy should include coverage for organisms that usually cause community-acquired pneumonia. Healthcare providers are instructed to follow currently available clinical practice guidelines for community-acquired pneumonia. Intensive supportive care, including intubation and mechanical ventilation, may be indicated. For patients requiring hospitalization, consultation with infectious disease specialists is recommended.

What infection control measures are indicated with SARS?

Infection control practitioners (ICP) should be notified of all patients admitted with suspected SARS. Until the etiology and route of transmission of SARS is identified, hospital staff should follow the isolation precautions outlined below. Many ill persons are likely to report to the hospital emergency room or to their health care provider. With the assistance of ICP, isolation precautions should be specifically adapted to alternative care situations.

It is important that health care facilities/physician offices triage patients presenting with fever and cough to determine if they have a history of travel to areas where SARS cases have been reported. For this reason, Public Health recommends posting Alert signs in prominent locations in emergency rooms, and clinics, instructing individuals presenting with symptoms suggestive of SARS to **immediately** notify health care staff. Appropriate triage will decrease the likelihood of exposure of staff and other patients in the health care facility (a sample sign with suggested wording is included for your reference).

Isolation Precautions

Airborne precautions (including an isolation room with negative pressure relative to the surrounding area and use of a fit-tested N-95 respirator for all persons entering the room) should be used in addition to contact precautions.

Room Placement

Patients with suspected SARS should be isolated, ideally, in negative pressure rooms with adjoining anterooms. However, these facilities may be limited or, in some hospitals, non-existent. Several options for isolating patients with SARS are presented. Plan A or B is the best approach for a limited number of cases. Plan C may have to be implemented to accommodate increasing numbers of patients.

Plan A: – Airborne (Negative Pressure) Isolation Room: Place the patient in a private room that has (1) monitored negative air pressure in relation to the exterior surrounding areas, (2) 6 - 12 air changes per hour (ACH), and (3) appropriate venting of contaminated air to the outside. If 6 - 12 ACH cannot be achieved, place a HEPA filtration unit in the room. The windows and doors should remain closed and the patient should remain in the room.

Plan B: – No Negative Pressure Room: Place the patient in a private room, equipped with a HEPA filtration unit if available. The windows and doors should remain closed and the patient should remain in the room.

Plan C: – Designated Nursing Unit: If the number of patients requiring hospitalization and isolation increases, consider designating a wing of a nursing unit or, preferentially, an entire nursing unit. Infection control practitioners should develop a plan consistent with the structure of the hospital and the ability to effectively isolate infected patients from non-infected patients.

Visitors

Visitors should be limited to the immediate family or significant others. All visitors should be instructed to wear appropriate personal protective equipment.

Personal Protective Equipment (PPE)

Respirators: Disposable, NIOSH-approved, fit-tested N-95 respirators should be worn when entering the room and removed after leaving the room. If patients cannot be placed in negative pressure or HEPA filtered rooms, N-95 respirators should be worn at all times when entering a designated SARS unit.

Facial Shields or Eye Protectors: Face shields or eye protectors with side shields should be worn when entering the room.

Gowns: Disposable gowns or coveralls should be worn when entering the room if substantial contact with patient or environmental surfaces is anticipated.

Gloves: Disposable gloves should be worn when entering the room.

Dietary Trays and Eating and Drinking Utensils: Disposable dietary trays and eating and drinking utensils are not recommended at this time.

Handwashing

Hands should be washed with soap (antimicrobial or plain) and water after unprotected (ungloved) contact with visible blood, body fluids (respiratory and nasal secretions, excretions, wound drainage and skin visibly soiled with blood and body fluids). If hands are not visibly soiled, an alcohol-based hand rub can be used to decontaminate hands after patient contact. After handwashing or hand decontamination, avoid touching the patient and surfaces or items in the immediate vicinity of the patient (bed rails, bedside tables).

Transporting Patients

Patients should not be transported to other areas of the hospital unless absolutely necessary. If patients must be transported, place a surgical mask over patient's nose and mouth, if tolerated. If an elevator is used to transport patients, all occupants should wear N-95 respirators.

Patient Care Equipment

Patient care equipment (e.g., thermometers, blood pressure cuffs, stethoscopes and commodes) should be kept in the patient's room. Use disposable equipment whenever possible. Reusable equipment should be placed in an appropriately labeled container, sealed and transported to central service for reprocessing.

Environmental Services

Daily Cleaning: Disinfect environmental surfaces in the patient's room and bathroom with a properly diluted Environmental Protection Agency (EPA) approved disinfectant such as a quaternary ammonium compound or a phenolic according to hospital policy.

Terminal Cleaning: should be performed according to standard hospital policy.

Soiled Linen

Soiled Linen should be according to standard hospital policy.

Biohazard Waste

Disposable items removed from the patient's room should be handled according to standard hospital policy.

Deceased Patient

Deceased patients should be transferred to the morgue in a leak-proof body bag.

For the outpatient setting:

Suspect SARS patients, on arrival to the outpatient or ambulatory setting, e.g., clinic or Emergency Department (ED), should be evaluated in a separate assessment area to determine if they meet the case definition for suspected SARS and require isolation. A surgical mask should be placed on the patient. All SARS patients must be instructed in home isolation and sign the Home Isolation Instruction Sheet **prior** to leaving the clinic/physician's office. It is important that clinicians inform their patient that home isolation will be required for ten days post resolution of their symptoms. Public Health staff will be contacting each patient to assess their clinical status and ensure adherence with home isolation. A copy **must** be faxed to Disease Control at (909) 358-5102 (See attached copy).

All health care personnel should wear N-95 respirators while taking care of patients with suspected SARS. Precautions should be used when evaluating or transporting patients (e.g., emergency medical technicians), or in any ambulatory healthcare setting (e.g., ED or clinic personnel). If N-95 respirators are not available, surgical masks should be worn by personnel.

For home or residential setting:

Placing a surgical mask on suspect SARS patients during contact with others at home is recommended. If the patient is unable to wear a surgical mask due to illness or anatomical facial features, it is prudent for household members to wear surgical masks when in close contact with the patient.

How should cases of SARS be reported?

Healthcare providers and hospitals are asked to **report suspect cases of SARS to the Riverside County Department of Public Health**. During business hours, call the Disease Control Branch at (909) 358-5107 or 358-5266; after 5pm and on weekends, call our answering service at (909) 782-2974 and ask to speak with the Duty Officer on call.

Please complete the SARS Screening Form (attached) prior to discussing the case with the Duty Officer. If requested by the Duty Officer, a SARS Case Report Form (attached) should be completed for patients who appear to meet the case definition.

What travel advisories are currently being recommended?

CDC advises that persons planning elective or nonessential travel to areas affected by the outbreak may wish to postpone their trips until further notice. According to WHO, there is presently no recommendation for people to restrict travel to any destination. Travelers may wish to determine their individual risks for illness by seeking advice from their personal physician or a travel medicine clinic. WHO is now offering limited guidance for travelers, airline crew and airlines at <http://www.who.int/mediacentre/releases/2003/pr23/en/>.

Where can healthcare providers find more information on SARS?

More information is available at the CDC Emergency Operations Center (770) 488-7100. Detailed information can also be found on the Internet at:

- <http://www.cdc.gov/ncidod/sars/index.htm>
- <http://www.who.int/en/>