



## SEVERE ACUTE RESPIRATORY SYNDROME

### Collection and Handling of Specimens for the Evaluation of Potential Cases of SARS

Please contact your state health department before collecting and shipping specimens for SARS testing.

#### BODILY FLUIDS

##### *I. Respiratory tract specimens*

Respiratory specimens should be collected as soon as possible in the course of the illness. The likelihood of recovering most viruses diminishes markedly >72 hours after symptom onset. Some respiratory pathogens may be isolated after longer periods.

Three types of specimens may be collected for viral or bacterial isolation and PCR. These include: 1) nasopharyngeal wash/aspirates; 2) nasopharyngeal swabs; or 3) oropharyngeal swabs. Nasopharyngeal aspirates are the specimen of choice for detection of respiratory viruses and are the preferred collection method among children aged <2 years.

##### **A. Upper Respiratory Tract**

###### 1. Collection of nasopharyngeal wash/aspirate

Have the patient sit with the head tilted slightly backward. Instill 1 - 1.5 ml of nonbacteriostatic saline (pH 7.0) into one nostril. Flush a plastic catheter or tubing with 2 - 3 ml of saline. Insert the tubing into the nostril parallel to the palate. Aspirate nasopharyngeal secretions. Repeat this procedure for the other nostril. Collect specimens in sterile vials. Each specimen should be labeled with ID number and the date collected. If shipped domestically, ship with cold packs to keep sample at 4°C. If shipped internationally, ship on dry ice.

###### 2. Collection of nasopharyngeal or oropharyngeal swabs

Use only sterile dacron or rayon swabs with plastic shafts. Do **NOT** use calcium alginate swabs or swabs with wooden sticks, as they may contain substances that inactivate some viruses and inhibit PCR testing.

Nasopharyngeal swabs - Insert swab into nostril parallel to the palate and leave in place for a few seconds to absorb secretions. Swab both nostrils.

Oropharyngeal swabs - Swab both posterior pharynx and tonsillar areas, avoiding the tongue.

Place swabs immediately into sterile vials containing 2 ml of viral transport media. Break applicator sticks off near the tip to permit tightening of the cap. Each specimen should be labeled with ID number and the date collected. If shipped domestically, ship with cold packs to keep sample at 4°C. If shipped internationally, ship on dry ice.

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### **B. Lower Respiratory Tract**

Collection of bronchoalveolar lavage, tracheal aspirate, pleural tap: If these specimens have been obtained, half should be centrifuged and the cell-pellet fixed in formalin. Remaining unspun fluid should be placed in sterile vials with external caps and internal O-ring seals. If there are no internal O-ring seals, then cap securely and seal with parafilm. Each specimen should be labeled with ID number and the date the sample was collected. If shipped domestically, ship with cold packs to keep sample at 4°C. If shipped internationally, ship fixed cells at room temperature and unfixed cells frozen.

## ***II. Blood components***

### **A. Collection of serum**

Acute serum specimens should be collected and submitted as soon as possible. If the patient meets the case definition, convalescent specimens should be collected and submitted no sooner than 22 days after the onset of fever.

Collect 5-10 ml of whole blood in a serum separator tube. Allow blood to clot, centrifuge briefly and collect all resulting sera in vials with external caps and internal O-ring seals. If there are no internal O-ring seals, then cap securely and seal with parafilm. A minimum of 200 microliters of serum is preferred for each test which can easily be obtained from 5mL of whole blood.

**PEDIATRIC PATIENTS:** a minimum of 1cc of whole blood is needed for testing. If possible, collect 1cc in both an EDTA and clotting tube. However, if only 1cc can be obtained, please use a clotting tube for collection.

Each specimen should be labeled with ID number and the date the specimen was collected. If unfrozen and transported domestically, ship with cold packs to keep sample at 4°C. If frozen or transported internationally, ship on dry ice.

### **B. Collection of EDTA blood**

Collect 5-10 ml of whole blood in an EDTA (purple-top) tube. Transfer to vials with external caps and internal O-ring seals. If there are no internal O-ring seals, then cap securely and seal with parafilm. Each specimen should be labeled with ID number and date of collection. If shipped domestically, blood specimens should be stored and shipped with cold packs to keep sample at 4°C. If shipped internationally, ship on dry ice.

## ***III. Stool***

Stool (10-50 cc) should be placed in a stool cup or urine container, capped securely, sealed with parafilm and bagged. Specimens should be kept at 4° C and shipped with cold packs.

## **TISSUE SPECIMENS (for deceased patients)**

### **I. Fixed tissues (formalin fixed or paraffin embedded) from all major organs (e.g. lung, trachea, heart, spleen, liver, brain, kidney, adrenals)**

Formalin fixed tissue is not considered a biohazard or chemical hazard.

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Store and ship at room temperature. \*DO NOT FREEZE FIXED TISSUES\*

**II. Fresh frozen tissues from lung and upper airway (e.g. trachea, bronchus)**

Specimens should be collected aseptically as soon as possible after death. Technique and time will impact risk of post-mortem contamination. Use separate sterile instrument for each collection site. Place each specimen in separate sterile containers containing small amounts of viral transport media or saline.

Store and ship frozen at -70°C on dry ice.

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)

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