What is Severe Acute Respiratory Syndrome (SARS)

Severe Acute Respiratory Syndrome (SARS) is a respiratory illness caused by a coronavirus, called SARS-associated coronavirus (SARS-CoV-1). Coronaviruses are considered zoonotic and have subgroups that are particularly noted for their history of spill over events into humans from animals. SARS was first reported in Asia in 2003. Over the next few months, the illness spread to more than two dozen countries in North America, South America, Europe, and Asia before the global outbreak was contained. During the 2003 outbreak, a total of 8,098 people became sick and 774 died from SARS. In the US, only 8 people had laboratory evidence of SARS-CoV. All of these cases had traveled to other parts of the world where SARS was spreading. SARS-CoV-1 spreads mainly through respiratory droplets when an infected person coughs, sneezes, or talks. It can also spread by touching surfaces contaminated with the virus and then touching the mouth, nose, or eyes. Most who contracted SARS were previously healthy adults ages 25-70 yrs. The case fatality rate for SARS is around 9.6%. COVID-19 is caused by the SARS-CoV-2 virus and is closely related to SARS. It is suspected that SARS-CoV-2 treatments are likely to be effective and that the COVID-19 vaccines may offer some cross-protection.

Clinical Presentation & Disease Summary

Transmission:

- Close person-to-person contact
- Droplet transmission through respiratory droplets when an infected person coughs or sneezes
- Can also be transmitted by touching a contaminated surface or object and then touching mouth, nose, or eyes
- Possible airborne transmission

Incubation Period:

- 2-7 days, but maybe as long as 10

Signs and Symptoms:

- Fever, often high and sometimes associated with chills and rigors
- Other symptoms include:
  - Headache
  - Malaise
  - Muscle pain
  - Few have reported diarrhea early on
  - At onset of illness, some may have mild respiratory symptoms
- After 3-7 days, lower respiratory phase begins with onset of:
  - Dry, non-productive cough
  - Dyspnea (shortness of breath)
- May progress to hypoxemia

Complications:

- Hypoxemia
- May require intubation and mechanical ventilation (10-20% of cases)
- White blood count is often decreased early in disease
- May have low platelet counts at peak of disease
- May have abnormal chest X-ray
- Death

When to Suspect a Patient has SARS

Suspect SARS in any individual who has a fever and one or more symptoms of SARS (listed above) **AND** one or more of the following exposure risk factors within 1 week of symptom onset:

- Travel to / residence in a country known to have circulating SARS. Outbreak map located here
- Known/suspected exposure to ill person with suspected/confirmed SARS

- Known/suspected exposure to a person with mild to moderate or severe respiratory illness for whom a chain of transmission can be linked to a confirmed case of SARS-CoV-1 in the 10 days prior to symptom onset.

Key Steps for Frontline Clinical Staff

Identify
- Assess the patient for signs and symptoms, travel history, and epidemiological criteria.
- For assistance, contact facility Infection Prevention and Control or on-call hospital epidemiologist.

Isolate
- Provide a mask to the patient and initiate prompt isolation and triage. Follow infection control and prevention guidance.

Inform
- Notify dept/facility leadership, Infection Prevention & Control, on-call hospital epidemiologist.
- Notify jurisdictional health department immediately (via the 24-hour Epi-On-Call contact list) and follow jurisdictional protocols for patient assessment.

Infection Prevention and Control

Hand Hygiene

- Perform hand hygiene before and after all patient contact, contact with potentially infectious material, and before putting on and upon removal of PPE, including gloves.
- Use soap and water for at least 20 seconds or use alcohol-based hand rubs. If hands are visibly soiled, use soap and water.

Patient Placement

- Place patient in a single patient **Airborne Infection Isolation Room (AIIR)**. If an AIIR is not available, isolate the patient in a private examination room. Keep the door closed, minimize entry and exit, and avoid entry without appropriate PPE.
- Limit movement of the patient outside of the room. When outside the room, **patient should wear a facemask**.

Transmission-Based Precautions & Personal Protective Equipment

- Adhere to **Airborne + Contact + Eye Protection Precautions in addition to standard precautions**. Use an N95 respirator, gloves, gown, and face shield/goggles.
- Follow Donning and Doffing Checklist
  - Example: NYC Health + Hospitals SP Level 1

Environmental Infection Control

- SARS-CoV is a **Category B infectious substance**: not in a form generally capable of causing permanent disability or life-threatening/fatal disease in healthy humans if exposure occurs.
- SARS-CoV clinical waste can be managed as **regulated medical waste**.
- To allow sufficient time for airborne contaminant removal:
  - If a negative pressure AIIR was NOT used, the room must remain vacant for at least 2 hours.
  - If a negative pressure room AIIR was used, the room should stay vacant for at least 35 minutes.
- Clean and disinfect the patient's care area using an EPA registered disinfectant for appropriate contact times that has a label claim for influenza. Management of laundry, food service utensils, and medical waste should also be performed in accordance with routine procedures.

Diagnostic Testing

- **Consultation and approval from jurisdictional health department is required for disease-specific diagnostic testing.** Call jurisdictional health department 24-hour Epi-On-Call contact.
- Collection of **lower respiratory, upper respiratory and serum specimens for testing is recommended.**
- Respiratory specimens should be collected as soon as possible after symptoms being – ideally within 7 days.
- There is currently no laboratory recommendations for SARS-CoV-1 however, CDC laboratory specimen collection for SARS-CoV-2 can be located here.

Treatment and Immunization

- At the time of the 2003 outbreak there was no treatment or cure available
- Antivirals such as polymerase and protease inhibitors against SARS-CoV-2 are likely to be effective against SARS-CoV-1.
- COVID-19 vaccines may provide some level of cross protection against SARS; however, the extent of such cross-protection remains to be studied.

Contact: SystemBiopreparedness@nychhc.org

References:

- CDC SARS Basics Fact Sheet
- WHO Severe Acute Respiratory Syndrome (SARS)