SARS Tops Healthcare Concerns

by James S. Kennedy, MD, CCS, and Mary H. Stanfill, RHIA, CCS, CCS-P

HIM professionals serve a vital public health role as they capture and report illnesses, including the newly discovered Severe Acute Respiratory Syndrome (SARS). Accurate reporting of SARS and its comorbid or complicating conditions facilitates optimal disease tracking, use of resources, and planning for the global healthcare community.

This article describes the known clinical information about SARS, its clinical manifestations, etiology, and reporting of the illness using ICD-10 and ICD-9-CM classification systems.

Outbreak: SARS is Discovered

Cases of a life-threatening respiratory disease of unknown etiology were reported from the Guangdong Province in mainland China in 2002. The same disease was later described in other countries such as Vietnam, Singapore, Hong Kong, Canada, Taiwan, the United Kingdom, and the US. In February 2003, the US Centers for Disease Control and Prevention (CDC) described this respiratory illness as SARS. In March 2003, an outbreak of fever or atypical pneumonia was described in more than 50 employees of the Prince of Wales Hospital in Hong Kong, subsequently to be diagnosed and classified as SARS.

As of April 30, 2003, a total of 5,663 cases of SARS worldwide had been reported to the World Health Organization (WHO), and 6.6 percent of the diagnosed patients died.[1] As of May 7, a total of 328 SARS cases had been reported in the US from 38 states, of which 265 (81 percent) were classified as suspect SARS and 63 (19 percent) were classified as probable SARS.[2] At press time, no fatalities from SARS had occurred in the US.[3]

Clinical Manifestations of SARS

The incubation period between exposure and illness for SARS is two to seven days, though it can be as long as 10 days. Its most common presenting symptoms include fever, chills, rigors, myalgia, cough, and headache. Physical examination typically shows fever and inspiratory crackles of the lungs.

Abnormal laboratory studies found within a percentage of patients include leukopenia (33 percent); lymphopenia (66 percent); thrombocytopenia (44.8 percent); an elevated PTT (42.8 percent); elevated D-Dimer studies (45.0 percent), and nonspecific abnormalities in serum chemistries.[4] Most patients will have air-space consolidation or interstitial patterns on chest x-rays consistent with pneumonia sometime during their illness.[5] In one reported outbreak, 32 percent of the patients were admitted to the intensive care unit due to respiratory failure. Approximately half of these patients required mechanical ventilation.[6]

The differential diagnoses for SARS include all forms of pneumonia acquired in the community, such as bacterial pneumonia, Legionnaires' disease, other viral pneumonia, mycoplasma pneumonia, and influenza. Patients suspected to have SARS are generally placed in isolation to prevent spread of infection.

At press time, treatment of SARS consisted of hospitalization, antibiotics, and supportive care, including mechanical ventilation for pneumonia and acute respiratory distress syndrome. Several antiviral agents have been used with or without steroids to no significant avail. Thus far, no drug has proven effective at altering the natural course of the illness.

Diagnosing SARS

The CDC interim suspected case definition for SARS is based on clinical, epidemiologic, and laboratory criteria. The clinical criteria describe the ranges of mild, moderate, and severe respiratory illness. Epidemiologic criteria include potential exposure to SARS within 10 days of onset of symptoms via either travel to an area with known or suspected cases of SARS or close contact with a person known or suspected to have SARS infection.

Cases that meet the epidemiologic and clinical criteria for "moderate" respiratory illness of unknown etiology with onset since February 1, 2003, are classified as "suspected" cases, whereas a case is classified as "probable" in the same circumstance when the individual meets the clinical criteria for "severe" respiratory illness, according to the CDC case definition.[7]

Laboratory criteria were added to the CDC case definition following evidence that the SARS-associated coronavirus (SARS-CoV) was the etiology of the syndrome. The WHO SARS Working Group published evidence that this coronavirus did cause SARS and proposed that it be named the Urbani SARS-CoV.[8]

The CDC case definition laboratory criteria include isolation of SARS-CoV, detection of antibody to SARS-CoV, or detection of SARS-CoV RNA. SARS is not diagnosed solely on the basis of laboratory tests, but on clinical presentation and possible past exposure. Positive laboratory studies, as specifically outlined in the CDC case definition, confirm the diagnosis of SARS. In the US, clinicians should report any case of SARS to the state health department, whether it is suspected, probable, or confirmed.

This clinical information is provided to help coding professionals understand the disease process, not to provide coders with criteria regarding when a case should be classified as SARS. All code assignments should be based on physician documentation in the health record. If there are any questions about the patient's diagnosis, the physician should be queried for clarification and additional information.

Classifying, Reporting SARS

Definitive classification of SARS is difficult at this time, as much is still unknown about the disease and SARS-CoV. At press time, specific codes for SARS had not yet been determined. Fortunately, there are mechanisms in place to determine code assignment for new diseases in both ICD-10 and ICD-9-CM. Currently in the US, ICD-10 is used for mortality reporting while ICD-9-CM is used for morbidity reporting. The US' clinical modification of ICD-10 (ICD-10-CM) is in the final stages of development and has not been implemented. Use of ICD-10 in the US is confined to mortality reporting of death certificates. ICD-10 code assignment is typically done by the state health department.

ICD-10 Update Process

Code maintenance and updates in ICD-10 are under the auspices of the WHO. The WHO Collaborating Centres for Classification of Disease must approve any corrections or additions to ICD-10. The Centre Heads meet annually to review and approve proposals from the Update Reference Committee (URC). The URC also meets annually and is comprised of representatives from each of the 10 Centres for Classification of Disease.

The URC is responsible for reviewing and researching proposals for ICD-10 mortality and morbidity reporting worldwide. The URC may hold a proposal until more clinical information on the condition is available, it may refer the issue back to the mortality reference group with concerns or comments, or it may send a recommendation to the Centre Head for official approval.

This is an annual process. There is also an ongoing process in place to address ICD-10 coding questions and quickly respond to the need to classify new conditions. For mortality coding, this is accomplished via the mortality forum and mortality reference group (MRG). Mortality coding questions are addressed first by the mortality forum. If undecided, they are forwarded to the MRG. Recommendations from the MRG go to the URC each year for final approval.

The MRG met in Washington, DC, in early April. Among other things, it discussed the classification of SARS in ICD-10. The group agreed that SARS cases must be easily identifiable and recognized that using an existing ICD-10 code, such as J18.8 (Other pneumonia, unspecified organism), would make it difficult to differentiate SARS cases from other types of pneumonia.

The group also noted that consistent code assignment is critical and must be determined quickly, due to the intense international public health interest in SARS. According to Donna E. Glenn, branch chief for Mortality Medical Classification for the Division of Vital Statistics, the MRG will make the recommendation to assign ICD-10 code U04.9 for mortality reporting of SARS deaths as an interim solution.

In ICD-10, U codes are designated as temporary codes. The MRG is recommending that this temporary code be used until more information is known about SARS and consensus is achieved on a definitive code. In the event that a new code for

SARS is created within a specific section of ICD-10, the U04.9 code will be cross-walked to the new code.

ICD-9-CM Update Process

Diagnosis code maintenance and updates in ICD-9-CM are the responsibility of the National Center for Health Statistics (NCHS). This is accomplished through the ICD-9-CM Coordination and Maintenance Committee. This committee's role is advisory; the director of NCHS makes final decisions on ICD-9-CM diagnosis code changes or additions.

At press time, NCHS, in conjunction with the international community, was looking at the proper way to code SARS. NCHS was considering creating an "emergency" new code for implementation in October 2003. In the interim, definitive coding advice will be published in the Morbidity and Mortality Weekly Report, which is published by the CDC each Friday.

Delay in code determination is due to the complexity of this syndrome. Until more is known about this condition it is difficult to determine whether SARS should be classified as a viral or lung condition, such as pneumonia or acute respiratory distress.

In the interim, the best practice is to follow the ICD-9-CM official guidelines for coding and reporting. In addition, HIM professionals may want to develop an internal tracking mechanism so that SARS cases could be re-coded if and when a new code for SARS is created. HIM professionals can contribute to the efforts of the WHO's communicable disease surveillance and response network by ensuring that SARS cases can be readily identified.[9]

Now, more than ever, coding is a global issue. Accurate and consistent coding and reporting of SARS and its comorbidities is necessary on a worldwide basis to track the illness, prevent infection of susceptible individuals, and research possible therapies using evidence-based research methodologies.

Stick to the Guidelines

Until a specific ICD-9-CM code is determined for reporting and disease surveillance of SARS, coders should follow the existing ICD-9-CM Official Guidelines for Coding and Reporting. These guidelines instruct the coder to code the manifestation when a specific code for the condition does not exist. For example:

- If the patient is documented to have pneumonia, assign the applicable pneumonia code, such as 480.9, 480.8, or 486
- If the patient is documented to have a URI (not in the lung), code 465.9, acute upper respiratory infection of unspecified site
- If the patient is documented to have only a lung infection (not pneumonia), code 518.89, other diseases of lung, not elsewhere classified
- If the patient is documented to have acute respiratory distress syndrome, code 518.82, other pulmonary insufficiency, not elsewhere classified
- Code V07.0 (Isolation) may be applicable if the patient was placed in isolation after contact with infectious diseases or if documentation indicates that the patient required admission to protect the individual from his or her surroundings

Monitor the CDC Web site for up-to-date coding advice. Watch the Coding (SCC) Community of Practice at www.ahima.org for a summary of updated information as it becomes available.

The following Web sites are also useful for definitive ICD-9-CM code assignment:

CDC: www.cdc.gov/ncidod/sars

NCHS: www.cdc.gov/nchs

CDC's Morbidity and Mortality Weekly Report: www.cdc.gov/mmwr/mguide_sars.html

Notes

1. Centers for Disease Control and Prevention. "Update: Severe Acute Respiratory Syndrome—United States." *Morbidity and Mortality Weekly Report*, 52, no. 17 (May 2, 2003): 388-390. Available at www.cdc.gov/mmwr.
2. Centers for Disease Control and Prevention. "Update: Severe Acute Respiratory Syndrome—United States." *Morbidity and Mortality Weekly Report* 52, no. 18 (May 9, 2003): 411-413. Available at www.cdc.gov/mmwr.
3. Ibid.
4. Lee, Nelson et al. "A Major Outbreak of Severe Acute Respiratory Syndrome in Hong Kong." *New England Journal of Medicine*. Early release posted April 7, 2003, at www.nejm.org.
5. Ibid.
6. Ibid.
7. The CDC case definition of SARS is located at www.cdc.gov/ncidod/sars/pdf/sars-casedefinition.pdf.
8. Ksiazek, Thomas G. et al. "A Novel Coronavirus Associated with Severe Acute Respiratory Syndrome." *New England Journal of Medicine* 348, no. 20 (2003): 1947-1958.
9. More information about the WHO's communicable disease surveillance and response is available at www.who.int/csr/en.

James Kennedy *(jkennedymd@vp-ma.com) is president of VP-MA Health Solutions and physician executive with Cambio Health Solutions in Nashville, TN, where he directs evidence-based documentation and coding partnerships with physicians. Mary Stanfill (mary.stanfill@ ahima.org) is a coding practice manager at AHIMA.*

Article citation:
Kennedy, James S., and Mary H. Stanfill. "SARS Tops Healthcare Concerns: Coding Role Vital to Reporting Deadly Disease." *Journal of AHIMA* 74, no.7 (July/August 2003): 75-79.