

New Guidelines Issued to Aid Management of CAP

The consensus guidelines offer a new set of criteria for the decision to admit a patient to the ICU.

BY BARBARA J. RUTLEDGE
Contributing Writer

New consensus guidelines could help primary care physicians, emergency physicians, and hospitalists better manage community-acquired pneumonia in immunocompetent adults.

A joint committee of the Infectious Diseases Society of America and the American Thoracic Society developed the treatment guidelines, which emphasized that they should be modified according to local epidemiology and susceptibility data (Clin. Infect. Dis. 2007;44:S27-72).

The main differences between the consensus guidelines and earlier management guidelines "center on issues of etiology, the site of care decisions, and diagnosis," Dr. Lionel A. Mandell said in an interview. Dr. Mandell is professor of medicine at McMaster University, Hamilton, Ont., and is the corresponding author of the guidelines publication.

"In terms of etiology, community-acquired MRSA [methicillin-resistant *Staphylococcus aureus*] has now become an issue," he explained. "For the site of care decision, the CURB-65 [confusion, uremia, respiratory rate, low blood pressure, age 65 years or greater] criteria are now recommended as well as the PSI [Pneumonia Severity Index] criteria."

► **Site-of-care selection.** Assessment of disease severity is the most critical initial decision in management of community-acquired pneumonia (CAP), with an immediate effect on the site of care selection.

The guidelines identify the site of care decision as one area in which CAP management could be improved: "Physicians often admit patients to the hospital who could be well managed as outpatients and who would generally prefer to be treated as outpatients." To help clinicians evaluate CAP disease severity and determine the most appropriate site of care, the IDSA/ATS Consensus Guidelines recommend the use of severity of illness scores such as CURB-65 and PSI. The three site of care options are outpatient treatment, hospitalization in a medical ward, or admission to an ICU.

In general, patients at low risk for death should be treated in an outpatient setting. Inpatient care increases treatment costs considerably, and unnecessary admissions to the ICU or medical wards may tie up limited hospital resources. In addition, hospitalization increases the risk of thromboembolic events and superinfection by more virulent bacterial strains. However, clinicians must take into account subjective factors, such as the patient's ability to take oral medication safely and reliably, and the support resources available to the patient in an outpatient setting.

► **ICU admission.** The consensus guidelines offer a new set of criteria for the ICU admission decision, while retaining the format of the earlier ATS guidelines.

The guidelines distinguish between patients meeting major admission criteria (strong recommendation for ICU admission) and those meeting three or more minor admission criteria (moderate recommendation for admission).

Direct admission to an ICU is strongly recommended for patients in septic shock requiring vasopressors or with acute respiratory failure requiring mechanical ventilation. Direct admission to an ICU is moderately recommended for patients who meet at least three of these criteria: respiratory rate of 30 breaths/min or higher, arterial oxygen pressure/fraction of inspired oxygen ratio of 250 or lower, multilobar infiltrates, confusion/disorientation, BUN level of 20 mg/dL or higher, WBC count less than 4,000 cells/mL, platelet count less than 100,000 cells/mL, core temperature below 36°C, and hypotension requiring fluid resuscitation.

► **Antibiotics.** Empirical antibiotic recommendations do not differ substantially from earlier ones. Additional clinical evidence now supports combination antibiotic therapy for severe CAP, and ertapenem is included as a β -lactam alternative recommended under some circumstances.

► **Diagnosis and testing.** Diagnosis of pneumonia is made based on clinical symptoms and evidence of an infiltrate in the lungs, usually from images obtained

by chest radiography or other technique.

The issue of diagnostic testing to determine etiology remains controversial. "Blood cultures and Gram stain and culture of respiratory secretions are not recommended for all hospital admissions," Dr. Mandell said. If the clinician suspects infection with specific pathogens that would require a change in the empirical antibiotic regimen, testing for CAP etiology is recommended. If sputum samples are collected, ideally the samples should be obtained before antibiotic therapy is initiated. Gram stains of sputum samples may guide initial antimicrobial therapy and validate later sputum culture results.

Severe CAP is an indication for blood cultures, because of the increased possibility that an unusual pathogen may be detected. Pretreatment blood and sputum cultures also are appropriate for hospitalized patients with risk factors such as asplenia, which would lead to an inability to clear bacteremia, or with comorbid conditions associated with increased likelihood of bacteremia with CAP, such as chronic liver disease or leucopenia.

Alcoholism and chronic obstructive pulmonary disease are major risk factors for infection with gram-negative pathogens such as *Pseudomonas aeruginosa*; blood and sputum cultures may be appropriate in patients with those conditions. ■

The guidelines are available as a free download at www.journals.uchicago.edu/CID/journal/issues/v44nS2/41620/41620.html.

Tuberculosis Rates at All-Time Low, but Decline Has Slowed

BY MIRIAM E. TUCKER
Senior Writer

The U.S. tuberculosis rate hit an all-time low in 2006, but the rate of decline has been slowing while drug-resistant cases continue to pose a threat, the Centers for Disease Control and Prevention said.

There were 13,767 TB cases reported in 2006, a rate of 4.6 per 100,000 population. That number represents a 3.2% decline from the 2005 rate, the lowest recorded since reporting began in 1953. However, the rate of decline has slowed in recent years: The average annual percentage decline in the TB incidence rate was 7.3% per year during 1993-2000, but the rate of decline dropped to just 3.8% per year during 2000-2006, the CDC said (MMWR 2007;56:245-50).

Foreign-born individuals and racial/ethnic minority populations continue to be disproportionately affected by TB in the United States. In 2006, the TB rate among individuals born outside the United States was 9.5 times that of those born in the country, while the rates among blacks, Asians, and Hispanics were 8.4, 21.2, and 7.6 times higher than among whites, respectively.

The proportion of TB cases among foreign-born individuals has increased each year since 1993. In 2006, 56% of those cases were from just five countries: Mexico, the Philippines, Vietnam, India, and China. Most of the foreign-born individuals in the United States who progress from latent TB infection to TB disease initially became infected while abroad. Thus, "if the global TB pandemic remains unmitigated, eliminating TB in the United States will be increasingly difficult," the CDC said.

A total of 124 cases of multidrug-resistant TB (MDR TB) were reported in 2005, the most recent year for which complete data are available. The proportion of MDR TB

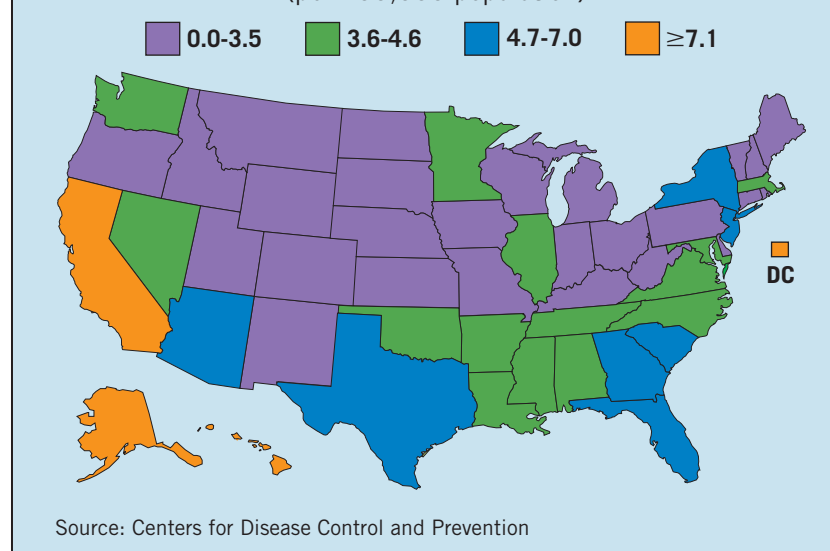
cases—defined as resistance to at least two first-line therapies, isoniazid and rifampin—remained constant at 1.2% from 2004 to 2005. In 2005, foreign-born individuals accounted for 81.5% of the 124 MDR TB cases, the CDC said.

The number of extensively drug-resistant TB (XDR TB) cases didn't change substantially from 1993-1999 to 2000-2006, but the characteristics of cases shifted in parallel with the changing epidemiology of TB in general and of MDR TB in particular. During 1993-1999, 32 reported cases met the criteria for XDR TB (resistance to isoniazid and rifampin, and to any second-line fluoroquinolone and at least one injectable drug), compared with 17 during 2000-2006 (MMWR 2007;56:250-3).

As with the overall TB rates, the overall numbers declined while the proportion among foreign-born individuals rose, from 39% in the first period to 76% in the second. Other changes in XDR TB epidemiology included a decrease in the proportion of cases among HIV-infected individuals and an increase in the proportion of patients who are Asian, they said.

Effective treatment of MDR TB requires administration for 18-24 months of 4-6 drugs to which the infecting organism is susceptible, including multiple second-line drugs. Beginning in the 1980s, the use of second-line drugs increased substantially as physicians and TB control programs treated growing numbers of MDR TB cas-

Rates of Tuberculosis in the United States
(per 100,000 population)



es. Increased use of these drugs resulted in MDR TB strains with extensive resistance to both first- and second-line drugs, the CDC said.

Progress has been made on several new drugs in the past year, with human testing currently being conducted with six agents in five different drug classes. The CDC's TB Trials Consortium, in collaboration with the Global Alliance for TB Drug Development, has completed two preliminary trials with moxifloxacin. Those studies are expected to lay the groundwork for a trial of a treatment-shortening regimen for TB. The consortium is also nearing completion of a trial of a 3-month rifampentine-based treatment for latent TB infection. ■