



Preventing Pneumococcal Pneumonia

MARY MCGOLDRICK, MS, RN, CRNI

S*treptococcus pneumoniae* (pneumococcus) is a gram-positive bacterium with more than 90 known serotypes. Pneumococcus is spread by airborne droplets and is a leading cause of serious illness, including bacteremia, meningitis, and pneumonia among children and adults worldwide. Although all serotypes may cause serious disease, a relatively limited number of serotypes cause the majority of invasive pneumococcal disease (Centers for Disease Control and Prevention [CDC], 2015). Pneumonia, together with influenza, is the eighth leading cause of death in the United States (Murphy et al., 2015), and in 2011 the medical costs for pneumonia exceeded \$10 billion (Pfundtner et al., 2013). To determine the incidence and etiology of community-acquired pneumonia (CAP) hospitalizations among U.S. adults, the CDC conducted one of the largest population-based pneumonia studies ever conducted in the United States (i.e., Etiology of Pneumonia in the Community). The burden of CAP requiring hospitalization among adults is substantial and markedly higher among the oldest adults. Most of the time a specific cause of pneumonia could not be identified, but when it was, viruses were more often to blame than bacteria, with the human rhinovirus and the influenza virus being the most com-

mon viral pathogens detected among pneumonia patients. Of the bacterial pathogens, *S. pneumoniae* was the most commonly detected bacterium, causing an estimated five times more pneumonia hospitalizations in adults 65 years and older than in younger adults. These data suggest that improving the coverage and effectiveness of recommended influenza and pneumococcal vaccines could reduce the burden of pneumonia among adults (Jain et al., 2015).

Certain patients are at higher risk for developing pneumonia (e.g., adults 65 years of age or older, children younger than 5 years of age, those with underlying medical condition like asthma, diabetes or heart disease, and smokers). Actions that can be taken to prevent pneumococcal pneumonia include:

1. Assess the patient's vaccination status at the time of admission, including the influenza, pneumococcal conjugate vaccine (PCV13), and the pneumococcal polysaccharide vaccine (PPSV23) vaccines, and encourage vaccination if appropriate.
2. Determine if the patient smokes cigarettes. Encourage smoking cessation and offer resources to quit smoking.
3. Implement and instruct the patient and caregiver

about respiratory hygiene/cough etiquette, including the use of masks or tissues and hand hygiene to reduce the spread of respiratory infections (Mandell et al., 2007). ■

Mary McGoldrick, MS, RN, CRNI, is a Home Care and Hospice Consultant, Home Health Systems, Inc., Saint Simons Island, Georgia.

The author declares no conflicts of interest.

Address for correspondence: Mary McGoldrick, MS, RN, CRNI, P.O. Box 21704, Saint Simons Island, GA 31522 (mary@homecareandhospice.com).

REFERENCES

- Centers for Disease Control and Prevention. (2015). *Pneumococcal disease. Epidemiology and prevention of vaccine-preventable diseases*. Retrieved from www.cdc.gov/vaccines/pubs/pinkbook/pneumo.html
- Jain, S., Self, W. H., Wunderink, R. G., Fakhran, S., Balk, R., Bramley, A. M., ..., Finelli, L. for the CDC EPIC Study Team. (2015). Community-acquired pneumonia requiring hospitalization among U.S. adults. *The New England Journal of Medicine*, 373(5), 415-427. doi:10.1056/NEJMoa1500245
- Mandell, L. A., Wunderink, R. G., Anzueto, A., Bartlett, J. G., Campbell, G. D., Dean, N. C., ..., Whitney, C. G. (2007). Infectious Diseases Society of America/American Thoracic Society consensus guidelines on the management of community-acquired pneumonia in adults. *Clinical Infectious Diseases*, 44(Suppl. 2), S27-S72.
- Murphy, S. L., Kochanek, M. A., Xu, J., & Heron, M. (2015, August 31). *National Vital Statistics Reports. 2012* (Vol. 63, No. 9, pp. 1-3).
- Pfundtner, A., Wier, L. M., & Steiner, C. (2013, December). Costs for hospital stays in the United States, 2011. *Healthcare Costs and Utilization Report (HCUP) Statistical Brief #168*. Rockville, MD: Agency for Healthcare Research and Quality. www.hcup-us.ahrq.gov/reports/statbriefs/sb168-Hospital-Costs-United-States-2011.pdf

DOI:10.1097/NHH.0000000000000355