

Medical News

EDITED BY GINA PUGLIESE, RN, MS; MARTIN S. FAVERO, PHD

Missed Opportunities for Immunization of Inpatients

Hospitalized elderly patients are at risk for subsequent influenza and pneumococcal disease. Despite this risk, they are often not vaccinated in this setting. Bratzler and colleagues reviewed the medical records of a national sample of 107,311 fee-for-service Medicare patients, 65 years or older, discharged from April 1, 1998, through March 31, 1999, with a principal diagnosis of acute myocardial infarction, heart failure, pneumonia, or stroke. Patient identifiers were linked to Medicare Part B claims to identify influenza and pneumococcal vaccines paid for before, during, or after hospitalization. The main outcome measures were documentation by chart review or paid claim of influenza or pneumococcal vaccination.

Of the 104,976 patients with a single hospitalization, 35,169 (33.5%) received pneumococcal vaccination prior to admission, 444 (0.4%) were vaccinated in the hospital, and 1,076 (1.0%) were vaccinated within 30 days of discharge. In the subgroup of 40,488 patients discharged from October through December, 12,782 (31.6%) received influenza vaccination prior to admission, 755 (1.9%) were vaccinated in the hospital, and 4,302 (10.6%) were vaccinated after discharge. Of patients who were unvaccinated prior to admission, 97.3% did not receive influenza vaccine and 99.4% did not receive pneumococcal vaccine before hospital discharge.

The authors concluded that national recommendations for inpatient vaccination against influenza and pneumococcal disease are not being followed for the vast majority of eligible Medicare patients admitted to the hospital.

FROM: Bratzler DW, Houck PM, Jiang H, et al. Failure to vaccinate Medicare inpatients: a missed opportunity. *Arch Intern Med* 2002;162:2349-2356.

Opportunities for Immunization of Adults in the Emergency Department

Pneumococcal vaccination rates for adults at risk of developing pneumococcal disease remain below desired levels. Various sites within the hospital (inpatient medicine wards, general medicine clinics, and emergency departments) have been suggested as venues for administering vaccination. The cost-effectiveness of such sites for delivery of pneumococcal vaccination is not known.

Husain and colleagues at Cook County Hospital, Chicago, compared the potential coverage of at-risk patients and cost of pneumococcal vaccination delivered in an emergency department, a general medicine clinic, and an inpatient medicine ward. They studied a retrospective cohort of 300 patients with pneumococcal bacteremia who had been hospi-

talized at Cook County Hospital, an inner-city Chicago public teaching hospital, from January 1994 through December 1998. They measured the presence of risk factors, as defined by the Centers for Disease Control and Prevention, for developing pneumococcal disease prior to index admission for bacteremia; patient use of the emergency department, general medicine clinic, and inpatient medicine ward from 4 weeks to 5 years before index admission; size of target population for vaccination in each site; and cost-benefit of a pneumococcal vaccination strategy at each site.

In the 4 weeks to 5 years before index admission, risk factors were present in 209 patients; 182 (87.1%) of the 209 had been in the emergency department, 104 (49.7%) in an inpatient medicine ward, and 64 (30.6%) in a general medicine clinic. The emergency department showed the greatest potential vaccine coverage, at a cost savings in a best-case scenario; the inpatient medicine ward showed the best cost-benefit ratio, but would provide access to fewer at-risk patients; and a program in the general medicine clinic would reach the fewest at-risk patients, with a cost-benefit ratio similar to that of the emergency department.

The authors concluded that the emergency department in an inner-city hospital has the potential to vaccinate more patients at risk of pneumococcal bacteremia than does a general medicine clinic or an inpatient medical ward, and may do so at a cost savings. A prospective evaluation of such a strategy is warranted.

FROM: Husain S, Slobodkin D, Weinstein RA. Pneumococcal vaccination: analysis of opportunities in an inner-city hospital. *Arch Intern Med* 2002;162:1961-1965.

More Than 2,000 Surgical Infections Entering Year 2000: Results of a Prospective Study

Sawyer and colleagues from the Charles O. Strickler Transplant Center, University of Virginia Department of Surgery, Charlottesville, conducted a study to assess the demographics and characteristics of infections in surgical patients to define areas that deserve emphasis in surgical education. This was a prospective, observational study of all infections occurring on the general and trauma surgery services at a single university hospital during a 3.5-year period. They identified 2,457 infections: 608 community acquired, 1,053 occurring on the wards, and 796 occurring in the intensive care unit. Although dependent on patient location, the most common sites were abdomen, lung, and wound; the most common isolates were *Staphylococcus epidermidis*, *S. aureus*, and *Candida albicans*; and the most commonly used antibiotics were

ciprofloxacin, vancomycin, and metronidazole. The overall death rate was 13%, ranging from 5% after community-acquired infections to 25% after infections acquired in the intensive care unit.

It was concluded that most infections treated by surgeons are hospital acquired. Infections with gram-positive cocci and fungi are common, with pulmonary infections becoming more common. Fluoroquinolones have become important therapeutic agents. Depending on the type of practice, these data should be helpful to direct educational efforts so that surgeons can remain knowledgeable and active in the nonsurgical care of their patients.

FROM: Sawyer RG, Raymond DP, Pelletier SJ, Crabtree TD, Gleason TG, Pruett TL. Implications of 2,457 consecutive surgical infections entering year 2000. *Ann Surg* 2001;233:867-874.

Respiratory Viral Infections in Hospitalized Children: Implications for Infection Control

Identification of children with respiratory viral infections may augment infection control practices on inpatient units. There are clinical syndromes leading to morbidity among hospitalized children, however, in which a viral etiology of the illness might not be considered. Lichenstein and co-investigators from the Department of Pediatrics, University of Maryland Medical Systems, Baltimore, evaluated virus infection rates among 243 children younger than 1 year to 19 years old hospitalized between October 1993 and April 1994 with asthma, pneumonia, bronchiolitis, fever, apnea, croup, or respiratory distress. Anonymous data collected included admission diagnoses, age, and virus-identification result.

Seventy-one children (29%) had a virus identified, including 19 (15%) of 123 with asthma, 4 (33%) of 12 with pneumonia, 27 (57%) of 47 with bronchiolitis, 13 (32%) of 41 with fever, 4 (44%) of 9 with apnea, 2 (67%) of 3 with croup, and 2 (25%) of 8 with unspecified respiratory distress.

The authors concluded that this study reinforces the concept that clinicians should consider respiratory viruses for a broad range of diagnoses. This heightened awareness may help reduce the number of nosocomial respiratory viral infections

FROM: Lichenstein R, King JC Jr, Lovchik J, Keane V. Respiratory viral infections in hospitalized children: implications for infection control. *South Med J* 2002;95:1022-1025.

Risk of Tuberculin Skin Test Conversion Among Healthcare Workers

Larsen and co-investigators from the Emory University School of Medicine, Atlanta, conducted a

prospective observational cohort study to assess rates of and risk factors for tuberculin skin test (TST) conversion among healthcare workers at an urban hospital located in a high tuberculosis-incidence area in 1994–1998. All hospital employees undergoing required testing every 6 months were included.

A total of 69 (1.2%) of 5,773 susceptible employees had a documented TST conversion (overall rate, 0.38 per 100 person-years worked). No significant difference existed in conversion rates among employees with frequent, limited, or no patient contact. Healthcare workers with a TST conversion lived in zip codes with higher tuberculosis case rates ($P \leq .05$). In the multivariate analysis, TST conversion was associated with a history of bacille Calmette–Guerin vaccination (relative risk, 11.63), an annual salary of less than \$20,000 (relative risk, 3.67), and older age.

In the setting of an effective tuberculosis infection control program, TST conversion rates were low, and risk of conversion among healthcare workers was associated most strongly with nonoccupational factors.

FROM: Larsen NM, Biddle CL, Sotir MJ, White N, Parrott P, Blumberg HM. Risk of tuberculin skin test conversion among health care workers: occupational versus community exposure and infection. *Clin Infect Dis* 2002;35:796-801.

Mycobacterium simiae Pseudo-Outbreak Resulting From a Contaminated Hospital Water Supply

El Sahly and colleagues from Baylor College of Medicine, Houston, report that although various species of nontuberculous mycobacteria are known to cause nosocomial pseudo-outbreaks, there have been no detailed reports of nosocomial *Mycobacterium simiae* pseudo-outbreaks. From April 1997 through February 2001, they recovered 65 *M. simiae* isolates from 62 patients at a community teaching hospital in Houston, Texas. The organism was grown in various water samples obtained in the hospital building and in professional building 1 but not in professional building 2, which has a separate water supply system. Thirty-one environmental and human outbreak-related *M. simiae* isolates had indistinguishable or closely related patterns on pulsed-field gel electrophoresis and were considered clonal.

M. simiae can be a cause of nosocomial pseudo-outbreaks. The reservoir for this pseudo-outbreak was identified as a contaminated hospital water supply.

FROM: El Sahly HM, Septimus E, Soini H, et al. *Mycobacterium simiae* pseudo-outbreak resulting from a contaminated hospital water supply in Houston, Texas. *Clin Infect Dis* 2002;35:802-807.