CDC

FACTSHEET

Standing Orders Programs for Influenza and Pneumococcal Vaccines: Increasing Coverage and Reducing Burden of Disease Among Older Adults

The Advisory Committee on Immunization Practices recommends the use of standing orders programs to increase adult immunization rates.[1] In nursing homes, hospitals, and other institutional settings, standing orders programs for influenza and pneumococcal vaccination of adults aged ≥ 65 are effective in:

I. raising vaccination coverage levels among this population–which, overall, are well below national goals

II. reducing the burden of these diseases–which is highest among the elderly.

Influenza Disease

I. Most years, influenza epidemics are reported by many states. Overall each year, the annual U.S. death toll from influenza averages 20,000, and approximately110,000 persons are hospitalized due to influenza and its complications.[2,3]

I. Influenza viruses cause disease in all age groups,[4,5] but rates of serious morbidity and mortality are highest among persons aged ≥65 years and persons of any age who have medical conditions that place them at high risk for complications from influenza.[6,7,8,9]

Pneumococcal Disease

I. Annually in the United States, pneumococcal disease accounts for an estimated 3,000 cases of meningitis, 63,000 cases of bacteremia, up to 175,000 hospitalized cases of pneumonia, and up to 12,500 deaths due to pneumococcal pneumonia in hospitalized patients.[10,11,12]

I. Despite antimicrobial therapy and intensive medical care, the overall case-fatality rate for pneumococcal bacteremia is 15%-20% among adults.[2]

I. Outbreaks of pneumococcal disease caused by a single drug resistant pneumococcal serotype have occurred in institutional settings including nursing homes.[13,14]

I. Because more pneumococcal strains are becoming increasingly resistant to treatment with antimicrobials–including penicillin and other newer drugs–prevention is more important than ever before. Therefore, public health efforts must focus on increasing pneumococcal vaccination coverage to prevent invasive pneumococcal disease.[1]

Immunization Coverage Rates

I. The Healthy People 2010 objective for influenza and pneumococcal vaccines for *all* persons aged ≥ 65 years is 90%.[15]

I. For persons ≥ 65 years, coverage rates for influenza vaccines may be plateauing: the coverage rate for pneumococcal vaccines continues to improve but remains well below national goals. In 1999, among persons aged ≥ 65 who responded to the Behavioral Risk Factor Surveillance System telephone survey, 67% reported receiving influenza vaccine in the past year, and 54% reported ever receiving a dose of pneumococcal vaccine.[16]

I. Studies indicate that influenza and pneumococcal vaccines are underutilized in institutional settings,[17,18] even after they became covered benefits of Medicare Part B (1981 for pneumoccocal vaccine and 1993 for influenza vaccine).

I. Of persons reporting at least one hospitalization during the previous year to the 1997 National Health Interview Survey, 83% of persons 18-64 years with high-risk medical conditions and 55% of all persons aged 65 years or older reported not receiving pneumococcal vaccine, and 69% of persons 18-64 years with high-risk conditions and 32% of persons aged 65 years or older reported not receiving influenza vaccine (CDC, unpublished data).

I. The 1999 National Nursing Home Survey estimates coverage rates for influenza and pneumococcal vaccination of residents in long-term care facilities of 66% and 38%,[19] respectively, up from 1997 estimates of 64% and 28%,[20] but well below the Healthy People 2000 objective of 80% for both vaccines in persons in long-term care institutions.

Standing Orders Programs

I. Standing orders programs authorize nurses and pharmacists to administer vaccinations according to an institution- or physician-approved protocol without the need for a physician's exam.[1]

I. Two systematic reviews, one prepared by the Task Force for Community Preventive Services,[21] and the other by the Southern California Evidence-Based Practice Center/RAND,[22] have strongly endorsed standing orders programs for adult populations.

I. In a New York hospital, instituting a standing orders program for pneumococcal vaccination of the elderly and at-risk patients increased the pneumococcal vaccination rate from 0% to 78%.[23]

I. Using a standing orders program, pharmacists increased pneumococcal polysaccharide vaccine use in two nursing facilities, one from 4.2% to 94%, the other from 1.9% to 83%, compared to only 4.0% vaccinated in a control facility.[24]

I. In a study of six, small community hospitals in northern Minnesota, standing orders programs achieved an influenza vaccination level of 40.3%, compared to physician reminders or educational programs which achieved rates of 17% and 9.6%, respectively.[25]

Selected References

1 CDC. Use of standing order programs to increase adult vaccination rates: recommendations of the Advisory Committee on Immunization Practices. MMWR 2000;49(RR-1):22-27.

2 Simonsen L, Schonberger LB, Stroup DF, Arden NH, Cox NJ. The impact of influenza on mortality in the USA. In: Brown LE, Hampson AW, Webster RG, eds. Options for the control of influenza III. Amsterdam: Elsevier Science BV, 1996:26-33.

3 Lui K-J, Kendal AP. Impact of influenza epidemics on mortality in the United States from October 1972 to May 1985. Am J Public Health 1987;77:712-6.

4 Monto AS, Kioumehr F. The Tecumseh study of respiratory illness. IX. Occurrence of influenza in the community, 1966-1971. Am J Epidemiol 1975;102:553-63.

5 Glezen WP, Couch RB. Interpandemic influenza in the Houston area, 1974-76. N Engl J Med 1978;298:587-92.

6 CDC. Prevention and control of influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1999;48(RR-4):1-11.

7 Barker WH. Excess pneumonia and influenza associated hospitalization during influenza epidemics in the United States, 1970-78. Am J Public Health 1986;76:761-5.

8 Barker WH, Mullooly JP. Impact of epidemic type A influenza in a defined adult population. Am J Epidemiol 1980;112:798-811.

9 Glezen WP. Serious morbidity and mortality associated with influenza epidemics [Review]. Epidemiol Rev 1982;4:25-44.

10 Feikin DR, Schuchat A, Kolszak M, et al. Mortality from invasive pneumococcal pneumonia in the era of antibiotic resistance, 1995-1997. AJPH 2000;90:223-9.

11 CDC. Prevention of pneumococcal disease: Recommendations of the Advisory Committee on Immunization Practices. MMWR 1997;46(RR-8):1-24.

12 . CDC. Active Bacterial Core Surveillance (ABCs) Report Emerging Infections Control Network: Streptococcus pneumoniae, 1998. **http://www.cdc.gov/ncidod/dbmd/abcs/survreports.htm**

13 Quick RE, Hoge CW, Hamilton DJ, Whitney CJ, Borges M, Kobayashi JM. Underutilization of pneumococcal vaccine in nursing homes in Washington State: report of a serotype-specific outbreak and a survey. Am J Med 1993;94:149-52.

[14] CDC. Outbreaks of pneumococcal pneumonia among unvaccinated residents in chronic-care facilities–Massachusetts, October 1995, Oklahoma, February 1996, and Maryland, May-June 1996. MMWR 1997;46:60-2.

[15] U.S. Department of Health and Human Services. Healthy people 2010: conference edition–Volume 1. Washington, DC: US Department of Health and Human Serivces, January 2000.

[16] CDC. Influenza and pneumococcal vaccination levels among persons aged ≥ 65 years–United States, 1999. MMWR 2001;50:532-7.

[17] CDC. Missed opportunities for pneumococcal and influenza vaccination of Medicare pneumonia inpatients-12 Western States, 1995. MMWR 1997;46:919-23.

[18] Greby SM, Singleton JA, Sneller V, Strikas RA, Williams WW. Influenza and pneumococcal vaccination coverage in nursing homes. U.S. 1995 [abstract] In: Abstracts from the 32nd National Immunization Conference, Atlanta, Georgia. 1998.

[19] AR Buikema, JA Singleton, VP Sneller, RA Strikas. Influenza and pneumococcal vaccination in nursing homes, U.S., 1995-1999 [abstract] In: Abstracts from the 35th National Immunization Conference, Atlanta, Georgia. 2001.

[20] AR Buikema, JA Singleton, VP Sneller, RA Strikas. Influenza and pneumococcal vaccination in nursing homes, U.S., 1997 presented at the International Conference on Nosocomial and Healthcare-Associated Infections, March 8, 2000.

[21] Task Force on Community Preventive Services, and the Vaccine Preventable Disease Chapter Development Team. Reviews of evidence: Interventions to improve vaccination coverage in children, adolescents, and adults. Am J of Prev Medicine 2000;18(supp):92-140.

[22] Health Care Financing Administration. Evidence report and evidence-based recommendations: interventions that increase the utilization of Medicare-funded preventive service for persons age 65 and older. Baltimore, MD: US Department of Health and Human Services, Health Care Financing Administration, October 1999, HCFA publication no. HCFA-02151.

[23] Klein RS, Adachi, N. An effective hospital-based pneumococcal immunization program. Arch Intern Med 1986;146:327-9.

[24] Morton MR, Spruill WJ, Cooper JW. Pharmacist impact on pneumococcal vaccination rates in long-term care facilities (letter). Am J. Hosp Pharm 1988;45:73.

[25] Crouse BJ, Nichol K, Peterson DC, Grimm MB. Hospital-based strategies for improving influenza vaccination rates. J Fam Prac 1994;38:258-61.