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Pneumococcal Vaccine: A Preventive Care Winner

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Streptococcus pneumoniae is the leading cause of vaccine-preventable disease in this country and is responsible for more cases of severe illness and death than all childhood vaccine-preventable diseases combined. It is estimated to cause 3000 cases of meningitis, 50,000 cases of bacteremia, and 500,000 cases of pneumonia annually, with approximately 40,000 deaths each year from the most severe infections.^{1,2} The incidence of pneumococcal disease is highest among the very young and the elderly, increasing steeply in those older than 65 years. The emergence of drug-resistant strains of pneumococcus, with incidences of up to 30 percent of isolates in some parts of the country, has made therapy for pneumococcal illnesses increasingly difficult.^{3,4} Fortunately, the currently licensed 23-valent pneumococcal vaccine is effective in preventing invasive disease and has an overall efficacy in the range of 60 percent.⁵ A recent epidemiologic study estimated that in the elderly immunocompetent patient vaccine efficacy was 75 percent and the duration of protection was

at least 5 to 10 years.⁶ Thus the current recommendation by the Advisory Committee on Immunization Practices is that high-risk patients, including all persons older than 65 years of age, receive one dose of vaccine.⁷

Despite these recommendations, national cumulative vaccine coverage levels are estimated to be only 28 percent for pneumococcal vaccine, whereas the annual coverage rate for influenza vaccine has reached 50 percent.⁸ The disparity in these rates is puzzling, because pneumococcal vaccine is administered as a onetime dose, and success in achieving high levels of coverage is not dependent upon annual season-specific revaccination as with influenza vaccine. One probable barrier to achieving high rates of vaccination is the uncertainty that providers feel about the patient's history of vaccination. Because only one dose of vaccine is recommended, some physicians might be concerned about administering a second dose unnecessarily. Although a second dose is recommended for immunocompromised high-risk patients 5 years after the first dose,⁷ there is currently no recommendation that a second dose be administered to persons older than 65 years, because there is no convincing evidence of efficacy in this population. The incidence of adverse reactions to a second dose of this polysaccharide vaccine, however, has been found to be no greater than to the first dose.^{7,9}

In this issue of the *Journal*, Elangovan, Kallail, and Vargo¹⁰ report the results of a 3-month educational campaign targeting all patients aged 65 or more who were visiting a university ambulatory care clinic. If the chart had no record of the patient receiving pneumococcal vaccine, the patient was asked about previous vaccination, and those who were confirmed not to have received the vaccine were provided educational literature and the opportunity to have questions answered by a nurse. If the patients consented to receiving the vaccine, the chart was flagged. Fifty-four percent of the study patients had previously received the vaccine; of the remaining group, 54 percent were vaccinated at the study visit, which increased the level of coverage of this cohort of patients to 79 percent.

This study has several major implications for national efforts to achieve higher pneumococcal vaccination rates. First, more than one half of the target population in this primary care clinic had

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already received the vaccine. This baseline rate, which is twice the estimated national level, implies that the clinic provider team was convinced of the value of the vaccine and had already instituted a reasonably successful system of vaccinating its patient population. The study added two important elements to the existing clinic care system: evaluating the vaccine status of all elderly patients visiting through a combination of record review and history with the intention of vaccinating all those who had not previously received it, and providing a simple educational program for those who had not yet received the vaccine. Only 38 percent of this group had previously known about the vaccine but had chosen not to receive it; one half was subsequently convinced to receive the vaccine at the study visit.

The lesson to be learned with this successful effort is that the primary care ambulatory setting is ideal for successful pneumococcal vaccine programs. Continuity of care and availability of medical records permit an accurate determination of vaccine status, which can be corroborated by medical history, and thus help resolve the issue of unnecessary revaccination. Once the provider team adopts the goal of providing vaccine to all patients who need it, all charts of unvaccinated patients can be flagged, and those patients can be vaccinated during a routine visit. Educational efforts can be successfully targeted to the unvaccinated individuals with the expectation of an excellent success rate in vaccinating these individuals during the same visit. One of the most successful reported influenza vaccine administration programs is a private-practice-based countywide campaign in Monroe County, NY. Using a target-based model, practitioners approached all patients aged 65 years and older, and achieved a 62 percent annual influenza vaccine coverage rate.¹¹ Combine this convincing success with that described by the current study, and we can conclude that family physicians and all other primary care providers who make pneumococcal vaccine cov-

erage a priority can achieve high levels of vaccination in their vulnerable older patients. This population, with Part B Medicare coverage, has the closest thing to universal medical coverage in the country, so inability to pay is not an important barrier. Let's get to work and vaccinate the elderly. This one is a winner.

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