

ID CONSULT

Physician, Vaccinate Thyself

As physicians who care for children, it's easy for us to become so focused on vaccinating the children in our practices that we neglect our own immunizations. But it's critically important to get vaccinated, not only for our own sakes but for the sake of our patients.

There have been several additions to the adult immunization schedule in the last few years, so I thought it would be useful to review the ones that pediatricians should consider for themselves, and also consider offering to the parents and other caregivers of our pediatric patients:

► **Tetanus-diphtheria-acellular pertussis.**

Most physicians are aware that we're now seeing a resurgence of pertussis around the country. The focus has been on California, but there are other pockets as well that have not received as much attention, including recent outbreaks in Ohio and Michigan. But pertussis is also endemic in the United States, so that although we tend to see peaks every 3 years or so, there is no year when it isn't circulating. Most pediatricians also are aware of and endorse the concept of "cocooning" newborns younger than 6 months of age who have not yet received all three doses of DTaP by vaccinating all the people around the infant, including parents, siblings, grandparents, babysitters, child care providers, and yes, physicians who care for children.

The Tdap vaccine is the adolescent-adult formulation containing the same amount of tetanus and diphtheria as the Td vaccine but with lower amounts of pertussis antigen than the pediatric DTaP. The Centers for Disease Control and Prevention recommends Tdap for adults of any age who have not previously received it (including those aged 65 and older) who are in contact with infants younger than age 12 months, and for health care personnel of all ages, including doctors. Last fall, the CDC removed the 2-year interval requirement, so that now Tdap can be given regardless of the interval since the previous Td. After an adult receives one dose of Tdap, a booster of Td should be given every 10 years thereafter.

I recently asked 10 pediatricians if they had received the Tdap, and 8 said no. They ranged in age from those just out of residency to 68 years. Reasons included simply not getting around to it, thinking they didn't

need it, or believing that they were already protected from the DTaP they received in childhood. In fact, immunity against pertussis wanes, and DTwP (whole-cell pertussis) and DTaP vaccines don't last forever, which is part of the reason we're seeing these outbreaks.

► **Influenza.** I meet physicians all the time who tell me they haven't received a flu shot. Older physicians sometimes will cite the fear of Guillain-Barré syndrome that initially arose with the 1976 swine flu vaccine debacle. That fear never really went away, and was reignited with the 2009 vaccine that was rapidly manufactured against pandemic H1N1. Many people, including some physicians, fear that the vaccine was not tested sufficiently before it was brought to market during the pandemic. Of course, most of these same physicians do immunize their patients with the vaccine.

The other reason I hear from physicians for not getting the flu vaccine is the mistaken belief that their immune system is strong enough to resist influenza. Although it may be true that as a group, physicians who see sick people all day long are more resistant to viral infections than is the general population, some still may be susceptible. And those who do contract influenza will be contagious for a few days before symptoms appear, even with the use of antivirals.

► **Pneumococcus.** Currently, the only pneumococcal vaccine recommended for adults is the 23-valent polysaccharide vaccine (Pneumovax). It is recommended for everyone aged 65 and older, and for people younger than 65 years who have chronic illness or other risk factors, including chronic cardiac or pulmonary disease (including asthma), chronic liver disease, alcoholism, diabetes, cerebrospinal fluid leaks, and cigarette smoking, as well as candidates for or recipients of cochlear implants and people living in special environments or social settings (including American Indian/Alaska Natives aged 50-64 years if vaccination is recommended by local public health authorities). Certainly, physicians can fall into most of these groups (although we hope not the smoking category).

But stay tuned for the 13-valent conjugate pneumococcal vaccine to be licensed and recommended for

adults aged 50 and older. In December 2010, Pfizer announced that it submitted supplemental applications to both the U.S. Food and Drug Administration and the European Medicines Agency (EMA) to expand the use of Prevnar 13 to adults aged 50 years and older for the prevention of pneumococcal disease caused by the 13 serotypes contained in the vaccine. The FDA is expected to respond in October 2011.

Routine use of the 7-valent pneumococcal conjugate vaccine in infants beginning 11 years ago prevented an estimated 211,000 serious pneumococcal infections and 13,000 deaths during 2000-2008, including those among both children and adults. The switch to PCV13 in 2010 is expected to further reduce disease by covering those extra six strains, particularly 19A. The vaccination of adults aged 50 and older will expand that protection. Once PCV13 is approved for adults aged 50 and older, physicians in that age range should get the vaccine.

► **Human Papillomavirus.** Recommended for all previously unvaccinated women through age 26 years, Gardasil or Cervarix should be considered by all young female physicians. Moreover, although not a strict recommendation, Gardasil (but not Cervarix) is also suggested for men through age 26 years in order to reduce the likelihood of acquiring genital warts. The risk is particularly increased among men who have sex with men. There are physicians who fall into the above categories.

► **Zoster.** The zoster vaccine (Zostavax) is recommended for the prevention of shingles in all adults aged 60 years and older, including physicians.

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MICHAEL E. PICHICHERO, M.D.

DR. PICHICHERO, a specialist in pediatric infectious diseases, is director of the Rochester (N.Y.) General Research Institute. He disclosed that he has served as a consultant from time to time for Sanofi Pasteur, GlaxoSmithKline, Pfizer, Merck, and Novartis; he said he donates honoraria to charity. The institution where he works has received research funding from Sanofi Pasteur, GlaxoSmithKline, Pfizer, Merck, and Novartis. He said he does not hold a financial interest in any of the vaccine companies. He is the inventor of a new vaccine for pneumococcal infections that cause ear infections in children, and Sanofi Pasteur is the assignee of a patent that has been filed for that discovery.

Bacterial Meningitis Incidence Fell 30% During 1998-2007

BY MARY ANN MOON

FROM THE NEW ENGLAND JOURNAL OF MEDICINE

Rates of bacterial meningitis dropped markedly among all age groups in the United States during the past decade but have declined most strikingly in children.

This trend is probably the result of the success of pneumococcal and Hib conjugate vaccines in preventing these infections in early childhood. The epidemiology of bacterial meningitis has shifted, with the most obvious change being the increase in the average patient age at diagnosis, according to Dr. Michael C. Thigpen of the Centers for Disease Control and Prevention, Atlanta, and his associates.

The investigators tracked changes in the epidemiology of bacterial meningitis cases from 1998 through 2007 using data from two surveillance systems, one laboratory based and the other popula-

tion based, in the CDC's Emerging Infections Program network. The network covered approximately 17.4 million people residing in eight regions of the country during the study period.

The researchers identified 3,188 cases of bacterial meningitis resulting from the five most common causative organisms: *Haemophilus influenzae*, *Streptococcus pneumoniae*, *Neisseria meningitidis*, group B streptococcus, or *Listeria monocytogenes*. The overall fatality rate was 15%.

The overall incidence of these infections declined from 2.00 cases per 100,000 people to 1.38 per 100,000 – approximately 30%. Rates of meningitis declined most dramatically among children, probably because of the introduction of the PCV7 vaccine. This decline correlated with a rise in the median age of bacterial meningitis patients, from about 30 years to 42 years.

The incidence of bacterial meningitis also declined among adults aged 65 and older and may decline further in this age

group because of reduced exposure as more "children are vaccinated with the newly licensed PCV13," Dr. Thigpen and his colleagues said (N. Engl. J. Med. 2011;364:2016-25).

Nevertheless, the case fatality rate did not change significantly. It was 15.7% in 1998 and 14.3% in 2007.

Although the epidemiology of bacterial meningitis has changed, the ranking of causative organisms has not. "For clinicians, [this suggests] that current treatment guidelines ... targeting the major pathogenic causes are still appropriate." *S. pneumoniae* was the most common causative pathogen among adults and children aged 1-11 years. Group B strep accounted for most cases among infants, and that rate did not decrease.

The rate of *N. meningitidis* infection decreased, but that organism still accounted for most cases of bacterial meningitis that developed in adolescents. "As the proportion of children receiving MCV4 continues to increase, we expect

additional reductions in the incidence of meningococcal disease," they said.

This study probably underestimates the true burden of bacterial meningitis for three main reasons.

First, the databases only included culture-proven cases, and the accuracy of that identification "depends on the diagnostic and therapeutic practices of those caring for patients," they said.

Second, the databases did not cover all the possible pathogens that cause bacterial meningitis, such as *Escherichia coli* and some species of staph.

Third, the databases do not routinely collect information on cases acquired in health care settings, "which may account for up to 40% of cases," Dr. Thigpen and his associates said.

The study was supported by the Centers for Disease Control and Prevention. Some of Dr. Thigpen's associates reported financial ties to Merck, Wyeth, Sanofi Pasteur, Novartis, GlaxoSmithKline, and Pfizer. ■