

Adult Immunization Should Be Routine, Too

The widespread and successful implementation of childhood immunization programs in this country has reduced the occurrence of many vaccine-preventable diseases to record low levels. It should not be assumed, however, as some physicians and a great many patients have, that our success in protecting children has made the immunization of adults unnecessary. On the contrary, a substantial proportion of the morbidity and mortality from vaccine-preventable diseases that we are seeing today occurs among older adolescents, adults, and the elderly. Many of those infected by a vaccine-preventable disease either escaped natural infection early in life or were not immunized against it in childhood. Others should have been immunized (but were not) because of their special health conditions, occupations, behavior, or increasing age.

We are concerned, here, with seven diseases. They are influenza, pneumococcal disease, hepatitis B, tetanus, diphtheria, measles, and rubella. As a general rule, every visit by an adult to a health care provider should be viewed as an opportunity to provide the protection of immunization. Before a patient is immunized, however, several factors must be considered—the susceptibility of the patient to the disease, the risk of exposure, the risk from the disease, and the benefits and risks from the immunizing agent. Obviously, very detailed information and a systematic approach to immunization are necessary to insure that adults are appropriately protected.

Influenza and pneumonia. Influenza control remains one of the more complex issues that public health authorities face. Control problems can be attributed, in large part, to the unpredictable appearances of new strains of the virus and to the fact that each strain can vary in its impact. Moreover, health care providers and the public tend to underestimate both the severity of an influenza strain and the benefits that can be achieved by timely immunization.

Influenza should never be underestimated. Influenza and pneumococcal infections pose particular problems for the very people who are least able to

cope with illness—the elderly and those with chronic heart or lung diseases. Influenza can cause major epidemics of respiratory disease, as we see nearly every winter, and it is responsible for thousands of excess deaths in the elderly and chronically ill populations. More than 80 percent of the excess deaths attributed to flu epidemics occur among persons 65 years of age or older. Attack rates during outbreaks in nursing homes are as high as 60 percent, with fatality rates of 30 percent or higher. In the years from 1957 to 1984, more than 10,000 deaths were associated with influenza epidemics.

Pneumococcal infections, as I have noted, are important causes of severe illness and death in the same groups threatened by influenza. About a half million cases of pneumococcal disease are estimated to occur annually in the United States. The case rate increases with age, and the fatality rate among those 60 years of age and older is 25 to 35 percent.

Safe and effective vaccines are available for both influenza and pneumonia. Appropriately used, these vaccines could prevent literally thousands of deaths each year. Unfortunately, available data indicate that very few adults in the target populations are immunized. In most years, only about one-half of the flu vaccine distributed in this country is administered to high-risk persons.

This is not to say that immunization programs are inherently ineffective. In 1986, we had an opportunity to respond to the detection of a new influenza virus variant after the normal vaccine production for that year had been completed. We faced the following issues: (a) opinion varied widely on the likely impact of the variant, A/Taiwan, on the health of the elderly, (b) manufacturers had very little time to gear up for the production and distribution of a new vaccine, and (c) we recognized that we would have to introduce and distribute the new vaccine in a way that would not divert attention away from the use of the primary (trivalent) vaccine that had been developed for that year.

Thanks to very close cooperation between the Public Health Service and vaccine manufacturers,

many millions of doses of supplemental vaccine were made and distributed *prior* to the occurrence of A/Taiwan outbreaks in most parts of the country. While there were, no doubt, shortages of this vaccine in some locales, production of the A/Taiwan vaccine almost certainly protected several million persons, especially high-risk persons under the age of 35, against Taiwan flu. We in the Public Health Service are proud of this national achievement.

Hepatitis B. Young and apparently healthy American adults also are at risk of being unprotected against a very dangerous but vaccine-preventable disease, hepatitis B. About 85 percent of all hepatitis B cases occur in persons 20 years of age or older. The Centers for Disease Control of the Public Health Service estimates that 180,000 or more cases of hepatitis B occur in adults in the United States each year and that more than 1 million people are chronic carriers of the virus in the United States.

About one-fourth of these chronic carriers can be expected to die of chronic hepatitis, cirrhosis of the liver, or liver cancer. Groups at greatest risk of acquiring hepatitis B are homosexually active males and users of intravenously injected drugs. Health care personnel also are at risk, simply because they care for people who have the illness. Unfortunately, data indicate that no more than 20 percent of the people in these high-risk groups have received hepatitis B vaccine. A fear of AIDS may be contributing to the sparse use of the vaccine, but such fears are unfounded. Physicians and other health care providers cannot stress that fact too strongly. Studies have clearly shown that hepatitis B vaccine does not contain the AIDS virus.

Tetanus and diphtheria. Even with the best of medical care, a victim of tetanus has only a 50 percent chance of surviving. More than 90 percent of all the tetanus cases and deaths in the United States occur in people 20 years of age or older. Obviously, everyone, regardless of age, needs to be vaccinated.

Years ago, diphtheria deaths were a part of everyday life. The disease is rarely seen today, but it does occur, like tetanus, in people who have not been immunized against it. And 1 out of every 10 people who get it will die from it. Deaths from tetanus and diphtheria are especially tragic because

both diseases are so easily prevented with the combined tetanus and diphtheria ("Td") vaccine.

Measles and rubella. Even though measles and rubella are at record low levels in this country, young adults who did not have these diseases when they were children or who somehow missed immunization are now at risk of catching them. About 5 to 20 percent of all young adults are susceptible to these diseases today.

Rubella is usually a mild disease in adults, but when a pregnant woman catches it during the first trimester of her pregnancy, her baby can have serious birth defects or even die. It is estimated that as many as 7 million women of childbearing age are susceptible to rubella.

Measles can be serious, too. It is estimated that as many as 5 million young adults ages 18 to 29 years may be susceptible to measles, and outbreaks continue to occur on college campuses. In a college outbreak in Illinois in 1985, three students died—a tragic reminder that measles is not to be taken lightly. Every young adult who is susceptible to measles or rubella, or both, should be immunized.

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In general, immunization policies have been directed towards the protection of infants, children, and adolescents. While immunization has become a routine measure in pediatric practice, it is rarely routine in the practices of physicians who treat adults.

The success that childhood immunization programs have enjoyed has substantially reduced the occurrence of many vaccine-preventable diseases. But childhood immunization alone cannot be expected to eliminate these diseases. As we have seen, a great proportion of the remaining morbidity and mortality from vaccine-preventable diseases occurs today in older adolescents and adults—in persons who either escaped natural infection and the immunity it confers or who, quite simply, were never immunized.

If we are to further reduce the unnecessary occurrence of these vaccine-preventable diseases, everyone who provides health care for older adolescents and adults must make immunizations a routine part of his practice. Recommendations to

that effect, and immunization schedules, have been published by the Public Health Service's Centers for Disease Control and by the American College of Physicians. It remains, now, for health professionals and knowledgeable citizens to spread the word about immunization: it's not just for chil-

dren. Adults, too, need the protection that only immunization can afford.

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LETTERS TO THE EDITOR

Injury Prevention for Indians: Was the Assessment Too Early?

Dr. Leon Robertson's article "Community Injury Control Programs of the Indian Health Service: an Early Assessment" (*Public Health Reports*, November-December 1986) unfortunately raises many more questions than it answers. I am cognizant of the journal's space limitations; however, a number of these questions could have been answered by a more detailed report. Of particular import are the age characteristics of the populations studied, given the inevitable variation of injury type and frequency at different ages that Dr. Robertson only alludes to in passing.

Specifics are similarly lacking relative to the intervention programs, causing the reader to speculate on what was done and whether there was a proper match of injury prevention efforts with the populations at primary risk for those injuries. The rationale for even comparing such seemingly unrelated variables as fire safety training and attempted suicide is not elucidated.

The applicability of the data presented to the overall population of interest is also subject to question, since data were "unavailable" from service units representing 349,000 inhabitants. There is no indication of the degree to which this group is comparable to the 570,300 from service units providing data, nor is there an explanation of why data were not obtainable from such a large proportion of the population. While the outpatient coding problems noted by the author can be appreciated, an effort to evaluate injury victims seen on an outpatient basis in addition to those requiring hospitalization also seems an appropriate precursor to any community intervention program.

Given the aforementioned limitations, and, with the exception of fall injuries, the apparent lack of meaningful associations between preventive efforts and injury reduction, one can only speculate as to the efficacy of the intervention program as described. Without doubt, injuries among Native Americans are a problem deserving of both further study and effective preventive

initiatives. Hopefully, the program presented by Robertson represents one of these initiatives, although it may be that the "early assessment" was in fact premature.

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Reply: The Critic Overreaches

Professor Maetz is correct that much more detail on my research into the Community Injury Control Programs of the Indian Health Service would have been desirable, but such is impossible in a journal-length article. The full 102-page report is available for the cost of photocopying it.

However, Professor Maetz overreaches in his criticism. Surely he does not believe that a 4-year shift of 41 percent in motor vehicle hospitalization rates and a 35 percent change in hospitalizations for falls and assaults were primarily from changes in the age distributions, which were minimal.

As to the lack of data from all of the service units, surely it is legitimate to compare the effects of the different programs in the 54 service units studied. Was John Snow's research on cholera "premature" because he did not study every town in England?

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