

"Are Your Family's Vaccines Up-to-date?"

Part 1 of a 2 part series: Childhood Vaccines – What's New?

By Margaret Trexler Hessen, M.D., specialist in infectious diseases & member of the Delaware County Medical Society

Recently several schools in the area have noted cases of chickenpox among their students, and the school medical departments have sent home notes recommending an update on varicella (chickenpox) vaccine. "But my child had Chickenpox vaccine," you say. The catch here is the fact that a second dose, making a series of two doses for children and adolescents, was recently recommended by the CDC (Centers for Disease Control and Prevention) based on recommendations by the ACIP (Advisory Committee on Immunization Practices). As this recommendation was made official only a few months ago, most children have not yet had a second dose and may not be fully protected against this disease.

It is not unusual, when a vaccine is relatively new, to "discover" the need for booster doses as more long-term experience is gained over the lifetime of the early recipients. Although chickenpox is usually considered to be more of a nuisance than a health threat in young children, it can rarely be complicated by severe bacterial infection of the viral lesions, blood clotting disorders, and encephalitis. It can cause severe—even fatal—illness in previously healthy adults and in people with weakened immune systems. It's worth a second dose to prevent illness years down the road when the child of 2007 is an incompletely protected adult at risk for severe disease from an accidental exposure to someone with chickenpox.

Broader application of another well-established vaccine, that against Hepatitis A, has also been added to the routine vaccination schedule.

Hepatitis A is a highly contagious viral infection of the liver that is transmitted by fecal contamination of food and water. It is usually mild in children, and may even pass unnoticed. However, in older people and in pregnant women it can be severe, even life-threatening. This vaccine used to be given only in situations in which exposure to Hepatitis A had recently

occurred (e.g. an outbreak) or when increased risk of exposure was anticipated (e.g. travel to under-developed countries).

Starting in 1996, the recommendations were expanded to include routine immunization of children living in communities with high rates of the disease. In 2006, the ACIP recommended that all children in the United States receive Hepatitis A vaccine in the hope of eradicating the disease from the United States. This immunization is given as a series of 2 doses, the first to be given at 12 months of age.

Influenza vaccine, which must be renewed each year, is now recommended for all children under the age of 5 years (previously 2 years), in addition to children of all ages with certain health conditions. Two doses are required for the initial injectable immunization; yearly boosters are given in a single dose.

Other changes in the newest vaccine guidelines for children and adolescents include the addition of two new immunizations, preventive against rotavirus infections and human papilloma virus (HPV). Rotavirus infection is a common cause of gastroenteritis (vomiting and diarrhea) in infants. Although it is usually not severe, it can occasionally cause severe dehydration requiring hospitalization; indeed it is one of the more common causes of hospitalization in infants. A new vaccine has been licensed recently, and a series of 3 doses is recommended for children from 2-6 months old.

Human papillomavirus is a sexually transmitted virus that causes venereal warts and, much more importantly, cervical cancer after long-term infection. A vaccine has been developed that protects against infection with the most prevalent strains of this virus. This immunization, administered in a series of 3 doses over 6 months, is recommended for adolescent girls starting at age 11. The idea is to vaccinate early enough to prevent HPV in sexually active teenagers and adult women, with the ultimate goal of preventing cervical cancer later in life.

As noted, the immunizations above are additions to the previous standard regimen which includes the following vaccines: MMR (measles/mumps/rubella), IPV (polio), DTaP (diphtheria, tetanus, acellular pertussis), Hib (Hemophilus influenzae), pneumococcus, Hepatitis B, and meningococcal meningitis. Significant side effects of all of these vaccines are rare, but do occur.

In each case, your child's doctor can evaluate the need for these vaccines based on your child's age, health status, previous response to vaccines, etc., and can advise you as to the potential risks and benefits for your child. It's wise to review vaccine status on a yearly basis during childhood in order to keep your child up to date on older vaccines that require periodic boosters, and to take advantage of new vaccines or new recommendations for older immunizations as they are made.

Part II

Part 2- Adult Immunizations

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Periodically the Advisory Committee on Immunization Practices (ACIP), a body of internationally recognized experts on vaccine use, evaluates new vaccines and new information on older vaccines. Their recommendations form the basis for guidelines published by the Centers for Disease Control and Prevention (CDC). Recently this column focused on new immunizations and updated recommendations for older vaccines in children and adolescents. Some of the new vaccines apply to adults as well, and this column will outline those applications and other new recommendations based primarily on the ACIP/CDC revisions of October 2006.

The new vaccines of note are those for human papilloma virus (HPV) and for shingles. The HPV vaccine, recently licensed and recommended in girls and women ages 11-26, is designed to prevent infection with the sexually transmitted virus that causes one form of venereal warts and, after long-

term infection, cervical cancer. The goals are to prevent both infection and cervical cancer. The vaccine is administered as a series of 3 shots over 6 months.

The other new vaccine for adults is designed to prevent shingles and its complications. Shingles is a painful blistering rash caused by reactivation of chickenpox (varicella) virus, which lives in a dormant condition in the nerve roots of all who have had chickenpox. It occurs most often in the elderly, long after the original chickenpox infection, as immunity declines. One of the main hazards of shingles, apart from the pain and annoyance of the rash itself, is the fact that it can cause continued severe pain even after the rash itself has healed. It can also cause blindness if the eye is involved. The vaccine has been approved by the Food and Drug Administration for use in people over the age of 60. Official CDC recommendations are pending.

Some modifications have been made in the use of older vaccines as well. It has been found that some vaccines do not generate life-long immunity.

This was discovered in the 1980s when measles outbreaks arose and involved many people previously vaccinated. As a result, it was recommended that a second dose of measles vaccine be given. This is now a part of the standard childhood schedule and is required for school attendance in many states. Recently, for similar reasons, a third dose of varicella (chickenpox) vaccine was recommended for children and adolescents (but not yet for adults). Recent outbreaks of mumps in the Midwest have now prompted the CDC to recommend a second dose of that vaccine for adults who have not had mumps or who have received only a single dose of vaccine. There is also a new recommendations for a booster against whooping cough (pertussis) with a new formula of vaccine.. This disease has begun appearing in adults as their immunity from childhood vaccine wears off. The new "acellular" formula is much safer in adults than the older vaccine given in childhood, which, when given to adults, could cause severe reactions and therefore was not recommended past childhood. It is usually given combined with a tetanus

or tetanus/diphtheria booster. Those adults who have not had these vaccines (or the diseases) should consider the full vaccine series.

Lastly, of course, it should be mentioned that the formula and recommendations for influenza vaccine are updated yearly. New recommendations this year include the addition of adults who have close contact with children under the age of 5 years. Because these children have a high rate of complications from influenza, every effort should be made to prevent transmission of the flu to them by family and other close associates.

It should be noted that these are general recommendations for healthy people. Pregnancy, a compromised immune system, or the presence of certain other medical conditions may make it inadvisable to receive some of these vaccines. Likewise, unusual circumstances may dictate the need for “non-routine” immunizations depending for example, on exposures related to the workplace, to foreign travel, etc. . Your doctor can review your immunization and health records and advise you of the risks and benefits in your individual circumstances, as well as the potential side effects of any vaccines.

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