



VFC and Adolescent Providers

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If you would like to suggest future topics or articles please contact the ImmuneNews Editor at (614) 466-4643.



Since 2005, the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP) has made numerous new adolescent vaccine recommendations regarding tetanus, diphtheria, pertussis, meningococcal disease and human papillomavirus. Currently, the ACIP recommends all adolescents be routinely vaccinated with a booster dose of Tdap (tetanus toxoid, diphtheria toxoid and acellular pertussis), one dose of MCV4 (meningococcal conjugate vaccine) as well as three doses of HPV (human papillomavirus) vaccine for girls. Adolescents over the age of 12 who have not received one or more of these, or other recommended childhood immunizations, should be vaccinated according to the CDC's catch-up immunization schedule. The *Healthy People 2010* objective for adolescent immunizations is to achieve 90 percent or higher vaccination coverage for adolescents aged 13-15.¹ To help meet this goal, the Ohio Department of Health's (ODH) Immunization Program is expanding its Vaccines for Children (VFC) program and is actively recruiting providers who see adolescent patients in a variety of settings.

Immunizing adolescents is a crucial step in protecting young adults from vaccine-preventable diseases and preventing the spread of these diseases to others. In 2004, the CDC found 34 percent of reported pertussis cases in the United States occurred among adolescents aged 11-18, the highest rate of all age groups.² Immunity to pertussis wanes 5 to 10 years after completion of childhood pertussis vaccination and the disease is highly communicable with an 80 to 90 percent infection rate among household and other close contacts.² Immunizing adolescents against pertussis will minimize spread of the disease to classmates and household members, including infants who may not be fully immunized and are susceptible to severe complications.

Two Tdap vaccines have been licensed in the United States – BOOSTRIX®, GlaxoSmithKline, for persons aged 10-18 and ADACEL®, sanofi pasteur, for persons aged 11-64.

According to the CDC, the most common sexually transmitted disease in the United States is HPV, with 6.2 million new infections occurring every year.³ The majority of these cases, 74 percent, occur in persons aged 15-24. Quadrivalent HPV vaccine protects against four of the more than 100 HPV strains – HPV 6, 11, 16 and 18. Strains 6 and 11 are the cause of approximately 90 percent of genital warts cases and strains 16 and 18 are the cause of approximately 70 percent of all cervical cancers. It is estimated that treatment of HPV infections costs \$4 billion per year in the United States. The only licensed HPV vaccine at this time is GARDASIL®, Merck and Co., for females aged 9-26.

Neisseria meningitidis is recognized by the CDC as the leading cause of bacterial meningitis and sepsis in the United States.⁴ While meningococcal disease occurrence is relatively infrequent, 10 to 14 percent of cases result in death and 11 to 19 percent of survivors experience serious long-term effects, including neurological disability, limb loss and hearing loss. The highest occurrence of meningococcal disease is in children ages 2 and younger; however, 62 percent of all cases occur in persons age 11 and older. Menactra, manufactured by sanofi pasteur, is the recommended MCV4 vaccine for persons aged 2-55.

In 2006, the CDC released NIS-Teen, a National Immunization Survey (NIS) collecting immunization rates for teens aged 13-17.⁵ The results of NIS-Teen indicate the *Healthy People 2010* objective for adolescent immunizations is not being met for any

VFC and Adolescent Providers Continued

of the investigated vaccines. Tdap coverage among adolescents who reached the age of 13 in 2006 was only 41.7 percent and decreased to 5.1 percent for 17-year-olds; overall, Td coverage in the 13 to 17-year-olds was 49 percent.⁴ The MCV4 vaccination rate for 13 to 17-year-olds was 11.7 percent; 15-year-olds had the highest rate at 13.9 percent. Overall coverage rates for three or more doses of hepatitis B and two or more doses of MMR were much higher, 84.3 percent and 88.5 percent, respectively, for ages 13-15, but still below the *Healthy People 2010* target of 90 percent or higher. HPV vaccination rates were not included in the study.

The CDC considers achieving *Healthy People 2010* adolescent immunization objectives of utmost importance and recognizes



the challenges associated with increasing vaccine coverage for this age group.⁶ Adolescents are widely recognized as a medically underserved population and are the least likely of any age group, nationally, to seek health care services.⁷ Barriers to health care include a broad range of factors, including cost, embarrassment, limited access to providers, lack of information about routine health care, concerns about confidentiality and parental consent. A study of young adults aged 11 to 21 found that only 9 percent of adolescent outpatient visits from 1994-2003 were for preventive health care.⁸

In response to low adolescent vaccination and preventive health care rates, the CDC is expanding the Vaccines for Children (VFC) program to enroll non-traditional health care providers who treat adolescents.⁶ These include, but are not limited to, family planning clinics, OB/GYN practices and sports medicine practices. Health care providers for adolescents will be able to administer all age-appropriate vaccines, including the hepatitis A and B vaccines. Increasing the numbers and types of health care providers enrolled in the VFC program will give VFC-eligible

adolescents the opportunity to receive recommended vaccines at no charge and therefore, protection against life-threatening diseases.

ODH is actively enrolling new health care providers for the Adolescent VFC program. ODH encourages all providers who treat Medicaid-eligible and uninsured adolescents to enroll in the VFC program, which provides vaccines to providers at no cost. Practitioners who want to learn more about adolescent vaccines and the Adolescent VFC program should call the ODH Immunization Program at 1-800-282-0546 for additional information.

Resources

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Pertussis – Testing, Treating and Reporting

Pertussis, also commonly known as whooping cough, is an acute infectious disease caused by the bacterium *Bordetella pertussis*.¹ Pertussis transmission most commonly occurs via the respiratory route, is spread by direct contact with the discharges from the nose and throat of infected individuals and is highly communicable. The cases of pertussis have been gradually increasing since the early 1980s, with nearly 26,000 cases reported nationwide in 2004.



According to the American Academy of Pediatrics, neither infection nor a full childhood series of DTaP immunization will provide lifelong immunity.

The clinical course of pertussis is divided into three stages, the catarrhal stage, the paroxysmal stage and the convalescent stage. Infected individuals are most contagious during the catarrhal stage and the first two weeks of the paroxysmal stage. The symptoms characteristic of the catarrhal stage include a runny nose, low-grade fever and mild cough. The paroxysmal stage typically lasts from one to six weeks and is characterized by burst of rapid coughs usually accompanied by a characteristic high-pitched whoop. The attack can lead to vomiting and apneic events.

Due to the high communicability rate and possibly severe complications to infants and the elderly, it is important that when practitioners suspect a patient has pertussis that they test, treat and report according to national recommendations and Ohio state law.

Testing for Pertussis

Culture

Culture is considered the “gold standard” for laboratory diagnosis of pertussis. Culture requires collection of a nasopharyngeal specimen through aspiration with Dacron (polyethylene terephthalate) or calcium alginate swabs. Although culture is 100 percent specific, a negative culture does not exclude the diagnosis of pertussis. Cultures can come back negative if the patient was previously immunized, if more than three weeks has elapsed since cough onset or if antimicrobial therapy has already begun.²

Polymerase chain reaction (PCR)

PCR testing of nasopharyngeal swabs or aspirates can be a rapid, sensitive and specific method for diagnosing pertussis. However, the PCR test lacks sensitivity in previously immunized individuals and false positive results may be obtained due to contamination in the laboratory or during specimen collection. While PCR testing is becoming more widely available in Ohio laboratories, there is no Food and Drug Administration (FDA) - licensed PCR test available and there are no standardized protocols. PCR should be used in conjunction with culture.^{1,2,3}

Serologic testing

Serologic testing can be useful for adults and adolescents who present late in the course of their illness, when both culture and PCR are likely to be negative. Because serologic tests measure antibodies that could result from either exposure to pertussis or vaccination they can be hard to interpret. Serologic testing is not an FDA-approved diagnostic test and is not considered a confirmatory test of pertussis.^{1,2,3}

Pertussis Continued

Direct fluorescent antibody (DFA) testing

DFA testing of nasopharyngeal secretions may be useful as a screening test for pertussis. A positive DFA result may increase the probability that a patient has pertussis, but has a higher rate of producing both false positive and false negative results than culture. DFA is not considered a confirmatory test.^{1,2,3}

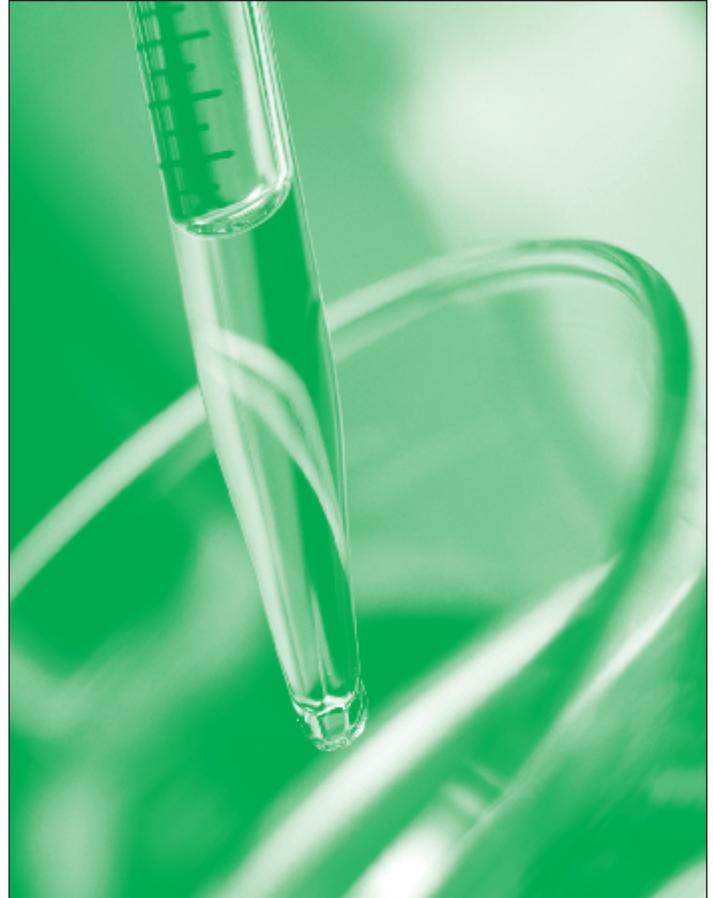
Treating and Preventing Pertussis

After the appropriate diagnostic samples have been collected, it is important to treat and prevent the spread of pertussis. Medical management of pertussis is considered primarily supportive. Antibiotics decrease the communicability of the disease and if given at early onset, may modify the course of the illness. An antibiotic effective against pertussis (such as azithromycin, erythromycin or trimethoprim-sulfamethoxazole) should be administered to all close contacts of a person with pertussis, regardless of age or vaccination status. If a child is exposed and their vaccination series is not yet complete, they should complete the series with minimal intervals. While the postexposure efficacy of Tdap is not yet known, it is not contraindicated. Providers should not wait for a close contact to develop symptoms before administering antibiotics. Prophylaxis is the key to the prevention of disease spread.

Reporting Pertussis

Pertussis is a Class A(2) reportable disease according to Ohio Administrative Code (3701-3-02 & 3701-3-13). It is a disease of public health concern needing timely response because of the potential for epidemic spread. Practitioners should report a suspected case of pertussis by the end of the next business day to their local health department (LHD). LHDs will then conduct the appropriate surveillance using the Ohio Department of Health's (ODH) Infectious Disease Control Manual and will enter the case into the Ohio Disease Reporting System (ODRS). ODRS is used to determine state and national disease incidence rates.

If you have questions regarding testing, treating or reporting pertussis, please contact your LHD or the ODH immunization information line at 1-800-282-0546.



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2. American Academy of Pediatrics. Pertussis (Whooping Cough). In: Pickering LK, Baker CJ, Long SS, McMillan JA, eds. Red Book: 2006 Report of the Committee on Infectious Disease. 27th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2006: [498 -520].
3. Manual for the Surveillance of Vaccine-Preventable Diseases, Chapter 8, Pertussis. 3rd Edition, 2002.

VIS NEWS

As required by the National Childhood Vaccine Injury Act (42 U.S.C §300aa-26), all health care providers in the United States who administer to any child or adult any vaccine shall, prior to administration of each dose of the vaccine, provide a copy to keep of the relevant current edition vaccine information materials that have been produced by the CDC.

New VIS - On Jan. 30, 2008, the CDC released a new multiple-vaccines vaccine information statement (VIS). This VIS may be used in place of individual VISs whenever routine birth through 6-month vaccines (DTaP, IPV, Hib, Hepatitis B, PCV and Rotavirus) are administered at the same visit – including combination vaccines (e.g., Pediarix or Comvax) containing those components. The multiple-vaccines VIS is four pages, instead of the usual two, and is optional. The individual VISs for these vaccines may still be used.

VIS Revisions - The interim meningococcal VIS has been updated again, this time to make it consistent with MCV4's recent licensure for children aged 2 to 10 and the ACIP's recommendations for using MCV4 with this age group.

VISs for MMR and varicella vaccines have also been revised. Both VISs have been updated to include information about MMRV (ProQuad®) [Measles, Mumps, Rubella and Varicella Virus Vaccine Live]. When giving MMRV, the new MMR and the new varicella VISs should be used. When giving MMR or varicella vaccine separately, the previously published VISs may be used until stocks are depleted.

To get the new and revised VIS forms and to make sure all of your VIS forms are up to date, go to the CDC Web site at:

<http://www.cdc.gov/vaccines/pubs/vis/default.htm>.

Vaccine Management Business Improvement Plan

On Feb. 25, 2008, the Ohio Department of Health, Immunization Program made the transition to the Vaccine Management Business Improvement Project (VMBIP), a centralized distribution for vaccines. Centralized distribution was created to streamline the ordering, distributing and management of vaccines through the Vaccines for Children (VFC) program. Through VMBIP, a single nationwide distributor, McKesson Pharmaceutical, is distributing all publicly purchased vaccine, except for varicella and ProQuad®, which will still be shipped by Merck. Ohio VFC providers will no longer receive their vaccine orders from the Ohio Department of Health (ODH). Providers should be aware that vaccine shipments from McKesson Pharmaceuticals may look slightly different than what providers are used to. Temperature monitors will be included in every vaccine shipment from McKesson. If a monitor indicates there is a problem, vaccine should be placed in appropriate storage and ODH must be contacted within two hours.

ODH will continue to receive and process provider orders internally and then transmit order data to McKesson for shipment.

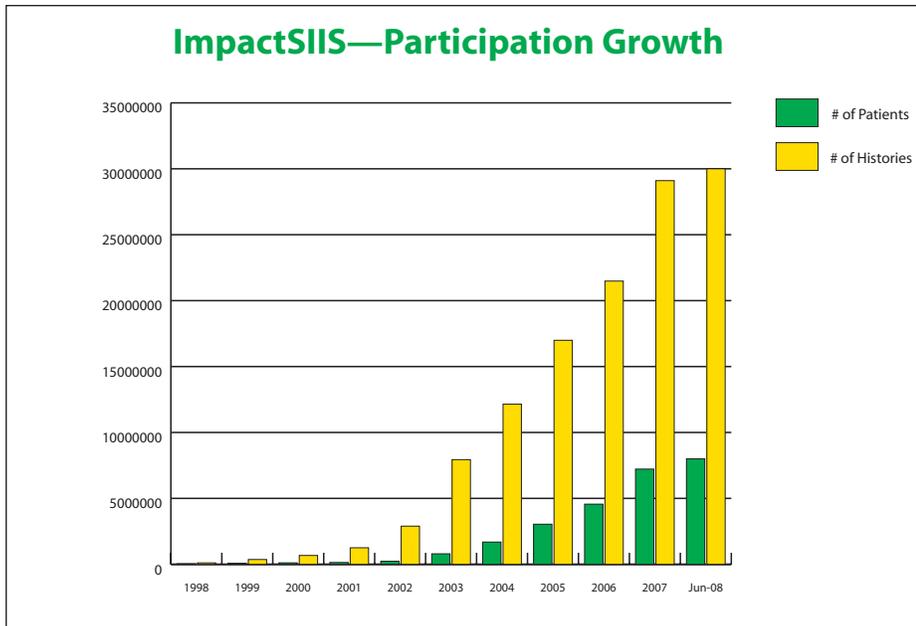
Providers will continue to use the provided order forms from ODH. Providers will also continue notifying ODH of any wasted or expired vaccine through the vaccine transfer form. Providers should follow the instructions on the transfer form on how to ship wasted or expired vaccine back to McKesson. If for any reason there is a problem with an order, providers **should not** contact McKesson. ODH will continue to serve as the primary point of contact (PPOC) even after the transition. Providers should be aware that many unknown factors could lead to shipping delays in the beginning stages of the VMBIP transition and should plan accordingly. Providers should submit their vaccine orders at least two or three weeks before their inventory is expected to be depleted.

If providers have any questions or concerns in regard to this transition, please contact your Immunization consultant directly or contact the Immunization Program at (614) 466-4643 or 1-800-282-0546.

ImpactSIIS – Ohio’s Immunization Registry

Immunization registries are confidential, computerized information systems that provide a single source of immunization records for children. Ohio’s Statewide Immunization Information System (ImpactSIIS) is a Web-based system launched in 2002.

Columbus, Cincinnati, Cleveland and Dayton. Additional meetings are scheduled on an on going basis. The ImpactSIIS team is requesting all participating providers encourage their staff to attend an end-user meeting held in their region.



ImpactSIIS is a free service offered to all Ohio medical and health department clinics and includes free reminder and recall notices sent to children who are due for immunizations. In Ohio, more than 10,000 physicians have reported shot histories to ImpactSIIS through multiple options including: Web entry, electronic files (HL7, ASCII), managed care organizations and Medicaid claims. On average, the Ohio ImpactSIIS team adds more than 5 million new records annually and encourages providers to check ImpactSIIS before administering vaccine to a child to insure they have the most complete immunization record.

If you are interested in hearing more about ImpactSIIS, please contact Robyn Taylor at the Ohio Department of Health at 1-800-282-0546.

As of March 2008, ImpactSIIS had over 30 million unique unduplicated immunization histories available to authorized users.

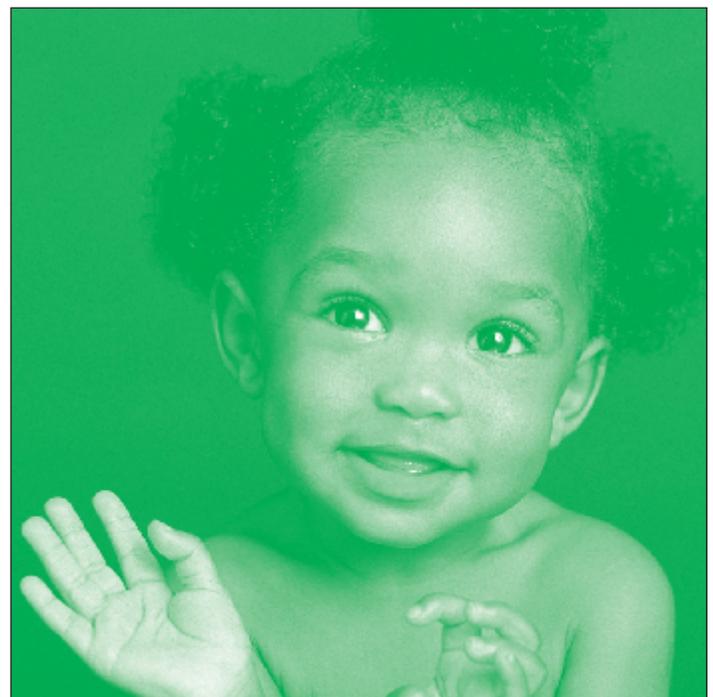
ImpactSIIS is a valuable tool for public and private immunization providers. ImpactSIIS partners with managed care organizations as well as various immunization coalitions throughout the state. ImpactSIIS is currently working with EPIC, an electronic medical records software provider to provide easy access to ImpactSIIS for EPIC users. The ImpactSIIS team looks forward to partnering with all electronic medical record companies in the future.

The ImpactSIIS recruitment team is diligently seeking new users. There is a cost benefit and time savings to using ImpactSIIS. According to the Centers for Disease Control and Prevention, each time a provider site accesses the registry, the site is saving \$14.67. With ImpactSIIS, clinic staff can easily identify what immunizations are due to be given, send reminder notices to parents that immunizations are due, track vaccine inventory and expiration dates, as well as print out school, camp and day-care immunization forms for families. Facilities that use ImpactSIIS interactively have immunization rates 15 to 20 percent higher than those sites submitting data electronically.

The ImpactSIIS team is currently providing up-to-date news, information and skills refreshers for members by providing end-user meetings throughout Ohio. There have been meetings in

References

1. American Academy of Pediatrics. Record Keeping and Immunization Information Systems. *Red Book.*; 2006: 37-39.



Vaccine Financing

Since 2000, four new vaccines have been added to the ACIP's Recommended Childhood Immunization Schedule for children aged 0-6 years: pneumococcal conjugate (2000), influenza (2004), hepatitis A (2005) and rotavirus (2006). Additionally, the second dose of varicella was added to the schedule in 2006. New vaccines for meningococcal diseases (2005), human papillomavirus (2007), and tetanus, diphtheria and pertussis (2005) have been added to the schedule for adolescents aged 7-18 years. The recent additions to the immunization schedule have caused the cost of complete vaccinations for one child through the Vaccines for Children (VFC) program to reach \$1,144.

The VFC program in Ohio is currently providing nearly \$83 million in vaccine to immunize about 1.3 million Ohio children annually. There are many children in Ohio; however, who do not qualify for VFC and face barriers to receiving needed vaccines. For example, underinsured children may receive VFC vaccine only if they receive services at a federally designated Federally Qualified Health Center (FQHC) or Rural Health Center (RHC). There are about 70 FQHC and RHC facilities enrolled in the VFC program in Ohio. These health centers are located in 34 counties, which means 54 counties do not have a participating FQHC or RHC that can serve underinsured children through the VFC program.

The Association of Immunization Managers has estimated that 7 to 11 percent of children nationwide are underinsured. According to the United States census, there are about 3 million children 18 and younger in Ohio. This would suggest between 213,000 and 335,000 Ohio children are underinsured. Some of these children are already served by FQHCs and RHCs, but it is clear a significant population of underinsured children remain who do not have access to all recommended vaccines.

All Ohio children, including those who are underinsured, may go to a local health district (LHD) clinic for immunization services. In addition to receiving VFC vaccine, LHDs receive vaccine purchased with federal 317 funds and state general revenue funds (GRF) that can be used for non-VFC-eligible children. Unfortunately, vaccine funding has not increased as the number of recommended vaccines has increased. Therefore, there are several vaccines that cannot be purchased with 317 and GRF funding, which means that they are available only to VFC-eligible children at LHD clinics. Because underinsured children are not eligible for the VFC program when they present at LHDs, there is a growing list of vaccines that underinsured children cannot receive

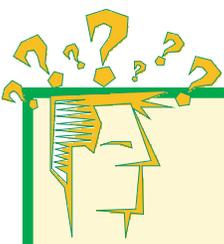


at LHD clinics. This is referred to as a two-tiered system, as LHDs may provide some vaccines to all children and other vaccines to only VFC-eligible (Medicaid eligible, uninsured and Native American) children. Vaccines that are currently not available to non-VFC-eligible children (two-tiered) at LHD clinics are:

- Rotavirus
- Human Papillomavirus (HPV)
- Hepatitis A

Meningococcal conjugate (MCV) and varicella second dose only became available to non-VFC-eligible children seen in LHDs in July 2007. If sufficient funding is not available long term, these two vaccines could again become two tiered. Additionally, the pneumococcal conjugate vaccine did not become available to non-VFC-eligible children at LHDs until October 2006, when ODH received tobacco funding for a two-year period for this vaccine. Due to the securitization of tobacco funds in Ohio, future funding for pneumococcal conjugate vaccine is uncertain and this vaccine may again become two tiered.

The Ohio Department of Health is concerned about vaccine financing challenges and continues to evaluate ways in which limited state and federal vaccine funding can be best utilized to serve Ohio children.



Ask the Expert — Questions & Answers

Q: What are the changes to the Advisory Committee on Immunization Practices (ACIP) 2008 Recommended Immunization Schedule?

A: There are several changes to the ACIP 2008 Recommended Immunization Schedule. They include:

Pneumococcal conjugate vaccine (PCV) updated recommendations for incompletely vaccinated children aged 24 – 59 months, including those with underlying medical conditions. It is now recommended that one dose of PCV be administered to all **healthy** children aged 24–59 months having any incomplete schedule. Previous recommendations were to administer PCV at ages 24–59 months in certain high-risk groups. Pneumococcal polysaccharide vaccine (PPV) should be administered to children aged 2 years and older with underlying medical conditions.

Recommendations for uses of live attenuated influenza vaccine (LAIV) now include healthy children as young as 2 years. The new influenza recommendations include the indications that for healthy, nonpregnant persons (those who do not have underlying medical conditions that predispose them to influenza complications) ages 2–49 years, either LAIV or trivalent inactivated influenza vaccine (TIV) may be used. LAIV should not be administered to children < 5 years with recurrent wheezing. The minimum age for TIV is 6 months and the minimum age for LAIV is 2 years. In addition, the new recommendations state that for children under 9 years of age who are receiving influenza vaccination for the first time, or who were vaccinated for the first time last season but received only one dose, administer two doses separated by four weeks or longer. Previous recommendations called for an interval of 4 weeks for TIV and 6 weeks for LAIV.

For children aged 2 – 10 years at increased risk for meningococcal disease, vaccinating with meningococcal conjugate vaccine (MCV4) is preferred to meningococcal polysaccharide vaccine (MPSV). MCV4 is now recommended for children aged 2–10 years with terminal complement deficiencies or anatomic or functional asplenia and certain other high-risk groups. Use of MPSV4 is also acceptable. Persons who received MPSV4 three or more years prior and remain at increased risk for meningococcal disease should be vaccinated with MCV4.

The meningococcal conjugate vaccine (MCV4) catch-up schedule for youths aged 13–18 has been updated. Administer MCV4 at age 11–12 years and at

age 13–18 years if not previously vaccinated (MPSV4 is an acceptable alternative). Administer MCV4 to previously unvaccinated college freshmen living in dormitories. MPSV4 is an acceptable alternative for short-term (i.e., 3–5 years) protection against meningococcal disease for persons aged 2–18 years.

The tetanus and diphtheria toxoids/tetanus and diphtheria toxoids and acellular pertussis vaccine (Td/Tdap) catch-up schedule has been updated. For persons aged 7–18 who received their first dose before age 12 months, recommendations now indicate that these youths should receive 4 doses, with at least four weeks (**not** eight weeks) between doses two and three. A booster (fourth) dose is still needed if any of the previous doses were administered at younger than 12 months of age. Persons age 13–18 who missed the 11–12-year Tdap, or received only Td, are encouraged to receive one dose of Tdap five years after the last Td/DTaP dose.

Catch-up bars for hepatitis B and *Haemophilus influenzae* type b conjugate vaccine have been deleted on the routine schedule for persons aged 0–6 years. Users are now referred to the catch-up schedule for patients who fall behind or start late with vaccinations.

Updated Recommendations for MMRV (ProQuad®) Preliminary results from a Centers for Disease Control and Prevention post-licensure MMRV (ProQuad®) safety study of toddlers found that the rate of febrile seizures during the seven to 10 days after vaccination was about two times higher in children who received MMRV vaccine, compared with children who received MMR and varicella vaccines separately at the same visit. This means that **one additional febrile seizure would be expected to occur for every 2,000** children who receive an MMRV vaccine instead of separate MMR and varicella vaccines. ACIP voted to change the existing MMRV recommendation to state that there is not a preference for use of MMRV vaccine over separate injections of equivalent component vaccines (i.e., MMR vaccine and varicella vaccine). A sentence was added removing ACIP preference for use of MMRV. The ACIP General Recommendations say: “Use of licensed combination vaccines is preferred to separate injection of their equivalent component vaccines...” However, the ACIP no longer wishes this preference to apply to MMRV. ACIP recommends that a personal or family history of seizures is not a contraindication or precaution for administration of MMRV, MMR or varicella vaccines.