

# Adolescent Immunization

## Overview

Over the last five years, an historically unprecedented number of vaccination recommendations for adolescents have been made by CDC's Advisory Committee on Immunization Practices (ACIP). In 2005, ACIP recommended that adolescents should routinely receive meningococcal conjugate vaccine (MCV4) as well as tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine. In 2006, ACIP recommended routine vaccination with three doses of quadrivalent human papillomavirus (HPV4) vaccine for girls aged 11–12 years. In addition, catch-up human papillomavirus (HPV) vaccination is recommended for females aged 13–26 years who have not been vaccinated previously or who have not completed the full vaccine series. In 2008, ACIP recommended annual influenza vaccination for all persons aged 6 months through 18 years beginning no later than the 2009–2010 influenza season. HPV vaccination recommendations were updated in 2009 to include recommendations for use of a recently licensed bivalent HPV (HPV2) vaccine among females (in age groups consistent with past specifications) and to include language about the possible use of the quadrivalent (HPV4) vaccine for a newly licensed indication among males aged 9 through 26 years. In October 2010, ACIP recommended a booster dose of MenACWY at age 16 years and indicated that Tdap can be administered regardless of the interval since the last tetanus and diphtheria toxoid-containing vaccine.

The recommendations for meningococcal, Tdap, and HPV vaccination support the importance of routine vaccine administration at the time of adolescent preventive care visits recommended for persons at ages 11 and 12 years. The ongoing introduction of these vaccines offers an opportunity to reduce morbidity and mortality among adolescents, enhance their uptake of other preventive services, and heighten awareness of the importance of disease prevention through lifelong use of recommended vaccines and other services. However, successful implementation of these vaccines will require strengthening public health infrastructure, function, and effectiveness as well as planning to ensure sustainability through technical and financial capacity-building. Partnerships will be necessary not only to achieve the latter goals but also to promote, achieve, and maintain equities in health care and vaccination rates among adolescents. Effective communication strategies will also be integral to the success of implementation because most adolescents will need to become knowledgeable about vaccines and diseases before they will accept vaccination. In turn, most parents and health care providers will need to learn that their respective recommendations greatly impact the decision-making and vaccine acceptance of adolescents.

Monitoring the impact of recently recommended vaccines will also be critical to the success of the adolescent immunization program. Disease surveillance will allow for assessment of progress in reducing morbidity and mortality attributable to vaccine preventable diseases such as pertussis and HPV. Along with disease surveillance, measurable service delivery indicators like vaccination coverage estimates will be useful in monitoring the effectiveness of the adolescent program. Both disease surveillance and vaccination coverage estimates will help promote the long-term sustainability of the program, as they provide important information for policy makers

and for other persons who are striving to support a vaccine or an immunization program. Ensuring sound surveillance for adverse events following immunization is critical to the timely detection of serious adverse events. Surveillance, timely public health information, and action for the protection of children, adolescents, and adults remain important to maintaining and increasing public confidence in vaccination programs. Special studies may also play an important role, and post-introduction program evaluation should be planned.

National goals for vaccination coverage for adolescents aged 13–15 years were included in Healthy People 2020. Targets for 80% coverage were specified for existing routine recommendations including one or more doses of Tdap vaccine, 1 or more doses of meningococcal vaccine, and 3 or more doses of HPV vaccine (among females). A target for 90% coverage was specified for 2 or more doses of varicella vaccine (excluding children with a history of varicella). For these antigens and specified doses, cited baseline 2008 coverage estimates (based on the National Immunization Survey-Teen) were 47% for Tdap, 44% for meningococcal vaccine, 17% for HPV, and 37% for varicella.

Increasing coverage rates in adolescents for existing and new vaccinations has been challenging in the past due to multiple factors. A lack of funding for an adolescent immunization infrastructure has limited the ability to implement projects and initiatives to increase adolescent vaccination services and improve vaccination coverage. In addition, adolescents generally seek recommended preventive health services less frequently than children in other age groups and often do not have an identified medical home, making it difficult for health care providers to promote vaccination among adolescents. This health care-seeking behavior among adolescents is arguably not a reflection of recalcitrance but rather a function of a lack of knowledge among parents and adolescents about recommendations for preventive health visits. Some adolescents obtain problem-related health care from providers in varied settings including gynecologists' offices, emergency departments, and clinics for diagnosis and treatment of sexually transmitted diseases. Historically, such settings have rarely offered routine vaccination services to adolescents. Furthermore, adolescents sometimes pursue care without their parents, leading to health care consent issues in most states; barriers associated with consent can result in missed opportunities for vaccinating this hard-to-reach population.

Effective delivery of age-appropriate, recommended vaccines to thousands of youths who are housed annually in U.S. juvenile detention residential facilities is important to the prevention and control of vaccine preventable diseases and the elimination of national health disparities. In 1999, nearly 109,000 juvenile offenders were retained in residential placement facilities. Adolescents who are incarcerated generally have antecedent histories of social marginalization, limited healthcare access and use, and behaviors that place them at high risk for vaccine preventable diseases. Vaccinating an incarcerated youth protects not only the individual but also the contacts of the youth both in the facility and in the community (following release). Because the majority of incarcerated youth are VFC eligible, direct vaccine purchase costs associated with an effective program in a juvenile detention residential facility should not be a barrier to high coverage rates in this setting. The development of an effective immunization program involving collaboration between a juvenile detention facility and a state or local health department is likely to lead to higher immunization coverage among this vulnerable population, thereby reducing disparities among adolescents.

The successful implementation of the vaccines recently recommended for adolescents will require hard work and dedication on the part of public health professionals as well as additional resources. Achievement of established and evolving coverage targets for both new and older vaccines should be at the forefront of future jurisdictional, state, and national health objectives. Progress in promoting adolescent immunization may be incremental while systems are being established and experience gained both through program conduct and health services research. Given this existing context, the requirements and recommendations that follow are intended to be realistic and general. As more lessons and resources are accrued, additional guidance regarding adolescent immunization implementation will be provided. Now more than ever before, it is important that state health departments, local health jurisdictions, and federal agencies work effectively together with private and community partners to develop comprehensive plans for the safe vaccination of all adolescents.

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- 2008-2012 Immunization Program Operations Manual (IPOM) Chapters 1, 2, 3, 4, 8, 9, and 10

## Program Goals

### 6.1 Work with partners to support the establishment of the adolescent platform for adolescent immunizations.

#### Required objectives

##### **Increase teen coverage rates**

- 6.1a. Increase grantee-specific vaccination coverage estimates for each of the three non-annual vaccines recommended for adolescents ( $\geq 1$  dose Tdap vaccine,  $\geq 1$  dose meningococcal vaccine,  $\geq 1$  dose HPV vaccine, and  $\geq 3$  doses HPV vaccine).

*Performance measure:* Percent vaccinated for each of the following:

- $\geq 1$  dose Tdap vaccine
- $\geq 1$  dose meningococcal vaccine
- $\geq 1$  dose HPV vaccine
- $\geq 3$  doses HPV vaccine

*Performance measure:* Percentage point increase in coverage as measured by the National Immunization Survey-Teen. Estimates from the 2009 NIS-Teen (most recently published data) should be used as the baseline measure for target setting.

*Target:* 15 percentage point increase OR achieve Healthy People 2020 objective of 80% coverage.

#### Recommended objectives

- 6.1b. Promote public awareness of the recommended vaccines for adolescents and the importance of annual adolescent health care visits.
- 6.1c. Promote knowledge and awareness among health care providers regarding the issues below. As examples, activities through which provider knowledge and awareness may be increased include: presentations at hospital “Grand Rounds” for varied specialties and /or at local chapters of national professional organizations, development and

distribution of publications / fliers, conduct of on-site outreach and other activities, including VFC and AFIX site visits.

- Recommended routine health care visits as described above.
- Vaccines recommended for adolescents (including those recommended for routine vaccination, catch-up administration, and delivery to high risk groups).
- The positive impact of physicians' strong recommendations on vaccine acceptance among adolescents and parents.
- The importance of offering recommended immunizations at all health care encounters, when vaccination is not contraindicated by an acute or chronic condition.
- Approaches to educating parents and adolescents about vaccines, including HPV vaccines.
- Federal law requiring dissemination of vaccine information statements (VISs) prior to administration of vaccines covered by the National Childhood Vaccine Injury Act, appropriate related procedures/documentation, and the availability VISs in up to 30 languages.
- General information regarding vaccine-preventable diseases (e.g., epidemiology, natural history, transmission, prevention).
- Jurisdiction-specific disease reporting requirements.
- Reporting procedures for the Vaccine Adverse Event Reporting System (VAERS) using report forms and assistance available from CDC at telephone 1-800-822-7967 or from VAERS at <http://www.vaers.hhs.gov>
- Beginning a vaccine program in a provider setting (through providing education on: vaccine inventory control, procedures for ordering adequate supplies, vaccine storage and handling, administration techniques, documentation, immunization information systems, and other related issues).

6.1d. Promote awareness of and participation in immunization information systems (IIS) among health care providers, especially those who are participating in the VFC program.

6.1e. Consider, if not previously addressed, the expansion of jurisdiction/state IIS to include data collection for adolescents.

6.1f. Update jurisdiction/state public health websites to include information about recommendations for immunization of adolescents.

6.1g. Remind community partners (e.g., schools, colleges, and others) to update immunization forms so that they are consistent with current requirements. Forms that are outdated (e.g., specifying Td rather than allowing for Tdap, if indicated) may result in missed opportunities for compliance with current recommendations.

6.1h. Collaborate with colleagues working in other public health programs (e.g., maternal child health, refugee health) to identify opportunities to increase public knowledge and immunization coverage among adolescents.

- 6.1i. Collaborate with hospitals and other care facilities to promote vaccination of eligible in-patients and out-patients.
- 6.1j. Consider development of a plan for immunization program evaluation with target indicators for adolescent immunization.
- 6.1k. Prepare to respond for requests for information regarding jurisdictional readiness for school vaccination requirements involving vaccines recommended for adolescents.
- 6.1l. Support and assist, when appropriate, in drafting or revising laws or regulations that relate to adolescents' capacity to consent to vaccination, so that informed adolescents may adhere to vaccination recommendations.
- 6.1m. Explore potential supplemental sources of funding to provide access to vaccines for adolescents who are not VFC-eligible and who do not have private health insurance covering vaccination costs. In addition to discretionary Section 317 funds and state appropriations, some grantees have reported using funding related to U.S. Title 5 and Title 20 as well as tobacco settlement resources.

**6.2 Provide, with guidance from CDC, information regarding the VFC program to appropriate medical providers and institutions that care for adolescents.**

Recommended objectives

- 6.2a. Train new and established VFC providers and their staff regarding procedures for vaccine inventory control, ordering adequate supplies, vaccine storage and handling, administration techniques, documentation, participation in IIS, and other related issues.
- 6.2b. Educate providers on the newly recommended vaccines for adolescents during VFC and AFIX site visits or other educational opportunities.
- 6.2c. Collaborate with professional organizations to promote adolescent vaccination in the primary care setting and identify providers who are not currently participating in the VFC program but who may now be interested. As examples, potential organizations with membership/state chapters/ local chapters that may be interested in engaging in collaborative efforts may include: American Nurses Association, National Association of Pediatric Nurse Practitioners, American Association of Colleges of Nursing, National League for Nursing, American College of Nurse-Midwives, American Academy of Family Physicians, SAM, American Medical Association, American College of Physicians, and the American Academy of Pediatrics.
- 6.2d. Work with complementary health care settings (e.g., school based health centers) and enroll facilities in the VFC program. Consider developing a 5-year plan for the identification, recruitment, and training of new VFC providers who serve adolescents. This plan may allow for gradual introduction of recommended activities described in this document and may also include outreach activities that are targeted and tailored to the population served in a particular area.

### **6.3 Identify juvenile correctional facilities serving adolescent populations and foster partnerships to promote increased coverage for recommended vaccines.**

#### **Required objective**

##### **Juvenile facilities**

6.3a. Provide, for each grantee's jurisdiction, a total number of juvenile correctional facilities serving adolescent populations.

*Performance measure:* Number of facilities

#### **Recommended objectives**

6.3b. Consider targeting initial outreach activities to correctional facilities or agencies that serve adolescents for periods  $\geq 6$  months, as these partners will have greater likelihood of successfully administering 3-dose vaccine series for HPV and Hepatitis B.

6.3c. Promote awareness among the adolescents served regarding recommended vaccines for adolescents and the diseases that the vaccines prevent.

6.3d. Promote knowledge and awareness among administrative officials and health care providers regarding:

- Recommended routine health care visits as described above.
- Vaccines recommended for adolescents (including those recommended for routine vaccination, catch-up administration, and delivery to high risk groups).
- VFC program eligibility requirements as they may apply to the population served by the correctional facility or social service agency.
- The positive impact of physicians' strong recommendations on vaccine acceptance among adolescents and parents.
- The importance of offering recommended immunizations at all health care encounters, when vaccination is not contraindicated by an acute or chronic condition.
- Approaches to educating parents and adolescents about vaccines, including HPV vaccines.
- Federal law requiring dissemination of vaccine information statements (VISs) prior to administration of vaccines covered by the National Childhood Vaccine Injury Act, appropriate related procedures/documentation, and the availability VISs in up to 30 languages.
- General information regarding vaccine preventable diseases (e.g., epidemiology, natural history, transmission, prevention).
- Jurisdiction-specific disease reporting requirements.
- Reporting procedures for the Vaccine Adverse Event Reporting System (VAERS) using report forms and assistance available from CDC at telephone 1-800-822-7967 or from VAERS at <http://www.vaers.hhs.gov>

- Beginning a vaccine program in a provider setting in a correctional facility (through providing education on: vaccine inventory control, procedures for ordering adequate supplies, vaccine storage and handling, administration techniques, documentation, immunization information systems, and other related issues).

6.3e. Consider developing a model immunization program involving collaboration between a juvenile correctional facility and a state or local health department and designed to lead to the identification of best practices needed to achieve high immunization coverage among members of this vulnerable population.

#### **6.4 Additional Recommended Goals**

##### Recommended objectives

6.4a. Conduct assessment of adolescent vaccination coverage levels during AFIX visits. Activities should be developed in accordance with the Level 1 AFIX standards.

This document can be found on the CDC website at:  
<http://www.cdc.gov/vaccines/vac-gen/policies/ipom/downloads/chp-06-adolescent-iz.pdf>