Recommendations from the National Vaccine Advisory Committee: Standards for Adult Immunization Practice

National Vaccine Advisory Committee

The Advisory Committee on Immunization Practices (ACIP) makes recommendations for routine vaccination of adults in the United States.[1] Standards for implementing the ACIP recommendations for adults were published by the National Vaccine Advisory Committee (NVAC) in 2003[2] and by the Infectious Diseases Society of America in 2009.[3] In addition, NVAC published a report in 2012 outlining a pathway for improving adult immunization rates.[4] While most of these documents included guidelines for immunization practice, recent changes in the practice climate for adult immunization necessitated an update of existing adult immunization standards. Some of these changes include expansion of vaccination services offered by pharmacists and other community immunization providers both during and since the 2009 H1N1 influenza pandemic; vaccination at the workplace; increased vaccination by providers who care for pregnant women; and changes in the health-care system, including the Affordable Care Act (ACA), which requires first-dollar coverage of ACIP-recommended vaccines for people with certain private insurance plans, or those who are beneficiaries of expanded Medicaid plans.[5] The ACA first-dollar provision is expected to increase the number of adults who will be insured for vaccines. Other changes include expanding the inclusion of adults in state immunization information systems (IISs) (i.e., registries) and the Centers for Medicare & Medicaid Services Meaningful Use Stage 2 requirements, which mandate provider reporting of immunizations to registries, including reporting of adult vaccination in states where such reporting is allowed.[6] For the purposes of this report, provider refers to any individual who provides health-care services to adult patients, including physicians, physician assistants, nurse practitioners, nurses, pharmacists, and other health-care professionals.

While previous versions of the adult immunization standards have been published, recommendations for adult vaccination are published annually, and many health-care organizations have endorsed routine assessment and vaccination of adults, vaccination among adults continues to be low.[7–15] Several barriers to adult vaccination include:

- Lack of health-care provider and patient knowledge about the need for vaccinating both healthy and high-risk adults.
- Medical management of acute and chronic illnesses, which usually receives priority over preventive services.
- Some providers not offering vaccines or offering only a subset of vaccines recommended for adults, and many adult patients unaware of their recommended vaccines.

- Private and public payer payment for vaccines complicated for providers, and not all those who vaccinate adults are recognized as providers by third-party payers.
- Medicare setting limits on coverage for vaccines based on the type of plan. For example:
  - Fully reimbursed vaccines through Medicare Part B are limited to vaccines against influenza, pneumococcal, tetanus-diphtheria (Td) (as part of wound management but not routine booster doses), and hepatitis B (for certain intermediate and high-risk groups such as patients with end-stage renal failure or diabetes).[16]
  - Medicare Part D provides limited coverage for the remainder of vaccines recommended for adults, often requiring significant out-of-pocket costs to patients (e.g., zoster vaccine; tetanus, diphtheria, and pertussis vaccine; and routine booster doses of Td vaccines).[16]
  - Vaccines included in Medicare Part D plans are pharmacy or drug benefits rather than medical benefits. Because most medical providers are not enrolled as pharmacy providers, receiving reimbursement for these vaccines is a challenge. Many providers, both medical and nonmedical, experience complexities in dealing with billing processes and the level of payment for Part D claims. Pharmacist vaccinators are established providers for Part D vaccines but are still challenged by coverage variability in insurance plans.
- Medicaid vaccination coverage and authorized vaccines vary by state, with some states covering only a subset of vaccines recommended for adults by ACIP. Medicaid coverage of ACIP-recommended vaccines is further complicated by the Supreme Court decision allowing states to opt out of increased Medicaid coverage.[17]
- Out-of-pocket costs to patients are a known barrier. For example:
  - While the ACA removed out-of-pocket costs for many privately insured people, not all providers and patients are likely to be aware of this provision.
  - Some providers may not be eligible for reimbursement under some health insurance plans because they are not authorized as in-network providers for vaccination services.
  - Many adults remain uninsured.

continued on p. 117

- Patients may see many different providers, including specialists who may not be vaccine providers. The presence of multiple providers of health services may complicate coordination of care and reduce the likelihood that patients' vaccination needs are routinely assessed and needed vaccines are offered.

Despite these barriers, a number of strategies have been shown to improve receipt of adult immunizations. One of the most important predictors of vaccination receipt among adults is a health-care provider's recommendation and offer of vaccine during the same visit. The importance of a provider recommendation for vaccination has been demonstrated repeatedly.[18–22] Other approaches shown to increase vaccination coverage include patient and provider reminder/recall systems; provider assessment and feedback about vaccination practices; use of standing orders or protocols; reducing patient out-of-pocket costs; worksite interventions with on-site, actively promoted vaccination services; and other community-based and health-care system-based interventions implemented in combination.[21]

The need to review and revise earlier standards is based on several factors:

- Emphasis on the role of all providers, even nonvaccinating providers, to assess immunization status and recommend needed vaccines was not included in earlier adult immunization standards documents and is generally not included in clinical training programs.
- Community vaccinators and pharmacists are increasingly recognized as integral to achieving higher adult vaccination rates.
- Reliance on electronic health records (EHRs) is increasing and there are meaningful use incentives for eligible medical providers to enter patient immunization information into IISs for Medicare and Medicaid EHR incentive payments.
- A change in communication strategies for educating and contacting patients, with the availability of the Internet and social media, is underway.
- New opportunities are afforded by the ACA to provide vaccination within the shifting landscape of vaccine financing. There is also a shift in payment models away from fee-for-service toward payment for better outcomes of care.
- Federal funds for immunization programs that had been used for underinsured children may become available for purchasing vaccines for uninsured adults as the number of children insured for vaccines increases due to implementation of the ACA.

As such, the NVAC recommends that the Assistant Secretary for Health promote the use of the 2013 updated NVAC Standards for Adult Immunization Practice by all health-care professionals and payers in the public and private sectors who provide care for adults.

STANDARDS FOR ADULT IMMUNIZATION PRACTICE

Every health-care provider, in all settings, has a fundamental responsibility to ensure that all patients are up-to-date with respect to recommended immunizations. The purpose of the Standards for Adult Immunization Practice, which are summarized in the Figure, is to provide guidance to adult health-care providers across the spectrum of health care. This section addresses the

Figure. Summary of 2013 National Vaccine Advisory Committee's standards for adult immunization practices

Audience	*Summary of standards*
All providers	• Incorporate immunization needs assessment into every clinical encounter. • Strongly recommend needed vaccine(s) and either administer vaccine(s) or refer patient to a provider who can immunize. • Stay up-to-date on, and educate patients about, vaccine recommendations. • Implement systems to incorporate vaccine assessment into routine clinical care. • Understand how to access immunization information systems (i.e., immunization registries).
Non-immunizing providers	• Routinely assess the immunization status of patients, recommend needed vaccine(s), and refer patient to an immunizing provider. • Establish referral relationships with immunizing providers. • Follow up to confirm patient receipt of recommended vaccine(s).
Immunizing providers	• Ensure professional competencies in immunizations. • Assess immunization status in every patient care and counseling encounter and strongly recommend needed vaccine(s). • Ensure that receipt of vaccination is documented in patient medical record and immunization registry.
Professional health-care-related organizations/ associations/health-care systems	• Provide immunization education and training of members, including trainees. • Provide resources and assistance to implement protocols and other systems to incorporate vaccine needs assessment and vaccination or referral into routine practice. • Encourage members to be up-to-date on their own immunizations. • Assist members in staying up-to-date on immunization information and recommendations. • Partner with other immunization stakeholders to educate the public. • Seek out collaboration opportunities with other immunization stakeholders. • Collect and share best practices for immunization. • Advocate policies that support adult immunization standards. • Insurers/payers/entities that cover adult immunization services should assure their network is adequate to provide timely immunization access and augment with additional vaccine providers if necessary.
Public health departments	• Determine community needs, vaccination capacity, and barriers to adult immunization. • Provide access to all ACIP-recommended vaccinations for insured and uninsured adults and work toward becoming an in-network provider for immunization services for insured adults. • Partner with immunization stakeholders and support activities and policies to improve awareness of adult vaccine recommendations, increase vaccination rates, and reduce barriers. • Ensure professional competencies in immunizations. • Collect, analyze, and disseminate immunization data. • Provide outreach and education to providers and the public. • Work to decrease disparities in immunization coverage and access. • Increase immunization registry access and use by vaccine providers for adult patients. • Develop capacity to bill for immunization of injured people. • Ensure preparedness for identifying and responding to outbreaks of vaccine-preventable diseases. • Promote adherence to applicable laws, regulations, and standards among adult immunization stakeholders.

ACIP = Advisory Committee on Immunization Practices

roles of all providers with regard to immunizations, including the role of all providers to conduct routine assessment of vaccination needs for their patients, recommend needed vaccines, and either administer needed vaccines or, for providers who currently do not stock all recommended vaccines, refer patients to places where they can get recommended vaccines.

1. Standards for all providers, including those who do and do not provide immunization services

Part of routine clinical care for all providers should include an assessment of their patients' immunization status and a recommendation to the patient and/or the patient's caregiver for needed vaccines. Assessment and recommendation can be accomplished through the following practices:

a. Emphasize the importance of immunizations during patient encounters, incorporate patient assessment of vaccine needs into routine clinical practice, and document vaccination status in patient medical records. IISs and EHRs should be referenced as sources of data about a patient's vaccine history.

b. Strongly recommend all immunizations that patients need.

c. Provide all recommended vaccines to patients who need them at the time of the visit. If the vaccines are not given or, if the provider does not have the vaccines in stock, refer the patient to a vaccine provider known to be able to provide the recommended vaccinations. Because vaccine uptake is much higher among patients when the vaccine is recommended and offered at the same visit, providers who are able to stock vaccines for their patients are strongly encouraged to do so.[18]

d. Ensure that they, and their practice staff, are up-to-date on their own vaccinations per ACIP health-care personnel vaccine recommendations[23] and consistent with professional guidelines. Examples of current professional association guidelines include the following:

   i. The American Nurses Association (ANA) has a longstanding policy supporting immunizations for nurses and all people across the life span. ANA believes that nurses have a professional and ethical obligation to be immunized because it protects both the health of the nurse and the health of his/her patients and community.[8]

   ii. The National Association of County and City Health Officials (NACCHO) urges health-care employers and local health departments to require influenza vaccination for all staff members as a condition of employment.[9]

   iii. The American Pharmacists Association recommends that its members be up-to-date on immunizations as a professional standard.[10]

   iv. The American Medical Association's policy supports the vaccination of health-care professionals against communicable diseases to prevent transmission to their patients.[11]

   v. The Infectious Diseases Society of America recommends that all health-care workers be fully immunized according to ACIP recommendations.[12]

   vi. The American Academy of Physicians Assistants recommends that physician assistants (PAs) should be immunized against vaccine-preventable diseases for which health providers are at high risk. Doing so not only protects PAs, but also protects patients by preventing provider-to-patient transmission.[13]

   vii. The American College of Physicians recommends that all health-care providers be immunized against influenza; diphtheria; hepatitis B; measles, mumps, and rubella; pertussis (whooping cough); and varicella (chickenpox) according to ACIP recommendations.[14]

   viii. The American College of Obstetricians and Gynecologists (ACOG) recommends that College Fellows have an ethical obligation to follow recommendations for vaccination themselves and other safety policies put into place by their local or national public health authorities, such as the Centers for Disease Control and Prevention (CDC) and ACOG.[15]

e. Implement systems to:

   i. Incorporate vaccination assessment into routine care for outpatients.

   ii. Identify patients for needed vaccines based on age, risk factor indications for vaccination, and prior vaccination history.

   iii. Incorporate vaccination assessment and appropriate vaccination of hospitalized patients and those in long-term care facilities with recommended vaccines, especially influenza and pneumococcal vaccines.

   iv. Ensure follow-up for needed vaccinations after hospital discharge.

f. Educate patients about vaccines they need using understandable language, including the vaccine information statements for those vaccines covered by the Vaccine Injury Compensation Program.

g. For providers in states that include adult immunization records in their state IIS or registry, understand how to access the IIS as a source to check for vaccines that a patient has already received or should have received. Checking the IIS at each patient encounter reduces the likelihood of unnecessary vaccinations and provides information about receipt of other vaccines and whether the patient has appropriately completed the vaccination series as recommended.

2. Standards for non-immunizing providers

Because data show that (*1*) patients are more likely to get vaccinated when vaccines are recommended by trusted health-care professionals and (*2*) vaccine uptake is higher when vaccine is provided at the same time, primary care providers are strongly urged to stock and provide all recommended adult vaccines. Providers whose facilities are unable to provide certain immunizations (e.g., medical specialists' offices, which do not routinely provide vaccines for adults) still have a significant role in ensuring that their patients receive needed vaccines. Non-vaccinating providers should:

a. Routinely assess whether their patients are up-to-date on recommended vaccinations, strongly recommend said vaccines, and refer patients to vaccine providers for needed vaccines.
b. Establish patient referral relationships with vaccine providers in their area.
    i. Ensure that referral location does not create other barriers for the patient.
        1. Ensure that the vaccine provider offers the recommended vaccines, and that the provider is eligible for payment by patient's insurer to minimize out-of-pocket costs for the patient and any delay in vaccination.
        2. Provide information to the patient during the visit about which vaccines are needed, including a prescription when necessary and the contact information for the vaccination referral location.
    ii. Ensure appropriate follow-up of vaccine receipt by the patient at the patient's next visit, and encourage the vaccine provider to document vaccination (e.g., in the IIS and/or the patient's medical record) and with the patient's primary care provider, if known.

3. Standards for immunizing providers

All providers who have a role as a primary source of health care for patients should stock all ACIP-recommended vaccines for adults. Standards for all providers who immunize adults include ensuring professional competencies in knowledge of vaccine recommendations, vaccine needs assessment, vaccine administration, vaccine storage and handling, documentation of vaccination, and communicating information about vaccination to the patient's medical home.

a. Observe professional competencies regarding immunizations by ensuring that vaccine providers:
    i. Are up-to-date on current ACIP vaccine recommendations, appropriate vaccine administration techniques, and vaccine storage and handling guidelines.
    ii. Have up-to-date, culturally competent materials for patient counseling about the benefits and risks of vaccinations.
    iii. Are knowledgeable regarding valid contraindications, adverse events, and reporting of adverse events.
    iv. Use correct vaccine administration techniques.
    v. Are knowledgeable about which vaccines may be administered at the same visit to reduce missed opportunities for vaccination.
    vi. Have systems in place and training for appropriate response to adverse event(s) that may occur after vaccination, including severe allergic reactions.
    vii. Have staff who are educated in appropriate vaccine storage and handling systems and vaccine monitoring in their practice.
b. Assess and strongly recommend vaccinations during every patient care and counseling encounter.
    i. Written vaccination assessment protocols are available and implemented after appropriate staff training.
    ii. Protocols or standing orders are used (when appropriate for the setting and patient type) to administer routinely recommended vaccines, and protocols are kept up-to-date.
    iii. Staff competencies in vaccine needs assessment, counseling, and vaccine administration as part of standing orders or protocols are periodically assessed.
    iv. Reminder recall systems are in place to remind providers and patients about

needed vaccines and to ensure that vaccine series are completed to optimize vaccination benefits.

c. Ensure receipt of vaccination is documented.
   i. Record receipt of vaccination in the patient's EHR.
   ii. Provide a record of vaccines administered to patients, either written or electronic.
   iii. Use the IIS to record administered vaccines in states that allow adult vaccination information to be entered into the registry.
   iv. If the vaccinator is not the patient's primary care provider, then communicate vaccine receipt with the patient's primary care provider, if known.

4. Standards for professional health-care-related organizations, associations, and health-care systems
Standards with respect to immunizations include:

a. Integrate educational information on immunizations into professional training, including training of students in undergraduate and postgraduate training programs. This training includes support for incorporating modules on immunization into medical, nursing, and pharmacy schools, as well as allied health profession curricula.
b. Provide resources and assistance for providers to implement protocols or standing orders, where feasible, and other systems changes to improve routine assessment of vaccine needs and vaccination.
c. Encourage their members, trainees, and students to ensure that their own vaccinations are up-to-date as a standard of the profession.
d. Assist their members, employees, trainees, and students in remaining current regarding ACIP immunization recommendations by providing updates through routine communications and continuing education.
e. Make educational materials for patients regarding vaccine recommendations available to their memberships.
f. Partner with community organizations, such as immunization coalitions or vaccine advocacy groups, to improve public awareness of adult immunizations.
g. Participate in collaboration opportunities with other members of the immunization community (including public health, public and private medical, nursing and pharmacy services providers, patient advocacy, health systems, and other entities).
h. Offer modules to help providers assess and improve adult vaccination coverage of their patients as a measure of quality improvement within clinical practices.
i. Provide resources to assist providers in implementing and operationalizing immunization services within their practices, including helping providers understand the payment for vaccines based on insurance type and benefit design (e.g., private insurance, Medicare Part B, or Medicare Part D).
j. Provide resources (i.e., forms and other tools) for collecting and sharing best practices among adult immunization stakeholders.
k. Advocate public policies that support these adult immunization standards.
l. Insurers/payers/entities that cover adult immunization services should ensure that their networks are adequate to provide timely immunization access and augment with additional vaccine providers, if necessary (e.g., public health departments, pharmacists, and worksites).

5. Standards for public health departments
Public health departments may provide vaccination services and, in that role, public health professionals should adhere to the standards of their profession. Additionally, the professional associations that represent public health professionals and public health departments (e.g., Association of State and Territorial Health Officials, NACCHO, Association of Immunization Managers, and the Council of State and Territorial Epidemiologists) should promote adherence to the standards of the public health profession, particularly as they relate to adult immunizations. Public health has additional roles in assessing immunization program needs and the impact of vaccination programs, including educating the public and providers about immunizations. These additional roles include the following:

a. Determine community needs and capacity for adult immunization administration and barriers for patient access.
   i. Work toward decreasing disparities in immunization access based on factors such as race/ethnicity, insurance status, poverty, and location (e.g., rural areas or medically underserved areas).
b. Develop policies and/or regulations (legislation) that promote high vaccination rates and reduce

immunization barriers for adult patients and their providers.

c. Immunization programs should collaborate with existing public health programs that provide clinical services, such as sexually transmitted disease control programs, substance abuse treatment services, and tuberculosis control programs to incorporate vaccine administration and recordkeeping.

d. Ensure professional competency by providing or supporting education to adult health-care providers on routine adult immunizations.

e. Maintain surveillance for vaccine-preventable diseases to recognize potential disease outbreaks or problems with vaccines and to assist in the control of vaccine-preventable diseases in the event of outbreaks.

f. Collect, analyze, and disseminate available data on vaccine coverage to the public and health-care providers in their jurisdiction to identify and address gaps in coverage.

g. Provide resources and assistance for vaccine providers to implement protocols or standing orders, where feasible, and other systems changes to improve routine assessment of vaccine needs and vaccination.

h. Provide best practice examples to health-care providers and collaborate with providers in implementing these best practices.

i. Provide subject-matter expertise to train and educate vaccine providers and their staff on vaccine recommendations, proper storage and handling, and proper vaccine administration.

j. Collaborate with providers to assist in implementing and operationalizing immunization services within their practices.

k. Partner with professional medical, pharmacy, nursing, and other provider organizations; health-care networks; community organizations; and advocacy groups (e.g., mental health services, diabetes educators, asthma educators, correctional facilities, and substance abuse providers) to:

    i. Increase awareness and knowledge of adult immunizations and methods to reach recommended target populations for immunization; and

    ii. Educate their members and trainees regarding immunizations.

l. Provide outreach and education to the public and providers about vaccines.

    i. Collaborate with professional medical, pharmacy, nursing, and other provider organizations; health-care networks; community organizations; business and civic groups; and advocacy groups (e.g., mental health services, diabetes educators, asthma educators, correctional facilities, and substance abuse providers) to:

        1. Increase public awareness and knowledge of adult immunizations and reach recommended target populations for immunization.

        2. Provide culturally competent public education through appropriate venues, including the use of social media and ethnic media.

m. Work toward including adults in all state IISs, reduce barriers to including adult vaccination records in IISs, and ensure that IISs meet new standards of EHR interoperability to track and maintain adult vaccination records.

n. Expand access to and provide training for IISs to all adult health-care providers.

o. Provide access to all ACIP-recommended vaccinations.

    i. Ensure capacity to provide all ACIP-recommended vaccines and immunization services for insured and uninsured adults.

    ii. Work toward becoming an in-network provider for immunization services for insured adults.

p. Ensure preparedness for, and investigate and work to control, outbreaks of vaccine-preventable diseases when they occur. Managing these outbreaks should include activities such as creating, maintaining, and practicing emergency preparedness plans for vaccine responses to outbreaks such as pandemic influenza.

q. Demonstrate accountability and good stewardship of public financing for vaccines.

r. Communicate information about vaccine shortages, when they occur, to providers and the public.

s. Communicate information on vaccine recalls and vaccine safety issues to providers and the public.

t. Promote adherence to applicable laws, regulations, and standards among adult immunization stakeholders.

CONCLUSION

The environment surrounding adult immunizations has changed dramatically since the last Standards for Adult Immunization Practices were issued by NVAC in 2003.[2] These updated and revised Standards for Adult Immunization Practice represent a continued effort by NVAC to advance action to improve adult immunization coverage rates in the U.S. aligned with its 2011 report, "A Pathway to Leadership for Adult Immunization: Recommendations of the National Vaccine Advisory Committee."[4] With these Standards, NVAC provides a concise description of desirable immunization practices that will improve the provision of adult immunizations in the U.S. As an evolution of the work from the National Adult and Influenza Immunization Summit established by CDC, the Immunization Action Coalition, and the National Vaccine Program Office, these revised standards have been widely reviewed by major professional organizations and other partners in adult immunization. NVAC recommends that the Assistant Secretary for Health promote the use of these updated Standards for Adult Immunization Practices by all health-care professionals and health-care systems in the public and private sectors who provide and pay for care for adults. NVAC firmly advocates that all providers follow these Standards and believes that these Standards will be useful to inform immunization practice and immunization policy development.

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