

Immunization Strategies for Healthcare Practices and Providers

Adam Bjork, PhD and Valerie Morelli, BA

An important component of a vaccine provider’s practice is ensuring vaccines reach all patients who need them, when they need them. Providers should implement systems and programs to provide effective vaccine delivery and to maintain and increase vaccination coverage in their practices. By creating a culture of immunization in the practice, both providers and patients can vaccinate with confidence.

Vaccine-preventable disease rates in the United States are at low levels. In 2018, four cases of rubella, one case of diphtheria, and 23 cases of tetanus were reported to CDC. However, the viruses and bacteria that cause vaccine-preventable diseases and death still exist. Diseases can be passed to unprotected persons or imported from other countries, as shown by the measles outbreaks that occurred in 2019 in New York and other states. Diseases such as measles, mumps, and pertussis can be more severe than often assumed, and can result in social and economic costs in addition to the physical costs: sick children miss school, parents have to take time off from work, and outbreaks can severely disrupt health care systems.

Sustainable systems for vaccinating children, adolescents, and adults must be continued in the context of a changing health care environment. High vaccination coverage cannot be maintained with one-time or short-term efforts. Greater understanding of strategies to increase and sustain vaccination coverage is necessary to create lasting, effective immunization delivery systems.

Many public health strategies have been used to increase vaccination coverage. Some, such as school entry laws, have been effective in increasing vaccination compliance, but the effectiveness of other strategies (e.g., advertising) is not well-documented. Some proven strategies (e.g., reducing costs, linking vaccination to Women, Infants, and Children [WIC] services, home visits) work well to increase coverage among specific populations, such as persons with limited access to immunization services. However, creating a culture of immunization within a health care practice also plays a critical role in maintaining and increasing vaccination coverage, as well as ensuring vaccines are delivered safely, effectively, and on time.

This chapter explores strategies health care providers can implement within their own practices. It covers system-level interventions such as quality improvement programs, as well as practice-level actions directed toward patients and provider staff.

NOTES

NOTES

Standards for Child, Adolescent, and Adult Immunization Practices

All health care providers in all settings are encouraged to ensure patients are up-to-date on vaccinations. The National Vaccine Advisory Committee’s (NVAC) *Standards for Child and Adolescent Immunization Practices* and *Standards for Adult Immunization Practice* are recommended for use by all health care providers in the public and private sectors. The standards represent the most desirable immunization practices that providers should strive to achieve, regardless of whether they actually provide vaccinations. Providers implementing these standards will help ensure their patients are fully vaccinated, thereby helping to increase vaccination coverage and prevent outbreaks.

The *Standards for Child and Adolescent Immunization Practices* outline standards within five categories:

- Availability of vaccines
- Assessment of immunization status
- Effective communication about vaccine benefits and risks
- Proper storage and administration of vaccines and documentation of vaccinations
- Implementation of strategies to improve vaccination coverage

The *Standards for Adult Immunization Practice* include the following four standards:

- Assess immunization status of all adult patients at every clinical encounter
- Strongly recommend vaccines that patients need
- Administer vaccine or refer patients to a vaccine provider
- Document vaccines received by patients

The Guide to Community Preventive Services

The Community Preventive Services Task Force’s *Guide to Community Preventive Services* is a collection of evidence-based findings based on effectiveness data and economic evidence. The vaccination section of the *Guide to Community Preventive Services* describes strong or sufficient evidence to support several provider-based immunization strategies discussed throughout this chapter.

Health Care Practice Quality Improvement Programs

Immunization quality improvement projects can be particularly effective because vaccination is a dynamic, critical, and measurable area of health care. It is rapidly evolving, making fast strides in some areas, but lagging in others, such as human papillomavirus (HPV) vaccination.

CDC encourages health care providers to consider implementing immunization quality improvement projects that:

1. Generate measurable increases in child, adolescent, and adult vaccination coverage.
2. Bring about measurable increases in HPV vaccination coverage, particularly rates of coadministration with other adolescent vaccines at age 11 or 12 years.
3. Bring about measurable increases in vaccination coverage of pregnant women, specifically for influenza and pertussis.
4. Reduce disparities in vaccination coverage, whether associated with race, ethnicity, type of health insurance (including lack of insurance), or any other factor resulting in less than optimal coverage.

Immunization Quality Improvement for Providers (IQIP)

CDC works with state, local, and territorial public health agencies to administer the Immunization Quality Improvement for Providers (IQIP) program to introduce and sustain new or improved immunization practices. Designed to increase on-time vaccination at the provider level, IQIP strategies are intended to increase vaccine uptake among child and adolescent patients in adherence with the Advisory Committee on Immunization Practices (ACIP) routine immunization schedule. IQIP is targeted toward quality improvement among providers enrolled in the Vaccines for Children (VFC) program.

IQIP Overview

IQIP serves to assist and support providers by identifying opportunities to improve vaccine uptake, determining options for improving immunization delivery practices, and ensuring providers are:

- Aware of and knowledgeable about vaccination coverage within their practices and missed opportunities to vaccinate
- Motivated to try new immunization service delivery strategies and incorporate changes into their practices
- Capable of sustaining changes and improvements to their immunization delivery services

NOTES

Immunization Strategies for Healthcare Practices and Providers

The *Guide to Community Preventive Services* recommends IISs based on strong evidence that their use increases vaccination coverage. IISs can directly contribute to efforts to increase vaccination coverage through their abilities to:

- Create or support effective interventions such as patient reminder and recall systems, provider assessment and feedback, and provider reminders.
- Generate and evaluate public health responses to outbreaks of vaccine-preventable disease.
- Facilitate vaccine inventory management and accountability.
- Determine patient immunization status to inform decisions made by health care providers, clinicians, health departments, and schools.
- Aid surveillance and investigations of vaccination coverage, missed vaccination opportunities, and invalid dose administration.

Federal, state, and local public health agencies are continuing their efforts to improve IISs and to increase participation by vaccine providers. IISs are a key to increasing and maintaining vaccination coverage, and they offer advantages for providers, patients, and state and federal immunization program staff.

Essential Strategies for Health Care Practices

In addition to implementing a quality improvement program such as IQIP and participating in an IIS, other effective practice strategies exist that complement these programs. These strategies focus on patient confidence in vaccination and provider development of a culture of immunization within a practice.

Patient-Focused Strategies

Strong Vaccination Recommendation

A strong recommendation by a health care provider is a powerful motivator for patients to comply with vaccination recommendations. A recommendation from a health care provider remains the number one reason parents decide to vaccinate. Even initially reluctant adults are likely to receive an influenza vaccination when the health care provider's opinion of the vaccine is positive. Studies show a parent who receives a recommendation from their child's health care provider is four to five times more likely to get the HPV vaccine for their child.

Research has also shown the way a recommendation is presented makes a difference. When providers use a presumptive approach (one that assumes parents will choose to vaccinate), parents are more likely to accept vaccines than when a participatory approach (one that presents parents with

NOTES

NOTES

a decision to make) is used. A research study looking at health care provider’s interactions with parents during vaccine visits showed parents were more likely to express concerns when providers used language asking parents about their vaccination plans. In this study, the presumptive approach resulted in significantly more parents accepting vaccines for their children, especially at first-time visits.

In practice, a provider using a presumptive approach might say, “Your child needs DTaP, Hib, and hepatitis B shots today.” In contrast, a participatory approach might sound like, “Have you thought about the shots your child needs today?”

Take Time to Answer Questions

A strong recommendation will be enough to persuade many patients and parents to accept vaccines. However, some patients and parents might need more information or additional reassurance. An opportunity for questions should be provided before each vaccination. Discussion of the benefits and risks of vaccination is sound medical practice and providers are required by law to distribute vaccine information statements (VISs) before each dose of vaccine.

Surveys of parents of young children have shown while most parents plan to vaccinate on schedule, many parents still have questions, often related to vaccine ingredients, vaccine safety in general, or side effects. Data from CDC’s National Immunization Survey (NIS)-Teen show when parents receive a recommendation for HPV vaccination from their child’s health care provider, about a quarter of parents still choose not to have their child vaccinated. These parents may have concerns that need to be addressed about the safety or effectiveness of the vaccine.

If a parent has concerns, resists following the recommended immunization schedule, or questions a provider’s strong recommendation, this does not necessarily mean they will not accept vaccines. Sometimes parents simply want to hear their provider’s answers to their questions. Providers should be prepared to answer parents’ questions succinctly and accurately, using terms parents understand. Effective, empathic vaccine risk communication is essential in responding to misinformation and concerns. It is important to remind parents that state laws for school or child care entry might require unvaccinated children to stay home from school during outbreaks. For patients who question or refuse vaccination, identifying common ground and discussing measures for deferring vaccination are more effective public health strategies than excluding these patients from a practice.

Immunization Strategies for Healthcare Practices and Providers

Providers can also train their staff in how to address basic vaccine questions to help save time during vaccine discussions and ensure parents hear consistent messages about vaccines.

For adults, providers can SHARE important information to help patients make informed decisions about vaccinations:

- **Share** the tailored reasons why the recommended vaccine is right for the patient based on his or her age, health status, lifestyle, occupation, or other risk factors.
- **Highlight** positive experiences with vaccines (personal or in the practice), as appropriate, to reinforce the benefits and strengthen confidence in vaccination.
- **Address** patient questions and concerns about the vaccine, including side effects, safety, and vaccine effectiveness in plain and understandable language.
- **Remind** patients that vaccines protect them and their loved ones from many common and serious diseases.
- **Explain** the potential costs of getting the disease, including serious health effects, time lost (missing work or family obligations), and financial costs.

When recommending influenza vaccine, it may also be helpful to explain that the vaccine can reduce the severity of illness among those who contract influenza.

Practice-Focused Strategies

Despite efforts by providers to adhere to appropriate immunization practices, there may be unknown obstacles to vaccination within the practice. Barriers to vaccination may be physical or psychological.

Physical barriers might include inconvenient clinic hours for working patients or parents, long waits at a clinic, or transportation issues. Providers are encouraged to determine the needs of their specific patient population and address obstacles to vaccination by taking appropriate actions, such as extending clinic hours or holding special vaccination events.

NOTES

NOTES

Psychological barriers to health care are often more subtle but may be just as important. Unpleasant experiences (e.g., fear of injections or difficulty leaving work for an appointment) may lead patients to postpone receiving needed vaccines. Concerns about vaccine safety contribute to some parents delaying or refusing recommended vaccines for their children. Overcoming such barriers calls for both knowledge and interpersonal skills on the part of the provider: knowledge of vaccines, recommendations, and reliable sources of accurate information to provide to patients and parents, as well as communication skills to address fears and misconceptions and provide a supportive and encouraging environment for patients.

System-Based Barriers

Missed Opportunities

Another obstacle to vaccination is a missed opportunity at a health care encounter in which a person is eligible to receive a vaccine but is not vaccinated completely. Missed opportunities can occur in all settings in which vaccines are offered, whether routine or not.

Missed opportunities occur for several reasons. Many health care providers avoid simultaneous administration of multiple injectable vaccines, frequently citing concerns about reduced immune response, adverse events, or perceived parental objections. These concerns are not supported by scientific data. Providers might even be unaware a child or adult needs a vaccination. In addition, providers sometimes follow invalid contraindications. A list of conditions incorrectly perceived as contraindications or precautions can be found in ACIP's *General Best Practice Guidelines for Immunization*.

Some reasons for missed opportunities relate to larger system issues, such as policies of only vaccinating children at well-care visits or not vaccinating siblings. Other reasons relate to institutional or bureaucratic regulations, such as state insurance laws denying reimbursement if a vaccine is administered during an acute-care visit. Several studies have shown eliminating missed opportunities could increase vaccination coverage by up to 20%.

Providers should implement systems to ensure the practice never misses an opportunity to vaccinate. Establish a policy to vaccinate at every visit, not just well visits, and schedule the next vaccination appointment before the patient leaves.

Adult Vaccination Barriers

Recognized barriers to adult vaccination include:

- Limited access to health care
- Multiple competing priorities for providers who care for adult patients
- Low awareness among adults about recommended vaccines and their benefits
- Challenges in coordinating care for adults who often have more than one medical provider
- A complicated adult immunization schedule
- Vaccine cost and reimbursement

Professional societies such as the American College of Physicians and American College of Obstetricians and Gynecologists have developed programs to support providers in improving vaccination coverage among their patients. These organizations and the [National Adult and Influenza Immunization Summit](#) offer educational resources, tools, and strategies to overcome challenges to vaccinating adults.

Creating a Culture of Immunization within a Practice

Creating a culture of immunization means including every member of the practice in vaccination efforts through:

- Consistent messaging about the importance of vaccines and about vaccine effectiveness and safety at all levels of the practice
- Adherence to proper vaccine storage, handling, and administration procedures
- Implementation of effective workflow processes to take advantage of every opportunity to vaccinate

Practices fostering support for vaccination:

- **Save time.**
Less time spent in vaccine conversations by involving practice staff in reinforcing vaccine recommendations and implementing effective workflow processes
- **Save money.**
Less money spent on lost vaccine by adhering to proper vaccine storage, handling, and administration practices
- **Empower families.**
Strengthened trust with families by helping patients and parents make informed decisions

NOTES

NOTES

Immunization Coordinator

It is an immunization delivery best practice for every provider setting to designate an immunization coordinator. This individual should be the provider site’s point person for activities such as:

- Ensuring all vaccines are stored and handled correctly within the practice
- Helping to ensure all staff are trained in their role in immunization delivery and patient education
- Monitoring the practice’s vaccination coverage
- Ensuring all staff know how to address questions from patients and parents so there is consistent messaging about vaccines
- Promoting and motivating staff implementation of immunization quality improvement strategies to improve immunization workflow, delivery, and, ultimately, vaccine uptake

By being familiar with the practice’s vaccination coverage and understanding more about why some patients are not up-to-date with their vaccines, providers can implement interventions to increase coverage in their practice.

Vaccines for Children (VFC) Program

Cost can be a barrier to vaccination for many patients. In addition to evaluating the fee schedules for possible adjustments, providers should be knowledgeable about the VFC program, the state’s Children’s Health Insurance Program, and other vaccine-focused programs available within their jurisdiction.

A provider should consider participating in the VFC program if the practice sees children and adolescents (age 18 years or younger) who meet one or more of the following criteria:

- Medicaid-eligible
- Uninsured
- American Indian or Alaska Native
- Underinsured (only eligible to receive vaccines in a federally qualified health center or rural health clinic)

Being a VFC provider reduces up-front costs because practices are provided vaccines for VFC-eligible children at no cost. Providers can charge an administrative fee to offset the cost of doing business. VFC-eligible patients benefit because they avoid having to go somewhere else to get the vaccines they need.

Vaccination Reminders for Providers

Providers can create reminder systems to help them remember which vaccinations a patient needs. Examples of reminder systems are:

- A computer-generated list that notifies a provider which children being seen during the clinic session are past due on vaccinations
- A stamp with a message such as “no pneumococcal vaccine on record” that staff can put on the chart of a person age 65 years or older
- A “vaccination due” clip that staff attaches to the chart of an adolescent who has not had HPV vaccine
- An electronic reminder that appears when a provider accesses an electronic health record

Reminder systems vary according to the needs of the provider. In addition to raising vaccination coverage in the practice, systems serve to heighten staff awareness of the need to continuously check the vaccination status of their patients.

Standing Orders

Standing orders are protocols whereby nonphysician medical personnel may vaccinate patients without direct physician involvement at the time of the vaccination. Standing orders are implemented in settings such as clinics, hospitals, and long-term care facilities. Standing orders have had positive effects on vaccination coverage among children and adults.

Standing order protocols should:

- Identify persons eligible for vaccination based on their age, their immunization status, or the presence of a medical condition putting them at high risk.
- Provide adequate information to patients or their parents regarding the risks and benefits of a vaccine and document the delivery of that information.
- Record patient refusals or medical contraindications.
- Record administration of a vaccine(s) and any postvaccination adverse events, according to institution- or physician-approved protocol.
- Provide documentation of vaccine administration to patients and their primary care providers.

Standing order protocols should also specify that vaccines be administered by health care personnel trained in screening patients for contraindications to vaccination, administering vaccines correctly, and monitoring patients for adverse events in accordance with state and local regulations.

NOTES

NOTES

Staff Education

Anyone responsible for administering vaccines should be knowledgeable about immunization principles, scheduling, safety and effectiveness, and proper administration techniques. Starting with the front office, each staff member should be aware of the importance of vaccines, educated on proper immunization practices and recommendations, and prepared to answer patient questions as related to their position. Numerous educational materials in a variety of formats are available from CDC and some state, local, and territorial health departments, hospitals, and other professional organizations.

Record-Keeping

Patient records are essential to a medical practice, and maintaining these records remains a critical part of providing optimal health care. Immunization records in particular must be accurate and meet all applicable legal requirements, as well as requirements of any specific program (such as the VFC program) in which the provider participates. These records should be available for compliance inspections and should be easy to interpret by anyone examining them.

Active medical records must reflect which patients are actually in the practice, and charts of persons who have moved or are obtaining services elsewhere should be clearly marked or removed. Records should be kept up to date as new vaccinations are administered, and all information regarding each vaccine and its administration should be complete.

Because patients often receive vaccines at more than one provider's office, communication between sites is essential for maintaining complete and accurate vaccination records. School-based, public health, and community-based vaccination sites should communicate with primary care personnel through quick and reliable methods. IISs provide the most seamless and comprehensive avenue for sharing information; however, e-mail, telephone, or fax can also be used. Using an IIS or other mechanism is increasingly important as more venues outside the medical home offer vaccinations.

