GOOD VACCINATION PRACTICES
the basics & beyond

the basics
highlighting some general vaccine administration guidelines

beyond
sharing vaccination strategies

• This resource is not meant to be a comprehensive resource.
• For more information, consult the professional standards for medication administration; product Prescribing Information; and guidelines from the Centers for Disease Control and Prevention (CDC), the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP), and your state health department or agency.
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Every office needs a vaccine coordinator, someone whose role is to coordinate the processes involved in administering vaccines.1

- The coordinator—a physician, nurse, or office manager—is responsible for items such as:
  - ordering and maintaining a vaccine inventory (e.g., keeping track of expiration dates) with necessary supplies
  - keeping track of medical protocols and staff competence
  - monitoring storage units and record keeping

- In addition, at least one other person in the office should be aware of these processes, to serve as backup and support to the vaccine coordinator.1

Visit the Centers for Disease Control and Prevention (CDC) website (www.cdc.gov) for checklists to start up a vaccination program in your practice.
Vaccines must be kept at the proper temperature at all times—this is called “maintaining the cold chain.” Vaccine storage units must be selected carefully and used properly. Refrigerators and freezers are available in different grades (household and purpose-built/pharmaceutical grade) and types (stand-alone, combination).  

- For vaccine storage, the CDC recommends purpose-built/pharmaceutical grade or stand-alone household units. These are self-contained units that only refrigerate or freeze, and are suitable for vaccine storage. A National Institute of Standards and Technology (NIST) study conducted in 2009 determined that stand-alone units maintain the required temperatures better than combination refrigerator/freezer units.

This section provides guidance on vaccine storage and equipment. Individual projects and state/local health department immunization programs may have specific requirements for providers who receive Vaccines for Children (VFC) vaccines or other vaccines purchased with public funds. Consult your immunization program for more information.

Check the Prescribing Information on the vaccine manufacturer’s website for specific storage temperature instructions.
Vaccine Storage Equipment

- Vaccines that require storage temperatures between +36°F and +46°F (+2°C and +8°C) should be stored in a stand-alone refrigerator unit.\(^2\)

- In the situation where a stand-alone refrigerator is not available, then the CDC recommends using a combination refrigerator/freezer unit for refrigerator vaccines only.\(^2\)

- Frozen vaccines should not be stored in the freezer compartment of a combination unit because NIST has found that household freezers cannot hold proper storage temperatures for frozen vaccines.\(^1\)

- A separate stand-alone freezer should be used to store frozen vaccines that require storage temperatures between -58°F and +5°F (-50°C and -15°C). A storage unit that is frost-free or has an automatic defrost cycle is preferred.\(^1,2\)

- CDC does not recommend the storage of any vaccine in a dormitory-style (or bar-style) combined refrigerator/freezer unit under any circumstances.\(^2\)

Visit [www.cdc.gov](http://www.cdc.gov) for more on storage units and thermometers.

This section provides guidance on vaccine storage and equipment. Individual projects and state/local health department immunization programs may have specific requirements for providers who receive Vaccines for Children (VFC) vaccines or other vaccines purchased with public funds. Consult your immunization program for more information.\(^2\)

Check the Prescribing Information on the vaccine manufacturer’s website for specific storage temperature instructions.
Vaccine Storage Equipment

Vaccine Positioning in the Storage Equipment

- Place vaccines in the central area of the storage space and keep vaccines in their original packaging inside storage trays that are positioned 2 to 3 inches away from storage unit walls.²
- Food and beverages should not be stored in a vaccine storage unit.²

Refrigerator units:

- Vaccines should be placed away from the walls, floors and vents in the part of the unit best able to maintain the required temperature between +36°F and +46°F (+2°C and +8°C).²
- Vaccines should not be stored in the deli, fruit, and vegetable drawers, in the door, or on the floor of the unit.²

Freezer units:

- Vaccines should be stored away from the walls and vents in the part of the freezer best able to maintain the required temperature range between -58°F and +5°F (-50°C and -15°C).²
- Vaccines should never be stored in the freezer door.¹

This section provides guidance on vaccine storage and equipment. Individual projects and state/local health department immunization programs may have specific requirements for providers who receive Vaccines for Children (VFC) vaccines or other vaccines purchased with public funds. Consult your immunization program for more information.²

Check the Prescribing Information on the vaccine manufacturer’s website for specific storage temperature instructions.
Monitoring of Storage Units

- To ensure that refrigerators and freezers are maintaining the appropriate temperatures for vaccine storage, each unit should have a calibrated temperature monitoring device (TMD). The CDC recommends a specific type of TMD called a digital data logger (DDL).\(^2\)

- Temperatures for each unit should be read and documented a minimum of twice each workday, including recording the minimum and maximum temperatures once each day.\(^2\)

- The temperature readings should be documented on a temperature log. The temperature log should be posted on the door of the storage unit.\(^2\)

- The temperature data should be kept in a safe, retrievable place for at least 3 years or longer if required by your state.\(^2\)

- If a temperature is outside the recommended range (temperature excursion), the vaccine coordinator or supervisor should be notified without delay.\(^2\)

Visit the Clinic Tools at [www.immunize.org](http://www.immunize.org) for Vaccine Temperature Logs.

This section provides guidance on vaccine storage and equipment. Individual projects and state/local health department immunization programs may have specific requirements for providers who receive Vaccines for Children (VFC) vaccines or other vaccines purchased with public funds. Consult your immunization program for more information.\(^2\)

Check the Prescribing Information on the vaccine manufacturer’s website for specific storage temperature instructions.
Recommended Temperature Monitoring Devices

The CDC recommends thermometers with the following characteristics:

- Logging interval (or reading rate) that can be programmed by the user to measure and record temperatures no less frequently than every 30 minutes
- Detachable probe that best reflects vaccine temperatures (e.g., a probe buffered with glycol, glass beads, sand, or Teflon®)
- Include an alarm for out-of-range temperatures
- Be capable of showing current temperature as well as minimum and maximum temperatures
- Be within +/-0.5°C accuracy (+/-1°F)
- Have a low-battery indicator

Brands mentioned are trademarks of their respective owners.

This section provides guidance on vaccine storage and equipment. Individual projects and state/local health department immunization programs may have specific requirements for providers who receive Vaccines for Children (VFC) vaccines or other vaccines purchased with public funds. Consult your immunization program for more information. Check the Prescribing Information on the vaccine manufacturer’s website for specific storage temperature instructions.
Vaccine Storage Equipment

Power Supply for Storage Units

- Use a safety-lock plug or an outlet cover to reduce the chance of a unit becoming inadvertently unplugged.²

- Avoid using power outlets that can be activated by a wall switch or power strips. These can be tripped or switched off inadvertently.²

- Post a warning sign at the plug and on the refrigerator and freezer units alerting staff, janitors, etc. not to unplug the units.²

- Consider a back-up generator that automatically provides power to the storage units to maintain the recommended storage temperatures in the event of power outages.²

- Consider installing a temperature alarm to alert staff to temperature excursions.¹

This section provides guidance on vaccine storage and equipment. Individual projects and state/local health department immunization programs may have specific requirements for providers who receive Vaccines for Children (VFC) vaccines or other vaccines purchased with public funds. Consult your immunization program for more information.²

Check the Prescribing Information on the vaccine manufacturer’s website for specific storage temperature instructions.
Handling Improper Vaccine Storage Conditions

- Immediate corrective action should be taken to correct improper vaccine storage conditions, including inappropriate exposure to light for some vaccines and exposure to storage temperatures outside the recommended ranges.²

- Each facility should have a detailed written Emergency Vaccine Retrieval and Storage Plan in the event of refrigerator and/or freezer malfunctions, power failures, natural disasters, or other emergencies that might compromise appropriate vaccine storage conditions. The emergency plan should also be reviewed and updated annually.²

- Ensure staff members who administer or handle vaccines in any way are familiar with these plans. These plans should be easily accessible to staff and should be kept near the vaccine storage unit(s).²

- Visit the Clinic Tools at www.immunize.org for a Vaccine Storage Troubleshooting Record that can be used in the event of a refrigerator or freezer failure².

This section provides guidance on vaccine storage and equipment. Individual projects and state/local health department immunization programs may have specific requirements for providers who receive Vaccines for Children (VFC) vaccines or other vaccines purchased with public funds. Consult your immunization program for more information.²

Check the Prescribing Information on the vaccine manufacturer’s website for specific storage temperature instructions.
When vaccines arrive at the practice, enter the relevant information in a “Vaccine Stock Log” (available in the Vaccine Storage & Handling Toolkit at www.cdc.gov). You should consult the manufacturer’s Prescribing Information for appropriate storage and handling instructions for any vaccines you receive.¹,²

**General storage tips for selected vaccines that require REFRIGERATION at +36°F to +46°F (+2°C to +8°C)¹,²**

Vaccines that require temperature maintenance at +36°F to +46°F (+2°C to +8°C) will be delivered in an insulated container and should have the correct temperature range maintained at all times.

Store vaccines immediately at +36°F to +46°F (+2°C to +8°C); storage above or below the recommended temperature range may reduce potency.

**General storage tips for selected vaccines that require FREEZING at -58°F to +5°F (-50°C to -15°C)¹**

Vaccines that need to be kept frozen should be maintained between -58°F and +5°F (-50°C and -15°C); storage above or below the recommended temperature may reduce potency.

This section provides guidance on vaccine storage and equipment. Individual projects and state/local health department immunization programs may have specific requirements for providers who receive Vaccines for Children (VFC) vaccines or other vaccines purchased with public funds. Consult your immunization program for more information.²

Check the Prescribing Information on the vaccine manufacturer’s website for specific storage temperature instructions.
Ordering Vaccines

- Your vaccine coordinator should do a regular inventory of vaccines and diluents.¹
- Don’t stock more supplies than your practice needs.¹
- Check expiration dates on a weekly basis. Promptly remove expired product and diluent from the storage unit.¹
because vaccines must be stored properly as soon as they are delivered, arrange for vaccine deliveries only when the vaccine coordinator or back-up person is available.1

when a shipment arrives, open immediately and inspect for damage.1

packages may come with temperature indicators; check these to make sure the vaccine has not been exposed to improper temperatures. examine the shipping container and its contents for any evidence of damage during transport. maintain the cold chain—if it seems that the product has been exposed to too-low or too-high temperatures, or if anything else seems amiss, store the vaccine in a specially marked tray in the refrigerator or freezer, depending on the type of vaccine, and call the source of the shipment (eg, manufacturer, distributor) immediately for advice.1

as soon as a vaccine shipment arrives, enter the relevant information in a “vaccine stock log” (available in the vaccine storage & handling toolkit at www.cdc.gov).1,2

keep vials in their original boxes. shelve vaccine and diluent by date, with the shortest expiration in front. rotate your stock: when new product arrives, place it behind older stock.1
Storage and Handling Checklist

Checklist for Proper Vaccine Handling and Storage²

Do you have a routine storage and handling checklist?

- A checklist should include information for all aspects of vaccine inventory management, from ordering to monitoring storage conditions.

- Reviewing this list may help you improve your office’s vaccine management practices.

For resources, visit www.cdc.gov for the CDC Vaccine Storage & Handling Toolkit and www.immunize.org for the Vaccine Storage and Handling Clinical Tools.

Completion
You have completed Preparing to Vaccinate.
**Staff Training and Education**

- All personnel who will administer vaccines should receive competency-based training and education on vaccine administration before vaccinating patients.

- Providers need to orient new staff to vaccines used in their office and validate staff’s knowledge and skills about vaccine administration with a “Skills Checklist” (available for download in the Staff Education section).

- Providers should remember to include temporary personnel who may be filling in on days when the clinic is short staffed or helping during peak times such as flu season.

- A plan of action should be developed to help staff achieve the expected level of competency in any area requiring improvement.

- Continuing education should be provided for all staff on the use and administration of new vaccines, new schedules, and new or revised recommendations.
Before Vaccinating

Review Vaccination Schedules

• Since timing and spacing of vaccine doses are two important issues in the appropriate use of vaccines, providers should follow the currently recommended vaccination schedules that cover children, adolescents, and adults.1

• All appropriate vaccines should be administered during the same visit.1

• The most current schedules can be viewed and downloaded at www.cdc.gov, the Centers for Disease Control and Prevention’s (CDC) National Immunization Program website.3

Visit www.cdc.gov for the most current vaccination schedules.
Before Vaccinating

Review Manufacturers’ Guidelines for Individual Vaccines

- Follow the professional standards of vaccine administration and manufacturers’ guidelines. Consult ACIP, AAP, and CDC resources or your office vaccine coordinator as needed.¹

Know Contraindications and Warnings/Precautions for Individual Vaccines

- Because contraindications and warnings/precautions vary by vaccine, make sure you and your staff are familiar with and have access to the manufacturers’ labeling for all the vaccines you use in your practice.¹

- Complete Prescribing Information sheets should be furnished with vaccines, and are accessible on the manufacturers’ individual websites.¹
Screening the Patient¹

• All patients should be screened for contraindications, warnings, and precautions every time a vaccine is administered, even if the patient has previously received a dose of that vaccine.

• The patient’s status can change from one visit to the next or a new contraindication or precaution may have been added.

• Thorough screening for contraindications and precautions prior to vaccination can help prevent reactions.

• Many state immunization programs and other organizations have developed standardized screening tools. Consult your immunization program for more information or visit www.cdc.gov.¹

• Screening Questionnaires for Adult and Child Vaccination are available with the Clinic Tools at www.immunize.org.
Patient Education

- Health care providers should anticipate questions that parents or patients may have regarding the need for or safety of vaccination.\(^1\)

- Health care providers should have a basic understanding of how patients view vaccine risk.\(^1\)

- Developing effective ways to address vaccine safety concerns when they arise is imperative for vaccination providers.\(^1\)

- This can be accomplished by assessing patients’ specific concerns and information needs, providing them with accurate information, and referring them to credible sources for more information.\(^1\)

- Patient education materials can help encourage patients to receive recommended vaccinations. Patient education tools can be obtained online from the CDC at [www.cdc.gov].\(^1\)

- It is important to document when and why the patient or parent/guardian refuses vaccines.\(^1\)

Visit [www.cdc.gov](http://www.cdc.gov) for patient education tools on vaccination.
Before Vaccinating

**Provide VIS Sheets.¹**

- It is a federal requirement to give patients a copy of the relevant federal “Vaccine Information Statement” (VIS) for certain vaccines they are about to receive. If the patient is a minor, the VIS must be given to the parent or legal representative.

**What Are Vaccine Information Statements?¹**

- VISs are developed by the staff of the Centers for Disease Control and Prevention (CDC) and undergo intense scrutiny by panels of experts for accuracy. Each VIS provides information to properly inform the adult vaccinee or the minor child’s parent or legal representative about the risks and benefits of each vaccine. The VISs are not meant to replace interactions with health care providers, who should answer questions and address concerns that the vaccinee or the parent/guardian may have.

Visit [www.cdc.gov](http://www.cdc.gov) to obtain a complete set of current VISs.
Before Vaccinating

Where to Obtain Vaccine Information Statements¹

1. The Internet. All current VISs are available at:

   - The CDC: [http://www.cdc.gov](http://www.cdc.gov)
     VISs from this site can be downloaded as pdf files and printed.

2. Your State Health Department. CDC sends each state health department’s immunization program copies when a new VIS is published. The programs, in turn, can provide copies to providers within the state.

   Audio files for most VISs can be found on the Immunization Action Coalition website at [www.immunize.org/vis](http://www.immunize.org/vis).

   Text versions of VISs can also be accessed from CDC’s VIS Web page. These files are compatible with screen-reader devices for use by the vision-impaired.
While Vaccinating

• Wash hands. Use gloves as appropriate.¹

• Verify that you have selected the correct vaccines by comparing them to the physician’s written order.⁴

**Vaccine Preparation¹:**

• There are two general types of vaccines: live attenuated and inactivated. Both types of vaccines can be damaged by exposure to light and temperature fluctuations.

• For both types, rotate stock so that the vaccine with the earliest expiration date is always used first. Keep vials in their original boxes, and never use outdated vaccine.

• Some vaccines can be drawn from the vial and injected as is; others must be reconstituted (mixed with a diluent) before use.

• Agitate (shake) the vial to mix the vaccine thoroughly and obtain a uniform suspension prior to withdrawing each dose.

• Inspect vaccine visually for particulate matter and/or discoloration prior to administration. If problems are noted (eg, vaccine cannot be resuspended), the vaccine should not be administered.

Refer to the Prescribing Information on the vaccine manufacturer’s website for specific vaccine preparation instructions.
While Vaccinating

**Key steps in preparing ready-to-use vaccine**: 

- Remove the vaccine vial cap and wipe the rubber stopper with an alcohol pad.
- With the vial on the table, push the needle straight into the center of the vial’s rubber stopper.
- Withdraw all of the vaccine into the syringe. (If using a multi-dose vial, you’ll need to measure a single dose while drawing up. Always check the label for dosage.)
- Carefully remove the needle from the vial.

For handling instructions for specific vaccines, always refer to the supplied manufacturer’s guidelines.
**While Vaccinating**

**Key steps in preparing a vaccine that requires reconstitution:**

- First, wipe the rubber stoppers of the diluent and vaccine vials with an alcohol swab.⁵

- Withdraw all diluent from the vial with a syringe.⁵

- Inject diluent into the vial of vaccine and gently shake or rotate to mix.¹
  - Each diluent is specific to the corresponding vaccine in volume, sterility, pH, and chemical balance.¹

- Visually inspect the contents of the vial for particulate matter or discoloration. If the appearance does not match the description of the reconstituted vaccine or the vaccine will not dissolve, discard.¹

For vaccines requiring reconstitution, the vaccine must be either administered within the time guidelines specified in the manufacturer’s product information or discarded.¹

For handling instructions for specific vaccines, always refer to the supplied manufacturer’s guidelines.¹
While Vaccinating

**Helping prevent administration errors**

Here are some tips that can be implemented to help prevent administration errors in your practice:

- The shipping container and its contents should be examined for any evidence of damage.¹

- Store vaccine at proper temperature immediately upon arrival.¹

- Check the expiration date on the vaccine prior to use. Expired vaccine and diluent should never be used.¹

- Refer to the manufacturers’ guidelines for reconstitution, the proper site and mode for injection, and other specifics.¹

- Keep current vaccine reference materials and resources available for your staff.¹

- Provide patients with current Vaccine Information Statements (VISs) and educational materials.¹

- Verify that you have selected the correct vaccines by comparing them to the physician’s written order.⁴

- Triple check your work before you administer a vaccine.¹

Visit [www.cdc.gov](http://www.cdc.gov) for more information on vaccine administration (such as route of administration, needle size, etc.)
After Vaccinating

Follow proper medical waste disposal guidelines.¹,⁶

1. After injection, remove the needle and apply pressure to the injection site with a cotton ball or gauze.

2. Place an adhesive bandage over the injection site if bleeding is present.

3. Do NOT recap the needle.

4. Dispose of used needle in appropriate sharps disposal container.

CDC Guidelines on Accidental Needlesticks⁷

If you are stuck by a needle or get a patient’s blood in your eyes, nose, mouth, or on broken skin:

1. Immediately wash needlesticks and cuts with soap and water.

2. Flush splashes to the nose, mouth, or skin with water.

3. Irrigate your eyes with clean water, saline, or sterile irrigants.

4. Report the exposure to your employer and to the department responsible for managing exposure (eg, occupational health department, infection control department).

– Prompt reporting is important as post-exposure treatment may be recommended in some cases and may need to be started as soon as possible.

Visit the CDC website for more information.

The Clinician Consultation Center Post-Exposure Prophylaxis Hotline (PEPline), 1-888-448-4911, is available daily for occupational consultation from 11 AM – 8 PM EST (daily) and non-occupational consultation from 9 AM – 8 PM EST Monday – Friday and 11 AM – 8 PM EST on weekends and holidays.⁷
After Vaccinating

**Monitor patient for any signs of an adverse reaction.**

- Document any adverse event that the patient experiences following the vaccination and that becomes known to you, whether you think the vaccine caused the event or not.\(^1\)

- Report the adverse reaction to the appropriate vaccine manufacturer and submit the report to the Vaccine Adverse Event Reporting System (VAERS).\(^1\)

Visit www.vaers.hhs.gov to download VAERS forms and for more information.
After Vaccinating

**Patient Vaccination Recordkeeping – At the Clinic/Office**

- All vaccines administered should be fully documented in the patient’s permanent medical record.¹

  **Documentation includes:**¹

  1. date of administration
  2. vaccine manufacturer
  3. vaccine lot number
  4. site of vaccination
  5. name and title of the person who administered the vaccine and the address of the clinic or facility where the permanent record will reside
  6. Vaccine Information Statement (VIS), if applicable
     - date printed on the VIS
     - date VIS given to patient or parent/guardian

- Providers should update patients’ permanent medical records to reflect any documented episodes of adverse events.¹

- The CDC recommends that a refusal to receive certain vaccines also be documented in the patient’s record.¹
After Vaccinating

Patient Vaccination Recordkeeping — For the Patient

• Making sure the patient has a record of the vaccination(s) he or she just received is not required by federal law, but it is very important. If the patient has a personal record card, offer to update it. If not, fill out and give the patient a vaccination record card.¹

• On the patient’s vaccination record card, you should note the type of vaccine and the date it was given (month, day, and year).¹

• If applicable, remind patients to notify their primary care provider of the newly received vaccine.¹
Staff Training and Education

Training and Education¹

• All personnel who will administer vaccines should receive competency-based training and education on vaccine administration before providing vaccines to patients.

• Providers can orient new staff to vaccines used in their office and validate staff’s knowledge and skills about vaccine administration with a skills checklist.

• Providers should include temporary personnel who may be filling in on days when the clinic is short staffed or helping during peak times.

• A plan of action can be developed to help staff achieve the expected level of competency in any area requiring improvement.

• Continuing education should be provided for all staff on the use and administration of new vaccines, new schedules, and new or revised recommendations.

Skills Checklist for Vaccine Administration¹

This tool contains a selection of important skills and practices related to vaccine administration that can be used as an assessment tool for health care staff who administer vaccines.
Strategies for a Lasting Approach

Vaccination Strategies to Create a Lasting Approach

• Greater understanding of strategies to increase and sustain vaccination levels is necessary in order to create lasting, effective vaccination delivery systems. One strategy from the CDC is the AFIX approach.¹

The acronym stands for:¹

• **Assessment**

• **Feedback**

• **Incentives**

• **Exchange**

• The AFIX process consists of an assessment of current vaccination rates by a trained representative from the state or other immunization program, providing feedback to staff members on what the rates are, incentives to improve deficiencies and raise vaccination rates, and exchange of information and ideas among health care providers.¹
Assessment Increases Awareness

• Assessment refers to the evaluation of medical records to determine the vaccination rates for a defined group of patients as well as to provide targets for improvement.¹

• This step is critical because most health care professionals, while supportive of vaccination, do not have an accurate perception of their own rates.¹

• Assessment increases awareness of a provider’s actual situation and allows him or her to diagnose potential service delivery problems.¹

Visit www.cdc.gov for national, state, and local vaccination rates.
Feedback Leads to Change

• Feedback is the process of informing staff members about their performance in delivering 1 or more vaccines to a defined patient population.¹

• The work of assessment is of no use if the information is not fed back to the people who can make a change.¹

• Assessment together with feedback creates the awareness necessary for behavior change.¹

Visit www.cdc.gov for national, state, and local vaccination rates.
Incentives Help to Motivate

- Incentives can help to motivate staff to achieve desired rates.\(^1\)
- Incentives are extremely variable. No one thing will be effective for every provider.\(^1\)
- Incentives can help providers approach their task positively and create an atmosphere of teamwork.\(^1\)
- Incentives are opportunities for partnerships and collaboration.\(^1\)
  - Professional organizations or businesses have been solicited to publicize their vaccination efforts in a newsletter.\(^1\)
  - It also can lead to increased awareness about vaccination among diverse groups.\(^1\)

Visit [www.cdc.gov](http://www.cdc.gov) for national, state, and local vaccination rates.
Exchange of Information

- Exchange of information goes hand in hand with incentives. The more information providers have about their own vaccination rates, how they compare to the state norms and other providers in the community, and what strategies have been successful with other providers, the more knowledgeable and motivated they will be to increase their own rates.¹

- Staff members at all levels can benefit from the exchange of ideas about vaccination practices. Vaccination trainings can be combined with the sharing of ideas regarding actual situations.¹

- Exchanges can include¹:
  - What has worked and what hasn’t worked
  - What strategies have helped to streamline office procedures
  - Where to obtain helpful educational resources

Visit [www.cdc.gov](http://www.cdc.gov) for national, state, and local vaccination rates.
**Additional Strategies**

- **Recommendations to Parents and Reinforcement to Return**
  - The recommendation of a health care provider is a powerful motivator for patients to accept vaccinations.
  - In one study, adults who were initially reluctant were likely to receive a vaccination when the health care provider’s opinion of the vaccine was positive.
  - Without your help, patients may not understand that return visits are sometimes necessary. It is useful to patients to have the next appointment date in hand at the time they leave the office.

- **Reduction of Missed Opportunities**
  - Several studies have shown that eliminating missed opportunities could increase vaccination coverage by up to 20%.
  - Strategies designed to prevent missed opportunities have taken many different forms, they can be used alone or in combination. Examples include the following:
    - Standing orders
    - Provider education
    - Provider reminder and recall systems
Additional Strategies

• **Reminder and Recall Systems**
  • Both reminders and recall messages have been found to be effective in increasing attendance at clinics and improving vaccination rates in various settings.
  • Providers can create reminder and recall systems for themselves as well as patients.
    — Provider reminders
      • Computer-generated lists that notify the provider of the patient’s vaccinations that are past due
      • Adding a stamp on a patient’s chart with a message informing the provider what vaccine is due
      • Electronic Medical Record (EMR) flags
    — Patient reminders
      • Reminder card at time of check-out for next visit
      • Follow-up phone call
      • Follow-up postcard or letter
      • Follow-up e-mail
  • Reminder systems can vary, but regardless of the system, reminders can help increase vaccination rates as well as serve to heighten the awareness of staff members to continually check the vaccination status of their patients.
Additional Strategies

**Reduction of Barriers to Vaccination**

- Despite efforts by providers to adhere to appropriate vaccination practices, obstacles to patients being vaccinated may exist within the practice setting, sometimes unknown to the provider.

- Barriers to vaccination may be physical or psychological. Examples include the following:
  - Physical barriers
    - Waiting time
    - Distance
  - Psychological barriers
    - Unpleasant experience
    - Safety concerns

Visit www.cdc.gov for more information on the AFIX approach and the tools available.
references


