Immunization 101

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Presenter Disclosure Information

I, Katie Reilly, have been asked to disclose any significant relationships with commercial entities that are either providing financial support for this program or whose products or services are mentioned during my presentations. I have no relationships to disclose.

I may discuss the use of vaccines in a manner not approved by the U.S. Food and Drug Administration
  • But in accordance with ACIP recommendations
Outline

- Herd immunity
- Types of vaccines
- 2019 Childhood Immunization schedule
- Screening prior to vaccination
- Contraindications and precautions to vaccination
- Vaccine safety
- Vaccine Information Statements (VIS)
- Vaccine administration documentation requirements
- Vaccine adverse events and VAERS reporting
- Frequently Asked Questions
- Resources
Herd Immunity/Community Immunity

“A situation in which a sufficient proportion of a population is immune to an infectious disease (through vaccination and/or prior illness) to make its spread from person to person unlikely. Even individuals not vaccinated (such as newborns and those with chronic illnesses) are offered some protection because the disease has little opportunity to spread within the community.”

Retrieved from: http://www.cdc.gov/vaccines/terms/glossary.html#commimmunity

Photo credit: Courtesy: The National Institute of Allergy and Infectious Disease (NIAID)
Live Attenuated Vaccines

- Attenuated (weakened) form of the “wild” virus or bacterium
- Must replicate to produce an immune response
- Immune response virtually identical to natural infection
- Usually produce immunity with one dose (except those administered orally)
- Interference from circulating antibody
- Fragile: must be stored and handled carefully

- **Viral**: measles, mumps, rubella, vaccinia, varicella, zoster, yellow fever, rotavirus, intranasal influenza, oral polio*
- **Bacterial**: BCG*, oral typhoid

*not available in the USA

Inactivated Vaccines

• Cannot replicate, and therefore cannot cause infection
• Less affected by circulating antibody than live vaccine
• Always require multiple doses
• Immune response mostly humoral
• Antibody titer diminish with time
• May require periodic supplemental booster doses

• Whole cell vaccines:
  • Viral: polio, hepatitis A, rabies, influenza*
  • Bacterial: pertussis*, typhoid*, cholera, plague*

• Fractional vaccines
  • Subunits: hepatitis B, influenza, acellular pertussis, HPV, anthrax
  • Toxoids: diphtheria, tetanus

*not available in the USA

2019 Recommended Immunization Schedules for Persons 0-18 Years

MMWR 2019: 68(5);112–114

Available at:
https://www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html (CDC site, schedule with live links)
https://www.cdc.gov/mmwr/volumes/68/wr/mm6805a4.htm?s_cid=mm6805a4_w
https://www.cdc.gov/mmwr/volumes/68/wr/pdfs/mm6805-H.pdf
### Table 1
**Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger**
**United States, 2019**

These recommendations must be read in conjunction with the Notes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars in Table 1. To determine minimum intervals between doses, see the catch-up schedule (Table 2). School entry and adolescent vaccine age groups are shaded in gray.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Births</th>
<th>1 mo</th>
<th>2 mo</th>
<th>4 mo</th>
<th>6 mo</th>
<th>9 mo</th>
<th>12 mo</th>
<th>15 mo</th>
<th>18 mo</th>
<th>19-23 mos</th>
<th>2-3 yrs</th>
<th>4-6 yrs</th>
<th>7-10 yrs</th>
<th>11-12 yrs</th>
<th>13-15 yrs</th>
<th>16 yrs</th>
<th>17-18 yrs</th>
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</thead>
<tbody>
<tr>
<td>Mumps</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</td>
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<tr>
<td>Rotavirus (RV)</td>
<td>1st dose</td>
<td>2nd dose</td>
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<tr>
<td>Diptheria, tetanus, &amp; acellular pertussis (DTPa, &lt;7 yrs)</td>
<td>1st dose</td>
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<tr>
<td>Haemophilus influenzae type b (HiB)</td>
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<tr>
<td>Pneumococcal conjugate (PCV13)</td>
<td>1st dose</td>
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<tr>
<td>Inactivated poliovirus (IPV, &lt;18 yrs)</td>
<td>1st dose</td>
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<tr>
<td>Influenza (IV)</td>
<td>Annual vaccination 1 or 2 doses</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</td>
<td>4th dose</td>
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<tr>
<td>Influenza (LAIV)</td>
<td>Annual vaccination 1 or 2 doses</td>
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<td>2nd dose</td>
<td>3rd dose</td>
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<tr>
<td>Meningococcal A (MENGA)</td>
<td>Annual vaccination 1 dose only</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</td>
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<td>16th dose</td>
</tr>
<tr>
<td>Meningococcal C (MC) (4-valent MenACWY CRM197)</td>
<td>Annual vaccination 1 dose only</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</td>
<td>4th dose</td>
<td>5th dose</td>
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<td>14th dose</td>
<td>15th dose</td>
<td>16th dose</td>
</tr>
<tr>
<td>Tetanus, diphtheria, &amp; acellular pertussis (Tdap)</td>
<td>Annual vaccination 1 dose only</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</td>
<td>4th dose</td>
<td>5th dose</td>
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<td>14th dose</td>
<td>15th dose</td>
<td>16th dose</td>
</tr>
<tr>
<td>Human papillomavirus (HPV)</td>
<td>Annual vaccination 1 dose only</td>
<td>1st dose</td>
<td>2nd dose</td>
<td>3rd dose</td>
<td>4th dose</td>
<td>5th dose</td>
<td>6th dose</td>
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<td>13th dose</td>
<td>14th dose</td>
<td>15th dose</td>
<td>16th dose</td>
</tr>
</tbody>
</table>

**Notes:**
- Mumps: 1 dose at 12-15 months, 2 doses at 4-6 years.
- Rotavirus (RV): 1 dose at 2 months, 2 doses at 6 months.
- Diptheria, tetanus, & acellular pertussis (DTPa, <7 yrs): 1 dose at 2 months, 2 doses at 4 months.
- Haemophilus influenzae type b (HiB): 1 dose at 2 months, 1 dose at 4 months.
- Pneumococcal conjugate (PCV13): 1 dose at 2 months, 1 dose at 4 months.
- Inactivated poliovirus (IPV, <18 yrs): 1 dose at 2 months, 1 dose at 4 months.
- Influenza (IV): Annual vaccination 1 or 2 doses.
- Influenza (LAIV): Annual vaccination 1 or 2 doses.
- Meningococcal A (MENGA): Annual vaccination 1 dose only.
- Meningococcal C (MC) (4-valent MenACWY CRM197): Annual vaccination 1 dose only.
- Tetanus, diphtheria, & acellular pertussis (Tdap): Annual vaccination 1 dose only.
- Human papillomavirus (HPV): Annual vaccination 1 dose only.

**Separate row for LAIV**

**Hep A:** purple bar at 6-11 months, for infant travelers.

**Tdap:** new green & purple bands, 13-18 yo, to separate catch-up and pregnancy.
### Table 2: Catch-up immunization schedule for persons aged 4 months—18 years who start late or who are more than 1 month behind, United States, 2019

The figure below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child’s age. Always use this table in conjunction with Table 1 and the notes that follow.

#### Hib & PNU: criteria for ‘no further doses’ now listed 1st

**Note:**
- Hib: Haemophilus influenzae type b
- PNU: Pneumococcal

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Minimum Age for First Dose</th>
<th>Minimum Interval Between Doses</th>
<th>Dose 1 to Dose 2</th>
<th>Dose 2 to Dose 3</th>
<th>Dose 3 to Dose 4</th>
<th>Dose 4 to Dose 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hib &amp; PNU</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>6 weeks</td>
<td>6 weeks</td>
<td>6 weeks</td>
<td>6 months</td>
</tr>
<tr>
<td>Pneumococcal conjugate vaccine</td>
<td>6 weeks</td>
<td>4 weeks</td>
<td>4 weeks</td>
<td>6 months</td>
<td>6 months</td>
<td>6 months</td>
</tr>
<tr>
<td>Inactivated polio vaccine</td>
<td>6 weeks</td>
<td>6 weeks</td>
<td>6 months</td>
<td>6 months</td>
<td>6 months</td>
<td>6 months</td>
</tr>
<tr>
<td>Mumps, measles, rubella vaccine</td>
<td>6 weeks</td>
<td>6 months</td>
<td>6 months</td>
<td>6 months</td>
<td>6 months</td>
<td>6 months</td>
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<tr>
<td>Measles, mumps, rubella vaccine</td>
<td>6 months</td>
<td>6 months</td>
<td>6 months</td>
<td>6 months</td>
<td>6 months</td>
<td>6 months</td>
</tr>
</tbody>
</table>

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**Children and adolescents age 7 through 13 years**

- Haemophilus: Haemophilus influenzae type b
- Pneumococcal: Pneumococcus
- Inactivated polio vaccine: Poliovirus
- Mumps: Measles
- Measles, mumps, rubella vaccine: Measles, mumps, rubella

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**Note:**
- Hib: Haemophilus influenzae type b
- PNU: Pneumococcal

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**Centers for Disease Control and Prevention | Recommended Child and Adolescent Immunization Schedule, United States, 2019 | Page 3**
Tips when Using the Catch-up Schedule

Use the catch-up schedule when the patient is in your office:

- And is more than 1 month delayed on the routine vaccination schedule
- To determine if a vaccine dose can be administered today, or not
- To determine when the next dose is due

You need to know:

- Current age of patient
- For the vaccine in question, dates of prior vaccine doses (if any) and ages at which those doses were administered
- Health status of the patient

Once the patient is ‘caught up’, return to using the routine vaccination schedule
Table 3: Recommended Child and Adolescent Immunization Schedule by Medical Indication
United States, 2019

<table>
<thead>
<tr>
<th>INDICATION</th>
<th>Pregnancy</th>
<th>HIV Infection CD4+ count</th>
<th>&lt;15% and total CD4 cell count of &lt;200/mm³</th>
<th>&lt;15% and total CD4 cell count of ≥200/mm³</th>
<th>Kidney failure, end-stage renal disease, or hemodialysis</th>
<th>Heart disease, chronic lung disease</th>
<th>CSF leaks or cerebral implants</th>
<th>Apnea and persistent component deficiencies</th>
<th>Chronic liver disease</th>
<th>Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B</td>
<td></td>
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<tr>
<td>Rotavirus</td>
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<tr>
<td>Diphtheria, tetanus, &amp; acellular pertussis (DTaP)</td>
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<tr>
<td>Measles, mumps, rubella</td>
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<tr>
<td>Varicella</td>
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<tr>
<td>Hepatitis A</td>
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<tr>
<td>Meningoconjunctival (M + W)</td>
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<td>Tetanus, diphtheria, &amp; acellular pertussis (DTaP)</td>
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<tr>
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</tbody>
</table>

- Added a row for LAIV
- Pregnancy cell in Men B changed to orange precaution color (had been white)
- Narrative text added to define contraindication and precaution
- New pink color: delay IZ until after pregnancy if IZ indicated
Screening

• Is key to preventing serious adverse reactions

• Specific questions intended to identify contraindications or precautions to vaccination

• Screening must occur at every immunization encounter (not just before the first dose)

• Use of a standardized form will facilitate effective screening

Immunization Action Coalition (IAC) Screening Forms

- Child and Teen Immunizations
- Adult Immunizations
- Seasonal Influenza

http://www.immunize.org/handouts/screening-vaccines.asp
Contraindication and Precautions

Contraindication

- A condition that increases the likelihood of a serious adverse reaction to a vaccine for a patient with that condition.
- In general, a vaccine should not be administered when a contraindication is present.

Precaution

- A condition in a recipient that might increase the risk for a serious adverse reaction, might cause diagnostic confusion, or might compromise the ability of the vaccine to produce immunity.
- In general, vaccinations should be deferred when a precaution is present. However, a vaccination might be indicated in the presence of a precaution if the benefit of protection from the vaccine outweighs the risk for an adverse reaction.

https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html
Contraindications & Precautions

Summary Table Published Annually by CDC with U.S. Adult & Childhood Schedules

Childhood Summary Table: http://www.immunize.org/catg.d/p3072a.pdf

Adult Summary Table: http://www.immunize.org/catg.d/p3072.pdf
# Contraindications and Precautions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Live</th>
<th>Inactivated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergy to Component</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Encephalopathy</td>
<td>---</td>
<td>C¹</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>C</td>
<td>V²</td>
</tr>
<tr>
<td>Immunosuppression</td>
<td>C</td>
<td>V</td>
</tr>
<tr>
<td>Moderate/severe illness</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Recent blood product</td>
<td>P³</td>
<td>V</td>
</tr>
</tbody>
</table>

- **C** = Contraindication
- **P** = Precaution
- **V** = Vaccinate if indicated
- **C¹** = Only if occurs ≤ 7 days of a pertussis-containing vaccine
- **V²** = Except HPV
- **P³** = MMR and varicella-containing (except zoster vaccine and LAIV)

Note: SCID and intussusception are contraindications to the rotavirus vaccine

Importance of Vaccine Safety

Decreases in disease risks and increased attention on vaccine risks

Public confidence in vaccine safety critical
- Higher standard of safety is expected of vaccines
- Vaccinees generally healthy (vs. ill for drugs)
- Lower risk tolerance = need to search for rare reactions
- Vaccination universally recommended and mandated

http://www.cdc.gov/vaccines/pubs/pinkbook/safety.html
The Journey of Your Child’s Vaccine

Before a new vaccine is ever given to people, extensive lab testing is done that can take several years. Once testing in people begins, it can take several more years before clinical studies are complete and the vaccine is licensed.

How a new vaccine is developed, approved and manufactured

The Food and Drug Administration (FDA) sets rules for the three phases of clinical trials to ensure the safety of the volunteers. Researchers test vaccines with adults first.

PHASE 1
- 20-100 healthy volunteers
- Is this vaccine safe?
- Does this vaccine seem to work?
- Are there any serious side effects?
- How is the size of the dose related to side effects?

PHASE 2
- Several hundred volunteers
- What are the most common short-term side effects?
- How are the volunteers’ immune systems responding to the vaccine?

PHASE 3
- Hundreds or thousands of volunteers
- How do people who get the vaccine and people who do not get the vaccine compare?
- Is the vaccine safe?
- Is the vaccine effective?
- What are the most common side effects?

FDA licenses the vaccine only if: It’s safe and effective. Benefits outweigh risks.

FOR MORE INFORMATION, VISIT HTTPS://WWW.FDA.GOV/CBER

How a vaccine is added to the U.S. Recommended Immunization Schedule

The Advisory Committee on Immunization Practices (ACIP) is a group of medical and public health experts. Members of the American Academy of Pediatrics (AAP) and American Academy of Family Physicians (AAFP) are among some of the groups that also bring related immunization expertise to the committee. This group carefully reviews all available data about the vaccine from clinical trials and other studies to develop recommendations for vaccine use. The ACIP continues to monitor vaccine safety and effectiveness data even after the vaccine’s routine use and may change or update recommendations based on that data.

When making recommendations, ACIP considers:
- How safe is the vaccine when given at specific ages?
- How well does the vaccine work at specific ages?
- How serious is the disease this vaccine prevents?
- How many children would get the disease the vaccine prevents if we didn’t have the vaccine?

ACIP recommendations are not official until the CDC Director reviews and approves them and they are published. These recommendations then become part of the United States official childhood immunization schedule.

New vaccine to protect your child against a disease is added to the schedule.

For more information, visit https://www.cdc.gov/vaccines
How a vaccine’s safety continues to be monitored

FDA and CDC closely monitor vaccine safety after the public begins using the vaccine. The purpose of monitoring is to watch for adverse events (possible side effects). Monitoring a vaccine after it is licensed helps ensure that possible risks associated with the vaccine are identified.

Vaccine Adverse Event Reporting System (VAERS)
VAERS collects and analyzes reports of adverse events that happen after vaccination. Anyone can submit a report, including parents, patients and healthcare professionals.

Vaccine Safety Datalink (VSD) and Post-Licensure Rapid Immunization Safety Monitoring (PRISM)
Two networks of healthcare organizations across the U.S.
- VSD can analyze healthcare information from over 24 million people.
- PRISM can analyze healthcare information from over 190 million people.
Scientists use these systems to actively monitor vaccine safety.

Clinical Immunization Safety Assessment Project (CISA)
CISA is a collaboration between CDC and 7 medical research centers.
- Vaccine safety experts assist U.S. healthcare providers with complex vaccine safety questions about their patients.
- CISA conducts clinical research studies to better understand vaccine safety and identify prevention strategies for adverse events following immunization.

Vaccine recommendations may change if safety monitoring reveals new information on vaccine risks (like if scientists detect a new serious side effect).

For more information, visit https://www.cdc.gov/vaccinesafety
The Provider’s Role

Immunization providers can help to ensure the safety and efficacy of vaccines through proper:

- Vaccine storage and administration
- Timing and spacing of vaccine doses
- Observation of contraindications and precautions
- Management of adverse reactions
- Reporting to VAERS
- Benefit and risk communication

http://www.cdc.gov/vaccines/pubs/pinkbook/safety.html
Seven Rights of Vaccine Administration

• Right Patient
• Right Time
• Right Vaccine (and Diluent)
• Right Dosage
• Right Route, Needle, Technique
• Right Injection Site
• Right Documentation

http://www.immunize.org/technically-speaking/20141101.asp
### Influenza Vaccine Products for the 2019–2020 Influenza Season

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Trade Name (vaccine abbreviation)</th>
<th>How Supplied</th>
<th>Mercury Content (µg/mL)</th>
<th>Age Range</th>
<th>CVX Code</th>
<th>Vaccine Product Billing Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>AstraZeneca</td>
<td>FluMist (LAI/IV)</td>
<td>0.2 mL (single-use nasal spray)</td>
<td>0</td>
<td>2 through 49 years</td>
<td>149</td>
<td>00672</td>
</tr>
<tr>
<td>GlaxoSmithKline</td>
<td>Fluarix (IV4)</td>
<td>0.5 mL (single-dose syringe)</td>
<td>0</td>
<td>6 months &amp; older1</td>
<td>150</td>
<td>06065</td>
</tr>
<tr>
<td></td>
<td>Fluzone (IV4)</td>
<td>0.5 mL (single-dose syringe)</td>
<td>0</td>
<td>6 months &amp; older1</td>
<td>150</td>
<td>06068</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.0 mL (multi-dose vial)</td>
<td>&lt;25</td>
<td>6 months &amp; older1</td>
<td>138</td>
<td>00688</td>
</tr>
<tr>
<td>Sanofi Pasteur</td>
<td>Fluad (IV4)</td>
<td>0.5 mL (single-dose syringe)</td>
<td>0</td>
<td>18 years &amp; older</td>
<td>185</td>
<td>06082</td>
</tr>
<tr>
<td></td>
<td>Fluzone (IV4)</td>
<td>0.25 mL (single-dose syringe)</td>
<td>0</td>
<td>6 through 35 months1</td>
<td>161</td>
<td>06083</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 mL (single-dose syringe)</td>
<td>0</td>
<td>6 months &amp; older1</td>
<td>150</td>
<td>06065</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 mL (single-dose vial)</td>
<td>0</td>
<td>6 months &amp; older1</td>
<td>150</td>
<td>06066</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.0 mL (multi-dose vial)</td>
<td>25</td>
<td>6 through 35 months1</td>
<td>138</td>
<td>06067</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.0 mL (multi-dose vial)</td>
<td>25</td>
<td>3 years &amp; older</td>
<td>158</td>
<td>06088</td>
</tr>
<tr>
<td></td>
<td>Fluzone High-Dose (IV3-HD)</td>
<td>0.5 mL (single-dose syringe)</td>
<td>0</td>
<td>65 years &amp; older</td>
<td>135</td>
<td>06062</td>
</tr>
<tr>
<td>Seqirus</td>
<td>Afluria (IV4)</td>
<td>0.25 mL (single-dose syringe)</td>
<td>0</td>
<td>6 through 35 months1</td>
<td>161</td>
<td>06063</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 mL (single-dose syringe)</td>
<td>0</td>
<td>3 years &amp; older1</td>
<td>150</td>
<td>06066</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.0 mL (multi-dose vial)</td>
<td>24.5</td>
<td>6 through 35 months1</td>
<td>138</td>
<td>06067</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.0 mL (multi-dose vial)</td>
<td>24.5</td>
<td>3 years &amp; older</td>
<td>158</td>
<td>06068</td>
</tr>
<tr>
<td></td>
<td>Fluad (IV3)</td>
<td>0.5 mL (single-dose syringe)</td>
<td>0</td>
<td>65 years &amp; older</td>
<td>168</td>
<td>06051</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 mL (single-dose syringe)</td>
<td>0</td>
<td>4 years &amp; older</td>
<td>171</td>
<td>06074</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.0 mL (multi-dose vial)</td>
<td>25</td>
<td>4 years &amp; older</td>
<td>186</td>
<td>06075</td>
</tr>
</tbody>
</table>

**Notes**

1. LAIV = live attenuated influenza vaccine (injectable); QIV = quadrivalent inactivated influenza vaccine (injectable); trivalent influenza vaccine (injectable); VI = inactivated trivalent influenza vaccine.
2. An administration code should always be reported in addition to the vaccine product code. Note: Third party payers may have specific policies and guidelines that might require providing additional information on their claim forms.
3. Dosing for infants and children aged through 35 months:
   - Afluria 0.25 mL
   - Fluarix 0.5 mL
   - Fluzone 0.5 mL or 0.6 mL
4. Afluria is approved by the Food and Drug Administration for intramuscular administration with the Ph Eurject Safety Needle-Free Injection System for persons age 18 through 64 years.

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# Administering Vaccines:
## Dose, Route, Site, and Needle Size

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Dose</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphtheria, Tetanus, Pertussis (DTP, DT, Tdap, Td)</td>
<td>0.5 mL</td>
<td>IM</td>
</tr>
<tr>
<td>Haemophilus influenzae type b (Hib)</td>
<td>0.5 mL</td>
<td>IM</td>
</tr>
<tr>
<td>Hepatitis A (HepA)</td>
<td>≥18 yrs: 0.5 mL, ≥19 yrs: 1.0 mL</td>
<td>IM</td>
</tr>
<tr>
<td>Hepatitis B (HepB)</td>
<td>Envelop: 0.5 mL, Hemophilus HB: 1.0 mL</td>
<td>IM</td>
</tr>
<tr>
<td>Human papillomavirus (HPV)</td>
<td>0.5 mL</td>
<td>IM</td>
</tr>
<tr>
<td>Influenza, live attenuated (LAIV)</td>
<td>0.2 mL (0.1 mL in each nostril)</td>
<td>Intranasal spray</td>
</tr>
<tr>
<td>Influenza, inactivated (IV), for ages 6-36 months</td>
<td>FluA: 0.25 mL, FluB: 0.25 or 0.5 mL</td>
<td>IM</td>
</tr>
<tr>
<td>Measles, Mumps, Rubella (MMR)</td>
<td>0.5 mL</td>
<td>Subcut</td>
</tr>
<tr>
<td>Meningococcal serogroups A, C, W, Y (MenACWY)</td>
<td>0.5 mL</td>
<td>IM</td>
</tr>
<tr>
<td>Meningococcal serogroup B (MenB)</td>
<td>0.5 mL</td>
<td>IM</td>
</tr>
<tr>
<td>Pneumococcal conjugate (PCV)</td>
<td>0.5 mL</td>
<td>IM</td>
</tr>
<tr>
<td>Pneumococcal polysaccharide (PPSV)</td>
<td>0.5 mL</td>
<td>IM or Subcut</td>
</tr>
<tr>
<td>Polio, inactivated (IPV)</td>
<td>0.5 mL</td>
<td>IM or Subcut</td>
</tr>
<tr>
<td>Rotavirus (RV)</td>
<td>Rotarix: 1.0 mL, Rotarix: 2.0 mL</td>
<td>Oral</td>
</tr>
<tr>
<td>Varicella (VZV)</td>
<td>0.5 mL</td>
<td>Subcut</td>
</tr>
<tr>
<td>Zoster (Zostavax)</td>
<td>Shingrix: 0.5 mL, Zostavax: 0.65 mL</td>
<td>IM</td>
</tr>
</tbody>
</table>

### Injection Site and Needle Size

**Subcutaneous (Subcut)** injection
Use a 23–25 gauge needle. Choose the injection site that is appropriate to the person’s age and body mass.

<table>
<thead>
<tr>
<th>AGE</th>
<th>NEEDLE LENGTH</th>
<th>INJECTION SITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants (1–12 mos)</td>
<td>½”</td>
<td>Fatty tissue over anterolateral thigh muscle</td>
</tr>
<tr>
<td>Children 12 mos or older, adolescents, and adults</td>
<td>½”</td>
<td>Fatty tissue over anterolateral thigh muscle or fatty tissue over triceps</td>
</tr>
</tbody>
</table>

**Intramuscular (IM) injection**
Use a 22–25 gauge needle. Choose the injection site and needle length that is appropriate to the person’s age and body mass.

<table>
<thead>
<tr>
<th>AGE</th>
<th>NEEDLE LENGTH</th>
<th>INJECTION SITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newborns (1st 28 days)</td>
<td>½”</td>
<td>Anterolateral thigh muscle</td>
</tr>
<tr>
<td>Infants (1–12 mos)</td>
<td>1”</td>
<td>Anterolateral thigh muscle</td>
</tr>
<tr>
<td>Toddlers (1–2 years)</td>
<td>½”-1”</td>
<td>Anterolateral thigh muscle</td>
</tr>
<tr>
<td>Children (3–10 years)</td>
<td>1”-1½”</td>
<td>Deltoid muscle of arm</td>
</tr>
<tr>
<td>Adolescents and teens (11–18 years)</td>
<td>1½”-2”</td>
<td>Deltoid muscle of arm</td>
</tr>
<tr>
<td>Adults 19 years or older</td>
<td>2½”-3”</td>
<td>Anterolateral thigh muscle</td>
</tr>
</tbody>
</table>

* A ½” needle may be used in newborns, preterm infants, and patients weighing less than 15 lbs (6.8 kg) for IM injection in the deltoid muscle only if the skin is stretched tight, the subcutaneous tissue is well-developed, and the injection is made deep into the muscle. **The use of a ½” needle is not recommended for infants weighing 15 lbs (6.8 kg) or more.***
Vaccine Information Statements (VISs)

Healthcare provider requirements

- Public and private providers
- Give VISs before vaccine is administered
- Applies to every dose of a vaccine series not just the first dose
- Opportunities for questions should be provided before each vaccination
- Available in multiple languages
- If using a combination vaccine, give VISs for each component of the vaccine, or use the Multi-Vaccine VIS, which covers some of the combination vaccines

http://www.cdc.gov/vaccines/hcp/vis/about/facts-Vis.html#give
Your Sources for VISs

http://www.cdc.gov/vaccines/hcp/vis/index.html

Get Email Updates

To receive email updates about this page, enter your email address:

Email Address

What's this? Submit

http://www.immunize.org/vis/

Current VIS Dates

Check your stock of VISs against this list. If you have outdated VISs, get current versions.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Date</th>
<th>Vaccine Type</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenovirus</td>
<td>6/11/14</td>
<td>Multi-vaccine</td>
<td>8/15/19</td>
</tr>
<tr>
<td>Anthrax</td>
<td>3/21/18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholera</td>
<td>7/6/17</td>
<td>PCV13</td>
<td>11/5/15</td>
</tr>
<tr>
<td>DTaP</td>
<td>9/24/18</td>
<td>PPSV</td>
<td>11/5/15</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>7/20/16</td>
<td>Polio</td>
<td>7/20/16</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>8/15/19</td>
<td>Rabies</td>
<td></td>
</tr>
<tr>
<td>Hib</td>
<td>4/2/15</td>
<td>Rotavirus</td>
<td>2/23/18</td>
</tr>
<tr>
<td>HPV</td>
<td>12/2/16</td>
<td>Tet</td>
<td></td>
</tr>
<tr>
<td>Influenza</td>
<td>8/15/19</td>
<td>Tetanus</td>
<td></td>
</tr>
<tr>
<td>J enceph.</td>
<td>8/15/19</td>
<td>Typhoid</td>
<td></td>
</tr>
<tr>
<td>MMR</td>
<td>9/15/19</td>
<td>Typhoid</td>
<td></td>
</tr>
<tr>
<td>MMR</td>
<td>9/15/19</td>
<td>Yellow fever</td>
<td></td>
</tr>
<tr>
<td>MMR</td>
<td>9/15/19</td>
<td>Zoster</td>
<td></td>
</tr>
</tbody>
</table>

PRINT VERSION
Healthcare Provider Documentation Requirements

Providers must ensure that the recipient's permanent medical record (whether paper-based or electronic) contains all of the required vaccine administration documentation, which shall consist of the following:

• Date of administration of the vaccine
• Vaccine manufacturer and lot number of the vaccine
• Name and title of person administering the vaccine
• Address of clinic where vaccine was given
• The address of the facility where the permanent record will reside (if appropriate)
• Edition date printed on the appropriate VIS
• Date the VIS was given to the vaccine recipient, or the parents/legal representative

• We also recommend that the vaccine type, dose, site, route of administration, and vaccine expiration date be documented, and any vaccine refusal (if appropriate).

# MDPH Vaccine Administration Record

**Vaccine Administration Record – All Ages**

**Record No. / Insurance No.:**

- **Patient Name:**
- **Address:**
- **Birth Date:**
- **Gender:**

**Vaccine administrator:** Provide the patient, parent or legal representative with the most recent copy of the Vaccine Information Statement (VIS), which explains risks and benefits of vaccine, for each dose of vaccine given.

**Type of Vaccine:** Record the generic abbreviation for the type of vaccine given (e.g., DTaP), not the trade name. For combination vaccines, indicate the type (e.g., DTaP-Hib) and all other information for each individual antigen (e.g., in the DTP and Hib sections) comprising the combination. Document all lot numbers for each component.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Type of Vaccine</th>
<th>Date Given M/D/Y</th>
<th>Dose</th>
<th>Route (PO, SC, IM, ID, IN, IM)</th>
<th>Site (RA, LA, RT, LT)</th>
<th>Vaccine Information Statement</th>
<th>Vaccine Admin Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hepatitis B</strong></td>
<td>(e.g., HepB, HepB- Con, HepB-Hib, DTaP-HepB-IPV, HepA-HepD)</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
</tr>
<tr>
<td><strong>Diphtheria, Tetanus, Pertussis</strong></td>
<td>(e.g., DTP, DTaP, DT, DTaP-Hib, DTaP-IPV/Hib, DTaP-HepB-IPV, DTaP-IPV, Td, Tdap)</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
</tr>
<tr>
<td><strong>Haemophilus influenzae</strong> type b</td>
<td>(e.g., Hib, HepB-Hib, DTaP-Hib, DTaP-IPV/Hib, Hib-MenCY)</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
</tr>
<tr>
<td><strong>Polio</strong></td>
<td>(e.g., IPV, DTaP-IPV/Hib, DTaP-HepB-IPV, HepA-HepD)</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
<td>IM</td>
</tr>
</tbody>
</table>

MIIS Overview

1. Secure, confidential web-based system capable of electronic data exchange and direct data entry

2. Assists providers with clinical decisions
   - Helps identify due or overdue immunizations
   - Prevents over/under immunization

3. Includes practice management tools
   - Patient immunization and vaccine usage reports
   - Tracks over 3.2 million doses of vaccine distributed by MDPH annually

4. Provides infrastructure for tracking essential information during public health emergencies
MIIS Data over time...

2011
- Total Sites: 9
- Total Patients: 3,902
- Total Shots: 69,505

2013
- Total Sites: 341
- Total Patients: 1,539,629
- Total Shots: 7,303,293

2015
- Total Sites: 1,121
- Total Patients: 4,427,623
- Total Shots: 33,334,571

2017
- Total Sites: 2,223
- Total Patients: 6,241,144
- Total Shots: 46,241,144

2019
- Total Sites: 2,580
- Total Patients: 7,356,518
- Total Shots: 60,083,720
MIIS Compliance Timeline

As of today, all providers should be reporting to the MIIS.

If you are not yet reporting to the MIIS, visit the ContactMIIS Resource Center @ www.ContactMIIS.info to learn about Onboarding!
Vaccine Adverse Reactions

Adverse reaction
  • extraneous effect caused by vaccine
  • side effect

Adverse event
  • any medical event following vaccination
  • may be true adverse reaction
  • may be only coincidental

Vaccine Adverse Reactions

Local
- Pain, swelling, redness at site of injection
- Common with inactivated vaccines
- Usually mild and self-limited

Systemic
- Fever, malaise, headache
- Nonspecific
- May be unrelated to vaccine

Severe Allergic (anaphylaxis)
- Due to vaccine or vaccine component
- Rare
- Risk minimized by screening

Vaccine Adverse Event Reporting System (VAERS)

- Jointly administered by the CDC & FDA
- Receives ~30,000 reports per year
- National reporting system
- Passive—depends on health care providers and others to report
- Detects:
  - New or rare events
  - Increases in rates of known events
  - Patient risk factors
- VAERS cannot establish causality, additional studies would be needed

What to Report to VAERS

- Any clinically significant or medically important adverse event following immunization even if you are not certain the vaccine caused the event
- Some examples of adverse events to report
  - Local: redness, swelling, pain at injection site
  - Systemic: fever, myalgia, headache
  - Allergic: hives, pruritus, anaphylaxis
  - Vaccination errors (e.g., wrong drug administered)
- The National Childhood Vaccine Injury Act mandates healthcare providers also report specific adverse events that occur after vaccination
  - Events listed in the Table of Reportable Events
    - [https://vaers.hhs.gov/docs/VAERS_Table_of_Reportable_Events_Following_Vaccination.pdf](https://vaers.hhs.gov/docs/VAERS_Table_of_Reportable_Events_Following_Vaccination.pdf)
VAERS Form

- One page online form, found at: https://vaers.hhs.gov/

- Asks for information on:
  - Patient
  - Vaccine
  - Adverse event
  - Outcome of adverse event
Tips to Increase Immunization Rates

Incorporate measures to improve vaccination rates
  • Strong routine recommendation for vaccines
  • Reminder/recall
  • Standing orders/vaccine only visits
  • Speak from personal experience
  • Provide information in foreign languages
  • Avoid “missed opportunities”

What you say matters.

*How you say it matters even more!*
Providers Play a Key Role in Vaccination

1. Assume parents will vaccinate
   - Parents not ready to vaccinate?

2. Give your strong recommendation
   - Parents have specific questions or concerns?

3. Listen to and respond to parent’s questions
   - Parents respond positively to your answers?

Administer recommended vaccine doses

Talking with Parents about Vaccines for Infants
https://www.cdc.gov/vaccines/hcp/conversations/conv-materials.html
CDC Provider Resources for Vaccine Conversations with Parents

Talking to Parents about Vaccines
Many parents have questions about their children's vaccines, and answering their questions can help parents feel in control of their child's health outcomes. The vaccines are safe and effective. The materials can help health care professionals start or continue conversations with parents. The materials include proven communication strategies and tips for effectively addressing questions parents may have. These conversations will help prevent parents from choosing to immunize their child according to the CDC's recommended immunization schedule. The materials are intended to help health care professionals start or continue conversations with parents.

Talking with Parents about Vaccines for Infants
For health care professionals
These two resources are companion pieces that are intended to be used together.

Tips and Time-savers for Talking with Parents About HPV Vaccine
Understanding Vaccines and Vaccine Safety
Diseases and the Vaccines that Prevent Them – For Parents of Infants and Young Children (Birth through Age 6)
Diseases and the Vaccines that Prevent Them – For Parents of Preteens and Teens (7 through 18 years old)

https://www.cdc.gov/vaccines/hcp/conversations/conv-materials.html
What If Parents Don’t Trust CDC?

Refer to other credible websites:

- American Academy of Pediatrics Healthy Children:
  - www.healthychildren.org
- Children’s Hospital of Philadelphia Vaccine Education Center:
  - https://www.chop.edu/centers-programs/vaccine-education-center
- Vaccinate Your Family:
  - www.vaccinateyourfamily.org
- Immunization Action Coalition
  - http://www.immunize.org/talking-about-vaccines/
- Voices for Vaccines:
  - https://www.voicesforvaccines.org/
Frequently Asked Questions
Pediatric Flu Vaccine Dosing

For children aged 6 through 35 months of age, four IIV products are currently licensed by the FDA.

- FluLaval: 0.5 mL
- Fluarix: 0.5 mL
- Afluria: 0.25mL
- Fluzone: 0.25 mL or 0.5mL

Providers should ensure that patients 6-35 months receive the correct dose volume, depending on the formulation used.

Please Note: Children 6 months through 8 years who are receiving flu vaccine for the first time or who have had a total of only 1 dose of flu vaccine in any previous seasons will need 2 doses separated by ≥ 4 weeks. The 2 doses do not need to be the same product.
**DTaP, Tdap, or Td?**

*Content taken from CDC’s Immunization Schedules, Immunization Action Coalition, and CDC’s General Best Practice Guidelines for Immunization*

**DTaP**
- 6 weeks thru 6 years
- Minimum age for Kinrix or Quadracel is 4 years
- Primary series of 4 to 5 doses
- A 5th dose is not needed if 4th dose given at 4 y/o or older

**Td**
- 7 years and older

**Tdap**
- 7 years and older
- Routine vaccination at age 11 to 12 (even if a catch-up Tdap was given at age 7-10)
- Everyone 11 years and older should have 1 dose (exception: repeat with each pregnancy)
- May give regardless of interval since last tetanus/diptheria vaccine

**TDaP given to person ≥7yrs**
- Count dose as valid

**Td given to child <7yrs as DTaP #1, #2, or #3**
- NOT valid! Give DTaP ASAP

**Td given to child <7yrs as DTaP #4 or #5**
- Count dose as valid

**Td given to child 7-10 yrs**
- Count dose as valid

**Under-vaccinated persons 7 years and older, give 1 Tdap and complete series with Td**

**Most children will not get any Td doses because they got enough DTaP vaccine**

**After the primary series, give 1 Td every 10 years**

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Overseas Medical Records

- Providers should only accept written, dated records as evidence of vaccination.
- Tools to interpret:
  - Best Practices Table 9-1. Approaches to evaluation and vaccination of persons vaccinated outside the United States who have no (or questionable) vaccination records: https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/special-situations.html#t-01
  - Immunization Action Coalition: Vaccine-Preventable Disease Terms in Multiple Languages http://www.immunize.org/catg.d/p5122.pdf
- Minimum interval table
# Minimum Interval Table

<table>
<thead>
<tr>
<th>Vaccine and dose number</th>
<th>Recommended age for this dose</th>
<th>Minimum age for this dose</th>
<th>Recommended interval to next dose</th>
<th>Minimum interval to next dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphtheria-tetanus-acellular pertussis (DTaP)-1</td>
<td>2 months</td>
<td>6 weeks</td>
<td>8 weeks</td>
<td>4 weeks</td>
</tr>
<tr>
<td>DTaP-2</td>
<td>4 months</td>
<td>10 weeks</td>
<td>8 weeks</td>
<td>4 weeks</td>
</tr>
<tr>
<td>DTaP-3</td>
<td>6 months</td>
<td>14 weeks</td>
<td>6-12 months</td>
<td>6 months</td>
</tr>
<tr>
<td>DTaP-4</td>
<td>15-18 months</td>
<td>15 months</td>
<td>3 years</td>
<td>6 months</td>
</tr>
<tr>
<td>DTaP-5</td>
<td>4-6 years</td>
<td>4 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haemophilus influenzae type b (Hib)-1</td>
<td>2 months</td>
<td>6 weeks</td>
<td>8 weeks</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Hib-2</td>
<td>4 months</td>
<td>10 weeks</td>
<td>8 weeks</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Hib-3</td>
<td>6 months</td>
<td>14 weeks</td>
<td>6-9 months</td>
<td>8 weeks</td>
</tr>
<tr>
<td>Hib-4</td>
<td>12-15 months</td>
<td>12 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis A (HepA)-1</td>
<td>12-23 months</td>
<td>12 months</td>
<td>6-18 months</td>
<td>6 months</td>
</tr>
<tr>
<td>HepA-2</td>
<td>≥18 months</td>
<td>18 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis B (HepB)-1</td>
<td>Birth</td>
<td>Birth</td>
<td>4 weeks-4 months</td>
<td>4 weeks</td>
</tr>
<tr>
<td>HepB-2</td>
<td>1-2 months</td>
<td>4 weeks</td>
<td>8 weeks-17 months</td>
<td>8 weeks</td>
</tr>
<tr>
<td>HepB-3</td>
<td>6-18 months</td>
<td>24 weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herpes zoster Live (ZVL)</td>
<td>≥60 years</td>
<td>60 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herpes zoster Recombinant (RZV)-1</td>
<td>≥50 years</td>
<td>60 years</td>
<td>2-6 months</td>
<td>4 weeks</td>
</tr>
<tr>
<td>RZV-2</td>
<td>≥50 years (+2-6 months)</td>
<td>50 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human papillomavirus (HPV) – Two-Dose Series</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HPV-1</td>
<td>11-12 years</td>
<td>9 years</td>
<td>6 months</td>
<td>5 months</td>
</tr>
<tr>
<td>HPV-2</td>
<td>11-12 years (+6 months)</td>
<td>9 years</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Resource Slides
Pregnancy & Vaccination

Toolkit for Prenatal Care Providers
Increasing the Use of Maternal Vaccines by Ob-gyns, Nurse-Midwives, and Other Healthcare Professionals

This comprehensive toolkit is intended to help prenatal care providers increase the rates of maternal immunization. Ob-gyns, nurse-midwives, and other healthcare professionals who serve pregnant women can all use this toolkit. The resources here include recommendations from CDC and other relevant details about vaccinating pregnant women.

Why Maternal Vaccines Are Important
- Tdap (Pertussis Vaccine)
- Rationale: Why Vaccinate Pregnant Women? (Tdap)
- Influenza (Flu) Vaccine and Pregnancy
- ACIP Recommendations and Pregnancy/Flu

Implementation Resources
- Standards for Adult Immunization Practice
- Strategies for Increasing Adult Vaccination Rates
- Getting Reimbursed for Tdap Vaccination
- Resources for Provider Education

Maternal Vaccination Information
- Guidelines for Vaccinating Pregnant Women
- Recommended Immunization Schedules for Adults
- Maternal Vaccination Coverage
- Resources for Patient Education

Additional Resources for Prenatal Care Providers

Apps for Smartphones and Tablets
- CDC Vaccine Schedules

Podcasts at CDC
- Preventing Flu During Pregnancy

https://www.cdc.gov/vaccines/pregnancy/hcp-toolkit/index.html
Maternal Immunization
American College of Obstetrics & Gynecology

Maternal Immunization Toolkit (May 2018)
http://immunizationforwomen.org/providers/resources/toolkits/maternalimmunizations.php

Optimizing Immunization Programs in Obstetric-Gynecologic Practices Tool Kit (March 2019)
http://immunizationforwomen.org/providers/resources/toolkits/optimizingimmunizations.php
ACOG’s Maternal Immunization Tools for Educating Pregnant Women

Pregnant? Top 3 Reasons Why You Need the **Flu Vaccine**

1. The flu is a serious illness that can be much more severe during pregnancy. It can be life-threatening for newborns and pregnant women.
2. Getting the flu vaccine during pregnancy helps protect your newborn from the flu until the baby is old enough for his or her own vaccine.
3. The flu vaccine is safe for both you and your fetus. You cannot get the flu from the flu vaccine.

Get the flu vaccine during every pregnancy, as soon as the vaccine is available. You can get the flu vaccine during any trimester.

[Learn more at ImmunizationforWomen.org](https://www.acog.org/About-ACOG/ACOG-Departments/Immunization/Resources/Maternal-Immunization-Tools)

Pregnant? Top 3 Reasons Why You Need the **Tdap Vaccine**

1. The Tdap vaccine prevents whooping cough. This is a very serious, often life-threatening disease for babies.
2. Getting the Tdap vaccine during pregnancy helps protect your newborn from whooping cough until the baby is old enough for his or her own vaccine.
3. The Tdap vaccine is safe for both you and your fetus.

For the health of your baby: Get the Tdap vaccine during every pregnancy between 27 and 36 weeks, as early in that window as possible.

[Learn more at ImmunizationforWomen.org](https://www.acog.org/About-ACOG/ACOG-Departments/Immunization/Resources/Maternal-Immunization-Tools)
Education

- CDC Vaccine Administration webpage: https://www.cdc.gov/vaccines/hcp/admin/admin-protocols.html
  - Vaccine Administration e-learn
  - “Know the Site, Get it Right”
- CDC Pink Book webinars: https://www.cdc.gov/vaccines/ed/webinar-epv/index.html
- MDPH Immunization events/webinars: https://www.mass.gov/immunization-resources-and-events
- MCAAP Immunization Initiative Webinars: http://mcaap.org/immunization-cme/
Materials & Resources

- **General Best Practice Guidelines for Immunization:**
  https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html

- **Immunization Action Coalition**
  - “Ask the Experts” page: https://www.immunize.org/askexperts/
  - Standing Orders templates: https://www.immunize.org/standing-orders/
  - Screening Forms: https://www.immunize.org/clinic/screening-contraindications.asp
  - Vaccine Information Statements: https://www.immunize.org/vis/
  - Administering Vaccines: https://www.immunize.org/handouts/administering-vaccines.asp
CDC Catch-up Guidance Job Aids

- DTaP (4 mos-6 years):  
- Tdap/Td (7-10 years):  
- Tdap/Td (11-18 years):  
- PCV:  
- HIB (PedvaxHIB only):  
- HIB (ActHIB, Pentacel, Hiberix, or Unknown):  
MDPH Immunization Division
Contact Information

**Immunization Division Main Number**
For questions about immunization recommendations, disease reporting, etc.
Phone: 617-983-6800
Fax: 617-983-6840
Website: [https://www.mass.gov/topics/immunization](https://www.mass.gov/topics/immunization)

**MIIS Help Desk**
Phone: 617-983-4335
Fax: 617-983-4301
Email: miishelpdesk@state.ma.us
Website: [https://www.mass.gov/service-details/massachusetts-immunization-information-system-miis](https://www.mass.gov/service-details/massachusetts-immunization-information-system-miis)

**MDPH Vaccine Unit**
Phone: 617-983-6828
Fax: 617-983-6924
Website: [https://www.mass.gov/service-details/vaccine-management](https://www.mass.gov/service-details/vaccine-management)
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catherine.reilly@state.ma.us
THANK YOU!