Tennessee Immunization Program (TIP)

- 33 staff (7 nurses, 7 epidemiologists, 1 MD, 1 CDC advisor)
- TN Vaccines for Children (VFC) entitlement program
- Perinatal hepatitis B prevention
- Vaccine-preventable disease epidemiology (surveillance, outbreak response)
- Tennessee Immunization Information System (TennIIS)
- Small quantity of federal 317 vaccine for uninsured adults in local health departments
Survival in the Immunization World

Preparation
- ACIP recommendations (including a peek ahead)
- Know your challenges (current coverage rates)

Tools
- Immunization Information System
- Vaccine storage and temperature monitoring
- Resources for clinic/patients

SOPs
- Vaccine storage and handling
- Standing orders
Development of Vaccine Recommendations and Policies

Composition of ACIP

- **15 voting members**
  - US citizens; external to federal government
  - 4 year term

- **8 ex officio members** – represent other government agencies involved in immunization
  - (CMS, DoD, DVA, FDA, HRSA, IHS, NIH, NVPO (non-voting))

- **30 liaison organizations** –
  - representatives of professional societies and organizations involved with immunization programs (non-voting)

- **Behind the scenes: ACIP Work Groups**
Key Elements for Developing Evidence Based Recommendations

- Vaccine safety
- Vaccine efficacy/effectiveness
- Burden of disease
- Economic analysis and implementation issues (considered)
ACIP Recommendation Categories

- **Category A** ("routine") recommendations are made for all persons in an age- or risk-factor-based group.
  - Example: HPV4 vaccine in males, hepatitis B in adults <60 with DM
    [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6050a3.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6050a3.htm)
    [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6050a4.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6050a4.htm)

- **Category B** ("permissive") recommendations are made for individual clinical decision making.
  - Example: hepatitis B vaccine in adults aged ≥60 years with DM
    [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6050a4.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6050a4.htm)

- **ACIP, AAFP, ACOG and ACP** produce a harmonized **adult** immunization schedule (≥19 years of age)
  - Updated annually, published in February in *MMWR* and liaison journals
Affordable Care Act (ACA)

- Requires private insurance coverage for immunization without copay/deductible *when provided by an in-network provider*

- ACIP recommendations become policy following approval by CDC Director and MMWR publication

- Health plans have 1 plan year from MMWR publication to implement recommendations according to CDC Immunization schedules (graphics and footnotes)
# Recommended Adult Immunization Schedule—United States - 2016

Note: These recommendations must be read with the footnotes that follow containing number of doses, intervals between doses, and other important information.

## Figure 1. Recommended immunization schedule for adults aged 19 years or older, by vaccine and age group

<table>
<thead>
<tr>
<th>VACCINE</th>
<th>AGE GROUP</th>
<th>19-21 years</th>
<th>22-26 years</th>
<th>27-49 years</th>
<th>50-59 years</th>
<th>60-64 years</th>
<th>≥ 65 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus, diphtheria, pertussis (Td/Tdap)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Varicella</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human papillomavirus (HPV) Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human papillomavirus (HPV) Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zoster</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measles, mumps, rubella (MMR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumococcal 13-valent conjugate (PCV13)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumococcal 23-valent polysaccharide (PPSV23)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hepatitis B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meningococcal 4-valent conjugate (MenACWY) or polysaccharide (MPSV4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meningococcal B (MenB)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haemophilus influenza type b (Hib)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 dose annually

Substitute Tdap for Td once, then Td booster every 10 yrs

2 doses

3 doses

1 or 2 doses depending on indication

1 or 2 doses depending on indication

1 or more doses depending on indication

2 or 3 doses depending on vaccine

3 doses

2 or 3 doses depending on vaccine

1 or more doses depending on indication

Report all clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System (VAERS). Reporting forms and instructions on filing a VAERS report are available at [www.vaers.hhs.gov](http://www.vaers.hhs.gov) or by telephone, 800-822-7967.

Information on how to file a Vaccine Injury Compensation Program claim is available at [www.hrsa.gov/vaccinecompensation](http://www.hrsa.gov/vaccinecompensation) or by telephone, 800-338-2382. To file a claim for vaccine injury, contact the U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington, D.C. 20005; telephone, 202-357-6400.

Additional information about the vaccines in this schedule, extent of available data, and contraindications for vaccination is also available at [www.cdc.gov/vaccines](http://www.cdc.gov/vaccines) or from the CDC-INFO Contact Center at 800-CDC-INFO (800-232-4636) in English and Spanish, 8:00 a.m. - 8:00 p.m. Eastern Time, Monday-Friday, excluding holidays.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

The recommendations in this schedule were approved by the Centers for Disease Control and Prevention’s (CDC) Advisory Committee on Immunization Practices (ACIP), the American Academy of Family Physicians (AAFP), the American College of Physicians (ACP), the American College of Obstetricians and Gynecologists (ACOG), and the American College of Nurse-Midwives (ACNM).

https://www.cdc.gov/vaccines/schedules/hcp/adult.html
<table>
<thead>
<tr>
<th>VACCINE</th>
<th>INDICATION</th>
<th>Pregnancy</th>
<th>Immune-compromising conditions (excluding HIV infection)</th>
<th>HIV infection CD4+ count (cells/μL) ≤ 200</th>
<th>≥ 200</th>
<th>Men who have sex with men (MSM)</th>
<th>Kidney failure, end-stage renal disease, on hemodialysis</th>
<th>Heart disease, chronic lung disease, chronic alcoholism</th>
<th>Asplenia and persistent complement component deficiencies</th>
<th>Chronic liver disease</th>
<th>Diabetes</th>
<th>Healthcare personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza</td>
<td>1 dose annually</td>
<td>2 doses</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or 2 doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
</tr>
<tr>
<td>Tetanus, diphtheria, pertussis (Td/Tdap)</td>
<td>Contraindicated</td>
<td>2 doses</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or 2 doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Varicella</td>
<td>Contraindicated</td>
<td>2 doses</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or 2 doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Human papillomavirus (HPV) Female</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or 2 doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Human papillomavirus (HPV) Male</td>
<td>Contraindicated</td>
<td>2 doses</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or 2 doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Zoster</td>
<td>Contraindicated</td>
<td>2 doses</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or 2 doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Measles, mumps, rubella (MMR)</td>
<td>Contraindicated</td>
<td>2 doses</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or 2 doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Pneumococcal 13-valent conjugate (PCV13)</td>
<td>2 doses</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or 2 doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Pneumococcal polysaccharide (PPSV23)</td>
<td>Contraindicated</td>
<td>2 doses</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or 2 doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>2 doses</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or 2 doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>3 doses</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or 2 doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Meningococcal 4-valent conjugate (MenACWY) or polysaccharide (MPSV4)</td>
<td>3 doses post-HSCT recipients only</td>
<td>1 dose</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or more doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Meningococcal B (MenB)</td>
<td>3 doses post-HSCT recipients only</td>
<td>1 dose</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or more doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Haemophilus influenzae type b (Hib)</td>
<td>3 doses post-HSCT recipients only</td>
<td>1 dose</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 or more doses depending on indication</td>
<td>1 dose</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
</tbody>
</table>
Where do I go for detailed questions?
www.cdc.gov/vaccines
# Pneumococcal Vaccination

For children age 2 months and older: Administer PCV13 series to all children beginning at age 2 months, followed by doses at 4 months, 6 months, and 12–18 months (booster dose).

For adults age 65 years and older: Administer 1-time dose to PCV13-naive adults at age 65 years, followed by a dose of PPSV23 12 months later.

## Risk-based Recommendations

### People with Underlying Medical Conditions or Other Risk Factors

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>PCV13</th>
<th>PPSV23</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Underlying medical condition or other risk factor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic heart disease³</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Chronic lung disease³</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cerebrospinal fluid leak</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Cochlear implant</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Alcoholism</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Chronic liver disease, cirrhosis</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cigarette smoking (≥19 yrs)</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Sickle cell disease/other hemoglobinopathy</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Congenital or acquired asplenia</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Congenital or acquired immunodeficiency⁴</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>HIV</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Chronic renal failure</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Nephrotic syndrome</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Leukemia</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Lymphoma</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Hodgkin disease</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Generalized malignancy</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Iatrogenic</td>
<td>v</td>
<td>v</td>
</tr>
</tbody>
</table>
Pneumococcal vaccination

http://www.adultvaccination.org/professional-resources/pneumo/adult-pneumo-guide-hcp.pdf
Travel vaccines: wwwnc.cdc.gov/travel
Yellow Fever Vaccination Clinics in Tennessee

There are 42 result(s) for "Tennessee".

Search Again

**Please note that most facilities provide services BY APPOINTMENT ONLY**

<table>
<thead>
<tr>
<th>Clinic</th>
<th>City</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sullivan County Regional Health Dept</td>
<td>Blountville, TN</td>
<td>Sullivan County</td>
</tr>
<tr>
<td>154 Blountville Bypass</td>
<td>Blountville, TN</td>
<td>37617</td>
</tr>
<tr>
<td></td>
<td>423-279-2777</td>
<td></td>
</tr>
<tr>
<td></td>
<td>website</td>
<td></td>
</tr>
<tr>
<td>Hamilton County Health Dept</td>
<td>Chattanooga, TN</td>
<td>Hamilton County</td>
</tr>
<tr>
<td>921 East 3rd St</td>
<td>Chattanooga, TN</td>
<td>37403</td>
</tr>
<tr>
<td>423-209-8340</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>website</td>
<td></td>
</tr>
</tbody>
</table>
CDC New Travel Health Mobile Apps:

For Travelers: From Packing Lists to Vaccine/Medicine Reminders

For Travelers: Can I eat this?

2016 Yellow Book
The Vaccine Adverse Event Reporting System (VAERS) is a national vaccine safety surveillance program co-sponsored by the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA). VAERS is a post-marketing safety surveillance program, collecting information about adverse events (possible side effects) that occur after the administration of vaccines licensed for use in the United States.

VAERS provides a nationwide mechanism by which adverse events following immunization may be reported, analyzed, and made available to the public. VAERS also provides a vehicle for disseminating vaccine safety-related information to parents and guardians, health care providers, vaccine manufacturers, state vaccine programs, and other constituencies. more...

Have you or your child had a reaction following vaccination?

1. Contact your health care provider
2. Report the reaction ▶
3. Submit Follow-Up Information ▶
4. Visit the National Vaccine Injury Compensation (if appropriate)

Important note: CDC and FDA do not provide individual medical treatment, advice, or diagnosis. If you need individual medical or health care advice, consult a qualified health care provider.

¿Ha tenido usted o su hijo una reacción adversa después de recibir una vacuna?

1. Contacte a su proveedor de salud
2. Reporte una reacción adversa ▶
3. Visite el Programa Nacional de Compensación por Daños Derivados

Featured Resources

Seasonal Flu Update

- Summary of 2015-2016 Influenza Vaccine Information

https://vaers.hhs.gov/
IMMUNIZATION RATES
Key Adult Immunization Rates

- **2015-16 Influenza (BRFSS, ≥18y): 41.9% TN**
  - 2014-15: 45.1% TN

- **2014 National Health Interview Survey¹ US data:**
  - Tdap ≥19: 20.1%, Td: 62.2%
  - Herpes Zoster ≥60: 27.9%
  - Pneumococcal, high risk 19-64: 20.3%
  - Pneumococcal ≥65: 61.3%
  - Hep A ≥19: 9% (13.8% among those with liver dz)
  - Hep B ≥19: 24.5%
  - HPV 19-26: 40.2% (F), 8.2% (M)

¹http://www.cdc.gov/mmwr/volumes/65/ss/ss6501a1.htm
IMMUNIZATION REGISTRY
Lifelong immunization registry
  - Established in 1996
  - Expanded to all ages in 2009
Connect with EHR systems via HL7 standard messages
Accessible at no cost to authorized users (incl. physicians, pharmacies)
  - Facility-level account, username and password
Vaccine forecasting (what is due/overdue for patient today)
Permanent records, great patient benefit
  - College, work immunization requirements
  - Pneumococcal vaccine in adults, prevents excess doses
Welcome to the Tennessee Immunization Information System (TennIIS)

TennIIS is a statewide Immunization Information System (IIS) developed by the Department of Health to be a single source of immunization records for Tennessee residents of all ages. TennIIS also serves as the online Vaccine Ordering Management System (VOMS) for Vaccines for Children (VFC) Program. TennIIS also has the Immunization Certificate Validation Tool (ICVT) functionality. All users, including pharmacists and school users, can produce validated complete Official Immunization Certificates (or failed validation reports showing missing or invalid doses) for school or child care entry requirements. Qualified users also may produce blank or pre-populated incomplete certificates for signature.

Each TennIIS user will be prompted to accept a standard data confidentiality agreement before gaining access to the system. This agreement will only appear at the first log in. It will re-appear only when updates are made by the Tennessee Department of Health to IIS confidentiality requirements.

- Register to use TennIIS
- TennIIS Training
- Immunization News
- School Immunization Requirements
- VFC Program Information
- Data Exchange with Electronic Health Record Systems & Meaningful Use
- Valuable External Links
- FAQs, Known Issues and Workarounds
- Contact the Tennessee Immunization Program

www.tennesseeiis.gov
TennIIS in the next Pandemic

- Pandemic Vaccine Provider Network will operate through TennIIS
- Register for information
- Complete provider agreements
- Request vaccine
- Report doses administered
- Save a step, become a TennIIS user now!
IMMUNIZATION RESOURCES ONLINE
Immunization Action Coalition: www.immunize.org
Handouts: Clinic Resources

Standing Orders for Administering Vaccines

10 Steps to Implementing Standing Orders for Immunization in Your Practice Setting

10 steps to implementing standing orders focuses on influenza vaccination, but the basic principles can be used to implement standing orders for other vaccines. [#P3067, 6/16]

Using standing orders for administering vaccines: What you should know

FAQ provides an overview for healthcare professionals about the use of standing orders for vaccination [#P3066, 6/15]

Diphtheria, tetanus, acellular pertussis vaccine (DTaP) - Children

Eligible health professionals may vaccinate children under 7 who meet any of the criteria on this form [#P3073, 10/12]

Hepatitis A vaccine (HepA) - Children and teens

Eligible health professionals may vaccinate children and teens who meet any of the criteria on this form [#P3077A, 6/13]
Using Standing Orders for Administering Vaccines: What You Should Know

What are standing orders?

Standing orders authorize nurses, pharmacists, and other appropriately trained healthcare personnel, where allowed by state law, to assess a patient’s immunization status and administer vaccinations according to a protocol approved by an institution, physician, or other authorized practitioner. Standing orders work by enabling assessment and vaccination of the patient without the need for clinician examination or direct order from the attending provider at the time of the interaction. Standing orders can be established for the administration of one or more specific vaccines to a broad or narrow set of patients in healthcare settings such as clinics, hospitals, pharmacies, and long-term care facilities.

Who recommends standing orders for vaccination?

The Community Preventive Services Task Force (Task Force): The Task Force recommends standing orders for vaccinations based on strong evidence of effectiveness in improving vaccination rates:

1. in adults and children,
2. when used alone or when combined with additional interventions, and
3. across a range of settings and populations.

Who is authorized to administer vaccines under standing orders?

Each of the 50 states separately regulates physicians, nurses, pharmacists, and other health-related practitioners. For further information about who can carry out standing orders in your state, contact your state immunization program or the appropriate state body (e.g., state board of medical/nursing/pharmacy practice).

Who is authorized to sign the standing order?

In general, standing orders are approved by an institution, physician, or authorized practitioner. State law or regulatory agency might authorize other healthcare professionals to sign standing orders.

Standing Orders: www.immunize.org/standing-orders
Storage and Handling of Vaccines
Failure to adhere to recommended specifications for storage and handling of immunobiologics can reduce or destroy their potency, resulting in inadequate or no immune response in the recipient.

As a general rule, vaccines that have been stored at inappropriate temperatures should not be administered. If such vaccines already have been administered, guidance is available from the state health department or CDC. Vaccine exposed to inappropriate temperatures that is inadvertently administered should generally be repeated. Clinicians should consult with state or local health departments in these situations.
Question: Cost of Vaccines in a Typical Clinic

What is the retail price of 10 doses of each vaccine that needs to be stocked by a pediatric or internal medicine practice for their patients (no combos, travel or influenza)?

a) $3,900 Ped / $1,800 Adult
b) $5,200 Ped / $4,700 Adult
c) $8,000 Ped / $5,600 Adult
d) $9,500 Ped / $10,000 Adult
e) $12,000 Ped / $8,000 Adult
### The math


<table>
<thead>
<tr>
<th>Ped Vaccine</th>
<th>$/10 doses (est)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTaP</td>
<td>272</td>
</tr>
<tr>
<td>IPV</td>
<td>288</td>
</tr>
<tr>
<td>HAV</td>
<td>304</td>
</tr>
<tr>
<td>HBV</td>
<td>214</td>
</tr>
<tr>
<td>Hib</td>
<td>228</td>
</tr>
<tr>
<td>HPV9</td>
<td>1,631</td>
</tr>
<tr>
<td>Men-ACWY</td>
<td>1,130</td>
</tr>
<tr>
<td>Men B</td>
<td>1,157</td>
</tr>
<tr>
<td>MMR</td>
<td>599</td>
</tr>
<tr>
<td>PCV13</td>
<td>1,520</td>
</tr>
<tr>
<td>RTV</td>
<td>752</td>
</tr>
<tr>
<td>Tdap</td>
<td>426</td>
</tr>
<tr>
<td>VZV</td>
<td>1,007</td>
</tr>
<tr>
<td><strong>Total Ped</strong></td>
<td><strong>$9,528</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adult Vaccine</th>
<th>$/10 doses (est)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hep A</td>
<td>650</td>
</tr>
<tr>
<td>Hep B</td>
<td>525</td>
</tr>
<tr>
<td>HPV9</td>
<td>1,631</td>
</tr>
<tr>
<td>MMR</td>
<td>599</td>
</tr>
<tr>
<td>Men-ACWY</td>
<td>1,129</td>
</tr>
<tr>
<td>Men B</td>
<td>1,157</td>
</tr>
<tr>
<td>PCV13</td>
<td>1,360</td>
</tr>
<tr>
<td>PPSV23</td>
<td>724</td>
</tr>
<tr>
<td>Tdap</td>
<td>376</td>
</tr>
<tr>
<td>Zos</td>
<td>1,879</td>
</tr>
<tr>
<td><strong>Total Adult</strong></td>
<td><strong>$10,030</strong></td>
</tr>
</tbody>
</table>
Right Resources

• Detailed evidence-based guidance from CDC
• Relevant to variety of clinic staff: MA to MD
• Regularly updated

http://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/
Vaccine Storage and Handling

Recommendations and Guidelines

At a Glance

Proper vaccine storage and handling practices play a very important role in protecting individuals and communities from vaccine-preventable diseases.

Vaccine quality is the shared responsibility of everyone, from the time vaccine is manufactured until it is administered.

Resources on Proper Vaccine Storage and Handling

- **Keys to Storing and Handling Your Vaccine Supply** is a video designed to decrease vaccine storage and handling errors and preserve the nation's vaccine supply by demonstrating to immunization providers the recommended best practices for storage and handling of vaccines. (Video is a winner of the Winter/Spring 2014 Web Health Award) May 2014
- These storage and handling fact sheets illustrate best practices for both refrigerated and frozen vaccines. Written in plain language, they include assessments to reinforce key points. While they are CDC-developed and branded fact sheets, each contains an area where you can insert your agency's logo.

- **Vaccine Storage and Handling Toolkit** is a comprehensive resource for health care providers on vaccine storage and handling recommendations and best practice strategies. The Toolkit includes guidance on managing and storing vaccine inventory, using and maintaining storage unit and temperature monitoring equipment, preparing for emergency situations, and training staff. (June 2016)

- **You Call the Shots: Vaccine Storage and Handling Module** is an interactive, web-based module which provides learning opportunities, self-test practice questions, reference and resource materials, and an extensive glossary. Continuing education credit is available. (Sep 2013)
- These example vaccines labels can be used to organize vaccines within the storage unit. Referenced in the storage and handling toolkit. (Aug 2016)
  - 2016-2017 Influenza Season Vaccine Label Examples [4 pages]
  - Vaccine Labels Examples [19 pages]
Vaccines and Immunizations

You Call The Shots
Web-based Training Course

Note: You Call The Shots is updated regularly to include the latest guidelines and recommendations in vaccine practice. The latest modules are below.

Come back every month for the latest training to stay up to date on the immunization practice.

At a Glance
This product was developed through the Project to Enhance Immunization Content in Nursing Education and Training, which is supported by funding from the National Center for Immunization and Respiratory Diseases (NCIRD) of the Centers for Disease Control and Prevention (CDC), through a Cooperative Agreement with the Association for Prevention Teaching and Research.

Need Continuing Education or a Certificate of Participation?
After viewing the modules, participants can go to CDC's online learning system to register for and obtain CE credit. General instructions are available in the CE How-to-Guide.

Now Available
- Diphtheria, Tetanus, and Pertussis (DTaP) Sep 2015
- Haemophilus influenzae type b (Hib) Jul 2015
- Hepatitis A Jun 2015
- Human Papillomavirus JAN 2016
- Influenza Sep 2015
- Meningococcal FEB 2016
- MMR Jan 2015
- Polio Oct 2015
- Tetanus, Diphtheria, and Pertussis (Tdap) DEC 2015
- Understanding the Basics: General Recommendations on Immunization Feb 2015
- Vaccines For Children (VFC) JAN 2016
- Vaccine Storage and Handling JAN 2016
Right Storage Equipment: Rationale

• Improper temperatures can irreversibly and invisibly damage vaccines
• Storage units with consistent, stable recommended temperatures prevent damage/waste
• Good choices do not have to be most expensive
• Store largest inventory without overcrowding
Which one(s) to choose?
**Best Practice:** Air should not flow between freezer and refrigerator sections. Never use a dorm-style refrigerator with inset freezer box.

Use: Storage unit purpose-built for storage of fragile biologics (such as vaccines, blood products) or separate freezer and refrigerator.
But I Have a Combination Unit

• Air flows between sections
• NIST found higher risk of improper temperatures
  – Especially in freezer
• CDC advises against using freezer section
• Refrigerator section usable
• Is it worth the risk?
  – Are you sure?
  – Really?
  – Really???
Recommended vaccine storage locations in the refrigerator

Household combination

NO vaccine directly under cooling vent = 2°C to 5°C colder and only MMR on the top shelf.

Pharmaceutical

Avoid storage on top shelf near cooling vent. Likely location to exceed max allowed temp during outages.

Stand-alone freezerless

No storage in crisper drawers: fill floor space with water bottles.

This can be an area of caution in some pharmaceutical units.

Can be 1°C to 2°C colder than main refrigerator space.

Source: CDC Vaccine Storage and Handling Toolkit (June 2016)
Right Monitoring: Rationale

- Accurate recordings, checked often, identify early warning signs
- Duration + magnitude of time out of range can distinguish usable vs. unusable vaccine
- CDC recommends continuous monitoring with calibrated digital data loggers

- Regardless of system, visually inspect regularly
  - CDC recommends twice daily when clinic is open
Right Monitoring: Best Practices

- Continuous monitoring with active display
- Digital thermometer with a probe in a buffer
- Include an **alarm** for out-of-range temperatures
- Display current temperature and min/max
- Have a reset button for the min/max display
- Be within +/-0.5°C accuracy (+/-1°F)
- Certificate of calibration testing
- Low battery indicator
Do Not Use These!

CDC does NOT recommend these temperature monitoring devices
Right Training: Rationale/Resources

• Create and train on your clinic SOPs + best practice standards
• Primary and back-up vaccine leads
  – Vaccine Storage and Handling Toolkit: SOP worksheets, including emergency plans
• Staff training options (schedule, track, renew):
  – CDC’s You Call the Shots (CME, CE)
  – California Dept. of Health EZIZ: eziz.org/eziz-training/
  – Hands-on data logger training is critical
Be ready BEFORE the emergency
Equipment failures, power outages, natural disasters—these and other emergency situations can compromise vaccine storage conditions and damage your vaccine supply. It's critical to have an up-to-date emergency plan with steps you should take to protect your vaccine. In any emergency event, activate your emergency plan immediately, and if you can do so safely, follow the emergency packing procedures for refrigerated vaccines.
Right Reactions: Temperature Excursion

- **Recognize** there is a problem
- **Restore** proper storage conditions
- Temporarily **label** “Do Not Use” (bag)
- **Document** temperature, time out of range, room temperature (e.g., download data logger report)
- **Contact** health department immunization program or manufacturer
- **Follow** instructions
Be Right. It Matters.
Conclusion: Survival for the General Internist

• Bookmark Online Resources
  – ACIP Schedules
  – TennIIS
  – Handouts and guides

• Make it easy
  – Use Standing Orders
  – Stick to Schedules
  – Report to TennIIS

• Mitigate Risk
  – Vaccine storage
  – Right Equipment
  – Right Training
  – Plan Ahead

• Call for Help
  – 800-404-2006 (TIP)

• Start Vaccinating
  – Embrace Prevention
Learn more:

1. CDC Free online continuing medical education credits
   http://www.cdc.gov/vaccines/ed/index.html
   ▫ On Twitter, follow @CDCizLearn

   ▫ 3 days of CME
   ▫ 2017 dates: Chicago, IL, March 10-12; Bethesda, MD, November 3-5
   ▫ May come to Nashville in 2018
Thank you!
Questions?
kelly.moore@tn.gov
615-741-7247