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Take a STAND!
Use Standing Orders to Vaccinate Adults

Session 1

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Pfizer is supporting this initiative because it provides focus on the importance of adult immunization. Pfizer has had no role in the creation of content for this presentation or other assets supporting the Take a Stand™ program workshops and therefore accepts no responsibility for the content.
Session 1
Why Adult Immunization Matters

Melanie Mouzoon M.D.
Managing Physician of Immunization Practices
Kelsey-Seybold Clinic

Slides courtesy of Mark Sawyer, MD
Professor of Clinical Pediatrics
UCSD School of Medicine/Rady Children's Hospital San Diego
Outline

• Review the burden of adult vaccine-preventable diseases in the United States
• Review adult vaccination coverage in the United States
• Discuss the changing environment for adult immunization
The Burden of Adult Vaccine-Preventable Diseases
Burden of Vaccine-preventable Disease Among U.S. Adults

- **Influenza**
  - 3,000 to 49,000 total influenza-related deaths per year\(^1\)
  - 80%–90% of deaths among adults 65 years and older\(^2\)

- **Invasive pneumococcal disease (IPD)\(^3\)**
  - 33,900 total cases/ 3,700 total deaths in 2013
  - 91% of IPD and nearly all IPD deaths among adults

- **Pertussis in 2014\(^4\)**
  - ~24,000 cases
  - >5,000 among adults 20 years of age and older

- **Hepatitis B\(^5\)**
  - 3,050 acute cases reported in 2013
  - ~19,800 estimated

- **Zoster\(^6\)**
  - ~1 million cases of zoster annually U.S.

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1. MMWR. 010;59(33): 1057-1062.
2. [http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0066312](http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0066312)
Burden of Other Diseases Among U.S. Adults

• Ebola: 4 cases
• Avian Influenza: None
• E. coli H7:O157 from eating at Chipotle: <100 cases
• Zika virus: <50 cases, no local mosquito transmission
VPDs Among U.S. Adults

Influenza

- 3,000–49,000 deaths per year
- 80%–90% of deaths occur in adults ≥65 years of age

CDC. MMWR. 2010;59:1057 (data from 1976-2007)

Influenza Costs Lives and Money

• Direct medical costs in U.S.: ~$10.4 billion
• Add in loss of work and life: ~$87 billion
• Vaccination (41% in 2013–14) prevented:
  – 7 million+ illnesses
  – 3 million+ medically-attended illnesses
  – 90,000+ hospitalizations

• Reed, et al. Estimated Influenza Illnesses and Hospitalizations Averted by Vaccination — United States, 2013–14 Influenza Season *MMWR* 2014:63(49);1151-1154.
Estimated Human and Economic Burden Caused by 4 Major Adult VPDs in 2013, U.S. (includes only adults > 65 years of age)

<table>
<thead>
<tr>
<th>Disease</th>
<th>Cases</th>
<th>Cost (x $1,000,000)</th>
<th></th>
<th></th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Medical</td>
<td>Indirect</td>
<td>TOTAL</td>
<td></td>
</tr>
<tr>
<td>Influenza</td>
<td>4,019,759</td>
<td>7,503</td>
<td>810</td>
<td>8,313</td>
<td></td>
</tr>
<tr>
<td>Pneumococcal disease</td>
<td>440,187</td>
<td>3,572</td>
<td>215</td>
<td>3,787</td>
<td></td>
</tr>
<tr>
<td>Herpes zoster</td>
<td>555,989</td>
<td>1,309</td>
<td>1,709</td>
<td>3,017</td>
<td></td>
</tr>
<tr>
<td>Pertussis</td>
<td>207,241</td>
<td>90</td>
<td>123</td>
<td>213</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,223,176</strong></td>
<td><strong>$12,474</strong></td>
<td><strong>$2,856</strong></td>
<td><strong>$15,330</strong></td>
<td></td>
</tr>
</tbody>
</table>
Recommended Adult Vaccines

• Important for optimizing health, protecting persons vaccinated and others
  – Example: Vaccination against influenza and pertussis reduces the risk for the person vaccinated and also prevents the person from spreading these diseases
Recommended Adult Immunization Schedule
United States - 2016

The 2016 Adult Immunization Schedule was 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). On February 2, 2016, the adult immunization schedule and a summary of changes from 2015 were published in the Annals of Internal Medicine, and the availability of the schedule was announced in the Morbidity and Mortality Weekly Report (MMWR) on February 4, 2016.

All clinically significant postvaccination reactions should be reported to the Vaccine Adverse Event Reporting System (VAERS). Reporting forms and instructions on filing a VAERS report are available at www.vaers.hhs.gov or by telephone, 800-822-7967.

Additional details regarding ACIP recommendations for each of the vaccines listed in the schedule can be found at www.cdc.gov/vaccines/hcp/acip-recs/index.html.

American Academy of Family Physicians (AAFP)
www.aafp.org/

American College of Physicians (ACP)
www.acponline.org/

American College of Obstetricians and Gynecologists (ACOG)
www.acog.org/

American College of Nurse-Midwives (ACNM)
www.midwife.org/
**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.

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**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 1,2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 dose annually</td>
</tr>
<tr>
<td>Tetanus, diphtheria, pertussis (Td/Tdap) 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Substitute Tdap for Td once, then Td booster every 10 yrs</td>
</tr>
<tr>
<td>Varicella 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 doses</td>
</tr>
<tr>
<td>Human papillomavirus (HPV) Female 5-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 doses</td>
</tr>
<tr>
<td>Human papillomavirus (HPV) Male 5-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 doses</td>
</tr>
<tr>
<td>Zoster 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 dose</td>
</tr>
<tr>
<td>Measles, mumps, rubella (MMR) 7,7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 or 2 doses depending on indication</td>
</tr>
<tr>
<td>Pneumococcal 13-valent conjugate (PCV13) 7,8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 dose</td>
</tr>
<tr>
<td>Pneumococcal 23-valent polysaccharide (PPSV23) 8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 or 2 doses depending on indication</td>
</tr>
<tr>
<td>Hepatitis A 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 dose</td>
</tr>
<tr>
<td>Hepatitis B 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 or 3 doses depending on vaccine</td>
</tr>
<tr>
<td>Meningococcal 4-valent conjugate (MenACWY) or polysaccharide (MPSV4) 11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 or more doses depending on indication</td>
</tr>
<tr>
<td>Meningococcal B (MenB) 11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 or 3 doses depending on vaccine</td>
</tr>
<tr>
<td><em>Haemophilus influenzae</em> type b (Hib) 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 or 3 doses depending on indication</td>
</tr>
</tbody>
</table>

*Covered by the Vaccine Injury Compensation Program

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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 America College of Physicians (ACP), the American College of Obstetricians and Gynecologists (ACOG) and the American College of Nurse-Midwives (ACNM).
Figure 2. Vaccines that might be indicated for adults aged 19 years or older based on medical and other indications 1

<table>
<thead>
<tr>
<th>VACCINE ▼</th>
<th>INDICATION ▼</th>
<th>Pregnancy</th>
<th>Immuno-compromising conditions (excluding HIV infection) 3,4,7,8,13</th>
<th>HIV infection CD4+ count (cells/μL) 3,4,7,8,13</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 9,11,12</th>
<th>Chronic liver disease</th>
<th>Diabetes</th>
<th>Healthcare personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza 2</td>
<td>1 dose annually</td>
<td>1 dose annually</td>
<td>1 dose annually</td>
<td>Substitute Tdap for Td once, then Td booster every 10 yrs</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 21 yrs</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
</tr>
<tr>
<td>Tetanus, diphtheria, pertussis (Td/Tdap) 3</td>
<td>1 dose Tdap each pregnancy</td>
<td>1 dose Tdap each pregnancy</td>
<td>1 dose Tdap each pregnancy</td>
<td>Substitute Tdap for Td once, then Td booster every 10 yrs</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 21 yrs</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
</tr>
<tr>
<td>Varicella 4</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</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 21 yrs</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
</tr>
<tr>
<td>Human papillomavirus (HPV) Female 5</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 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td></td>
</tr>
<tr>
<td>Human papillomavirus (HPV) Male 5</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 26 yrs</td>
<td>3 doses through age 21 yrs</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td></td>
</tr>
<tr>
<td>Zoster 6</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</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 21 yrs</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
</tr>
<tr>
<td>Measles, mumps, rubella (MMR) 7</td>
<td>1 or 2 doses depending on indication</td>
<td>1 or 2 doses depending on indication</td>
<td>1 or 2 doses depending on indication</td>
<td>1 or 2 doses depending on indication</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 21 yrs</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
</tr>
<tr>
<td>Pneumococcal 13-valent conjugate (PCV13) 8</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</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 21 yrs</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
</tr>
<tr>
<td>Pneumococcal polysaccharide (PPSV23) 8</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>1, 2, or 3 doses depending on indication</td>
<td>1, 2, or 3 doses depending on indication</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 21 yrs</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
</tr>
<tr>
<td>Hepatitis A 9</td>
<td>2 or 3 doses depending on vaccine</td>
<td>2 or 3 doses depending on vaccine</td>
<td>2 or 3 doses depending on vaccine</td>
<td>2 or 3 doses depending on vaccine</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 21 yrs</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
</tr>
<tr>
<td>Hepatitis B 10</td>
<td>3 doses</td>
<td>3 doses</td>
<td>3 doses</td>
<td>3 doses</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 21 yrs</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
</tr>
<tr>
<td>Meningococcal 4-valent conjugate (MenACWY) or polysaccharide (MPSV4) 11</td>
<td>1 or more doses depending on indication</td>
<td>1 or more doses depending on indication</td>
<td>1 or more doses depending on indication</td>
<td>1 or more doses depending on indication</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 21 yrs</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
</tr>
<tr>
<td>Meningococcal B (MenB) 11</td>
<td>2 or 3 doses depending on vaccine</td>
<td>2 or 3 doses depending on vaccine</td>
<td>2 or 3 doses depending on vaccine</td>
<td>2 or 3 doses depending on vaccine</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 21 yrs</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
</tr>
<tr>
<td>Haemophilus influenzae type b (Hib) 12</td>
<td>3 doses post-HSCT recipients only</td>
<td>3 doses post-HSCT recipients only</td>
<td>3 doses post-HSCT recipients only</td>
<td>3 doses post-HSCT recipients only</td>
<td>3 doses post-HSCT recipients only</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>Contraindicated</td>
<td>Contraindicated</td>
<td>Contraindicated</td>
</tr>
</tbody>
</table>

Recommended for all persons who meet the age requirement; lack documentation of vaccination, or lack evidence of past infection; zoster vaccine is recommended regardless of past episode of zoster

Recommended for persons with a risk factor (medical, occupational, lifestyle, or other indication)

No recommendation

Contraindicated

*Covered by the Vaccine Injury Compensation Program

These schedules indicate the recommended age groups and medical indications for which administration of currently licensed vaccines is commonly recommended for adults aged ≥19 years, as of February 2016. For all vaccines being recommended on the Adult Immunization Schedule: a vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Licensed combination vaccines may be used whenever any components of the combination are indicated and when the vaccine's other components are not contraindicated. For detailed recommendations on all vaccines, including those used primarily for travelers or that are issued during the year, consult the manufacturers' package inserts and the complete statements from the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/hcp/acip-recs/index.html). 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.
Footnotes—Recommended Immunization Schedule for Adults Aged 19 Years or Older: United States, 2016

- have not received PCV13 but have received 2 doses of PPSV23 administer PCV13 at least 1 year after the most recent dose of PCV13
- have received PCV13 but not PPSV23 administer PPSV23 at least 1 week after PCV13
- administer a second dose of PPSV23 at least 5 years after the first dose of PPSV23
- have received PCV13 and 1 dose of PPSV23 administer a second dose of PPSV23 at least 5 years after the first dose of PPSV23
- if the last dose of PPSV23 was administered at age <65 years, at age ≥65 years, administer a dose of PPSV23 at least 5 years after PCV13 and at least 1 year after the last dose of PPSV23
- Immunocompromising conditions that are indications for pneumococcal vaccination are: congenital or acquired immunodeficiency (including human immunodeficiency virus infection, chronic liver disease, renal failure, neoplastic syndrome, syphilis, multiple myeloma, solid organ transplant, and autoimmune/inflammatory disease (including long-term systemic corticosteroids and radiation therapy)
- Anatomical or functional abnormalities that are indications for pneumococcal vaccination are: sickle cell disease, other hereditary or acquired defects of the complement system, chronic heart failure, and malignant neoplasms.
- Administer pneumococcal vaccine at least 2 weeks before immunosuppressive therapy or an elective surgery, and as soon as possible to patients who are who are in need of pneumococcal vaccination along with asymptomatic or symptomatic HIV infection.
- Adults aged 19 years with cerebrospinal fluid leaks or cochlear implants administer PPSV23 at least 8 weeks after PCV13
- if the last dose of PPSV23 was administered at age <65 years, at age ≥65 years, administer a dose of PPSV23 at least 5 years after the last dose of PPSV23
- Adults aged 19 through 64 years with chronic heart failure and renal dysfunction, including diabetes, chronic liver disease (including chronic obstructive liver disease, emphysema, and bronchitis), chronic heart failure, and renal failure administer PCV13 at least 1 year after PPSV23
- if the last dose of PPSV23 was administered at age <65 years, at age ≥65 years, administer another dose of PPSV23 at least 5 years after the last dose of PPSV23
- If a pneumococcal vaccination is not recommended for American Indian/Alaska Native or other adults unless they have an indication for vaccination as noted above, public health authorities may consider recommending vaccines for American Indians/Alaska Natives or other adults who live or travel in areas with increased risk of invasive pneumococcal disease.

9. Hepatitis A Vaccination

- Vaccinate any person seeking protection from hepatitis A virus (HAV) infection and persons with the following indications:
- persons who intend to travel to areas with high or intermediate endemicity of hepatitis A (see footnote 1); and
- unvaccinated persons who are at risk for exposure to HAV (e.g., household or close personal contact with an international adoptee during the first year of life, adoption from the United States by a family with a history of or intermediate endemicity of hepatitis A (see footnote 3)).

10. Hepatitis B Vaccination

- Vaccinate any person seeking protection from hepatitis B virus (HBV) infection and persons with the following indications:
- sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., persons with more than 1 sex partner during the previous 6 months), persons seeking evaluation or treatment for a sexually transmitted disease (STD) (current or recent injection drug users, and men who have sex with men).
- health-care personnel and public safety workers who are potentially exposed to blood or other infectious body fluids.
- household contacts and sex partners of hepatitis B surface antigen-positive persons, clients and staff members of institutions for persons with developmental disabilities, and international travelers to regions with high or intermediate levels of endemic HBV infection (see footnote 4); and
- all adults in the following settings: STD treatment facilities, HIV testing and treatment facilities, facilities providing drug abuse treatment and prevention services, health-care settings targeting services to injection drug users, and men who have sex with men, correctional facilities, and end-stage renal disease programs and facilities for chronic hemodialysis patients, and institutions and nonresidential day care facilities for persons with developmental disabilities.
- Administer missing doses to complete a 3-dose series of hepatitis B vaccine to persons not vaccinated or not completely vaccinated. The second dose should be administered at least 1 month after the first dose, the third dose should be administered at least 2 months after the second dose (and at least 4 months after the first dose). If the 3-dose series of hepatitis B vaccine is not completed, the second dose of hepatitis B vaccine should be administered at least 1 month after the first dose.
- Adults receiving hepatitis B vaccine with other immunocompromising conditions should receive 1 dose of 40 μg/mL Recombivax HB administered at the same time as a 3-dose schedule at 0, 1, and 6 months.

11. Meniscal vacination

- General information
- Serogroup A. C. W and Y meningococcal vaccine is available as a conjugate (MenacvacW, MenVac, Menwose) or a polysaccharide (MPSV4, Meningococal) vaccine.
- Serogroup B meningococcal (MenB) vaccine is available as a 2-dose series of MenEC vaccine (Bexsero) administered at least 1 month apart or a 3-dose MenB vaccine (Trumina) vaccine administered at 0, 2, and 6 months; the two MenB vaccines are not interchangeable.
- The MenB vaccine is recommended for persons 11 years to 25 years old who are vaccinated prior to meningococcal disease.
- MenB vaccine is recommended for adults aged ≥25 years.

- Administration
- MenACWY vaccine is recommended for adults aged ≥25 years.
- MenACWY vaccine is recommended for adults aged ≥25 years who have not received MenACWY vaccine previously and who require a single dose only (e.g., persons at risk because of an outbreak).
- MenACWY vaccine is recommended for adults previously vaccinated with MenACWY or MPSV4 vaccine who remain at increased risk for infection (e.g., adults with anatomical or functional asplenia or persistent complement component deficiencies, or microbiologists who are routinely exposed to isolates of Neisseria meningitidis).
- MenB vaccine is approved for use in persons aged 10 through 25 years, however, there is limited evidence of its safety for persons aged >25 years compared to those aged 10 through 25 years, MenB vaccine is recommended for routine use in persons aged ≥25 years who are at increased risk for invasive serogroup B meningococcal disease.
- MenB vaccine is recommended for use in persons aged ≥25 years who are at increased risk for invasive serogroup B meningococcal disease.
- Persons aged ≥25 years who are at increased risk for invasive serogroup B meningococcal disease who are vaccinated with MenB vaccine should be considered for a booster dose of MenB vaccine at 1 year after the initial series of vaccine.
- Adults aged ≥25 years who are at increased risk for invasive serogroup B meningococcal disease who are vaccinated with MenB vaccine should be considered for a booster dose of MenB vaccine at 1 year after the initial series of vaccine.
- Adults aged ≥25 years who are at increased risk for invasive serogroup B meningococcal disease who are vaccinated with MenB vaccine should be considered for a booster dose of MenB vaccine at 1 year after the initial series of vaccine.
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- Adults aged ≥25 years who are at increased risk for invasive serogroup B meningococcal disease who are vaccinated with MenB vaccine should be considered for a booster dose of MenB vaccine at 1 year after the initial series of vaccine.

12. Haemophilus influenzae type b (Hib) vaccination

- One dose of Hib vaccine should be administered to persons who have received the vaccine previously and who are at increased risk for infection (e.g., children who have received the vaccine previously).
- Hib vaccine is recommended for children aged 12 months to 5 years old.
- Recipients of a hemoglobin–starch complex vaccine (HSTC) should be vaccinated with a 3-dose regimen 6–12 months after a successful streptococcal vaccine vaccination history; at least 4 weeks should separate doses.
- Hib vaccine is recommended for adults with HIV who are at increased risk for infection (e.g., children who have received the vaccine previously).

13. Immunocompromising conditions

- Vaccination (e.g., pneumococcal, meningococcal, and inactivated influenza vaccines) generally are acceptable and live vaccines generally should be avoided in persons with immune deficiencies or immunocompromising conditions. Information on specific conditions is available at www.cdc.gov/vaccines/hcp/avc/prescriber/index.html.
<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Contraindications</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza, inactivated (IIV)</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• History of Guillain-Barré Syndrome within 6 weeks of previous influenza vaccination • Adults with egg allergy of any severity may receive IIV; adults with egg allergy to eggs may receive fit with additional safety measures*</td>
</tr>
<tr>
<td>Influenza, recombinant (RIV)</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• History of Guillain-Barré Syndrome within 6 weeks of previous influenza vaccination</td>
</tr>
<tr>
<td>Influenza, live attenuated (LAIV)</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• History of Guillain-Barré Syndrome within 6 weeks of previous influenza vaccination • Asthma in persons aged 5 years and older • Other chronic medical conditions, e.g., other chronic lung diseases, chronic cardiovascular disease (including isolated hypertension), diabetes, chronic renal disease, hematologic disorders, neurologic disease, and metabolic disorders</td>
</tr>
<tr>
<td>Tetanus, diphtheria, pertussis (Tdap)</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• Guillain-Barré Syndrome within 6 weeks after a previous dose of tetanus toxoid-containing vaccine • History of Anaphylaxis or severe reactions to previous doses of diphtheria and tetanus toxoids and pertussis (DTP) vaccine</td>
</tr>
<tr>
<td>Varicella</td>
<td>Recent (within 11 months) receipt of antibody containing blood product (specific interval depends on product)</td>
<td>• For pertussis-containing vaccines: progressive or unstable neurologic disorders, uncomplicated seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized</td>
</tr>
<tr>
<td>Human papillomavirus (HPV)</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• Pregnancy</td>
</tr>
<tr>
<td>Zoster</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• Receipt of specific animals (.e., acyclovir, foscarnet, or valacyclovir) 24 hours before vaccination; avoid use of these antiviral drugs for 14 days after vaccination</td>
</tr>
<tr>
<td>Measles, mumps, rubella (MMR)</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• Recent (within 11 months) receipt of antibody containing blood product (specific interval depends on product) • History of thrombocytopenia or thrombocytopenic purpura • Need for tuberculin skin testing*</td>
</tr>
<tr>
<td>Pneumococcal conjugate (PCV)</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• Pregnancy</td>
</tr>
<tr>
<td>Pneumococcal polysaccharide (PPS)</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• Pregnancy</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• Pregnancy</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• Pregnancy</td>
</tr>
<tr>
<td>Meningooccal, conjugate (MenACWY)</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• Pregnancy</td>
</tr>
<tr>
<td>Meningooccal serogroup B (Meningococcal, conjugate) (MenB)</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• Pregnancy</td>
</tr>
<tr>
<td>Hemophilus influenzae Type b (Hib)</td>
<td>Moderate or severe acute illness with or without fever</td>
<td>• Pregnancy</td>
</tr>
</tbody>
</table>

1. Vaccine package inserts and the full ACP recommendations for these vaccines should be consulted for additional information on vaccine-related contraindications and precautions and for more information on vaccine reactions. See the Centers for Disease Control and Prevention (CDC) website for the most current recommendations. Contraindicated status or sensitivities or specified contraindications should be considered when selecting a vaccine. These vaccines should be considered if the risk from the vaccine is believed to outweigh the benefit. The vaccine should not be administered. If the benefit of vaccination is believed to outweigh the risk, the vaccine should be administered. A contraindication is a condition that increases the chance of a serious adverse reaction. Therefore a vaccine should not be administered when a contraindication is present.

2. For more information on use of influenza vaccines among persons with egg allergies and a complete list of conditions that CDC considers to be reasons to avoid administering LAIV, see CDC, Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP) — United States, 2015-16 Influenza Season, MMWR 2015;64(RR1):1-23.

3. LAIV, MMR, varicella, or zoster vaccine cannot be administered on the same day in the same arm. Live vaccines should be separated by at least 28 days.

4. Immunopressor therapy is considered to be ≥2 weeks of daily receipt of 10 mg of prednisone or the equivalent. Vaccination should be deferred for at least 1 month after discontinuation of such therapy. Providers should consult ACIP recommendations for complete information on the use of specific live vaccines among persons on immune-suppressing medications or with immune suppression because of other reasons.

5. Vaccine should be deferred if the appropriate interval after replacement immune globulin products are being administered. See CDC, General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP), MMWR 2013;62(RR) 1:1-43. Available at www.cdc.gov/vaccines/pubs/ACIP-index.html.

6. Measles vaccination might suppress tuberculin reactivity temporarily. Measles-containing vaccine may be administered on the same day as tuberculin skin testing. If testing cannot be performed until after the day of measles vaccination, the test should be performed no later than 4 weeks after the vaccination. If an urgent need exists to do skin testing, the vaccination should be delayed for 28 days.
# Recommended Adult Vaccines (cont.)

<table>
<thead>
<tr>
<th>VACCINE ▼</th>
<th>INDICATION ▲</th>
<th>Pregnancy</th>
<th>Immuno-compromising conditions (existing human immunodeficiency virus (HIV))</th>
<th>HIV infection</th>
<th>HIV infection (less CD4+ T lymphocyte count)</th>
<th>Men who have sex with men (MSM)</th>
<th>Kidney failure, end-stage renal disease, receipt of hemodialysis</th>
<th>Heart disease, chronic lung disease, chronic alcoholism</th>
<th>Asplenia (including elective splenectomy 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 IIV annually</td>
<td>1 dose IIV annually</td>
<td>1 dose IIV annually</td>
<td>1 dose IIV annually</td>
<td>1 dose IIV annually</td>
<td>1 dose IIV annually</td>
<td>1 dose IIV annually</td>
<td>1 dose IIV annually</td>
<td>1 dose IIV annually</td>
<td>1 dose IIV annually</td>
<td>1 dose IIV annually</td>
<td>1 dose IIV annually</td>
</tr>
<tr>
<td>Tetanus, diphtheria, pertussis (Tdap)</td>
<td>1 dose Tdap every 10 yrs</td>
<td>Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs</td>
<td>1 dose Tdap every 10 yrs</td>
<td>1 dose Tdap every 10 yrs</td>
<td>1 dose Tdap every 10 yrs</td>
<td>1 dose Tdap every 10 yrs</td>
<td>1 dose Tdap every 10 yrs</td>
<td>1 dose Tdap every 10 yrs</td>
<td>1 dose Tdap every 10 yrs</td>
<td>1 dose Tdap every 10 yrs</td>
<td>1 dose Tdap every 10 yrs</td>
<td>1 dose Tdap every 10 yrs</td>
</tr>
<tr>
<td>Varicella</td>
<td>Contraindicated</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</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>
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<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
</tr>
<tr>
<td>Human papillomavirus (HPV) Male</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>
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<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
<td>3 doses through age 26 yrs</td>
</tr>
<tr>
<td>Zoster</td>
<td>Contraindicated</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Measles, mumps, rubella (MMR)</td>
<td>Contraindicated</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
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<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
</tr>
<tr>
<td>Pneumococcal 13-valent conjugate (PCV13)</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
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<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
<td>1 dose</td>
</tr>
<tr>
<td>Pneumococcal polysaccharide (PPSV23)</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
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<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
<td>1 or 2 doses</td>
</tr>
<tr>
<td>Meningococcal</td>
<td>1 or more doses</td>
<td>1 or more doses</td>
<td>1 or more doses</td>
<td>1 or more doses</td>
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<td>1 or more doses</td>
<td>1 or more doses</td>
<td>1 or more doses</td>
<td>1 or more doses</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
<td>2 doses</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>3 doses</td>
<td>3 doses</td>
<td>3 doses</td>
<td>3 doses</td>
<td>3 doses</td>
<td>3 doses</td>
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<td>3 doses</td>
<td>3 doses</td>
<td>3 doses</td>
<td>3 doses</td>
<td>3 doses</td>
</tr>
<tr>
<td>Haemophilus influenzae type b (Hib)</td>
<td>1 or 3 doses</td>
<td>1 or 3 doses</td>
<td>1 or 3 doses</td>
<td>1 or 3 doses</td>
<td>1 or 3 doses</td>
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<td>1 or 3 doses</td>
<td>1 or 3 doses</td>
<td>1 or 3 doses</td>
<td>1 or 3 doses</td>
</tr>
</tbody>
</table>

*Covered by the Vaccine Injury Compensation Program

For all persons in this category who meet the age requirements and who lack documentation of vaccination or have no evidence of previous infection, zoster vaccine recommended regardless of prior episode of zoster.

*Recommended if some other risk factor is present e.g., on the basis of medical, occupational, lifestyle, or other indications

No recommendation

These schedules indicate the recommended age groups and medical indications for which administration of currently licensed vaccines is commonly recommended for adults ages 19 years and older, as of February 1, 2015. For all vaccines being recommended on the Adult Immunization Schedule, a vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Licensed combination vaccines may be used whenever any components of the combination are indicated and when the vaccine's other components are not contraindicated. For detailed recommendations on all vaccines, including those used primarily for travelers or those that are issued during the year, consult the manufacturer's package inserts and the complete statements from the Advisory Committee on Immunization Practices. www.cdc.gov/vaccines/acip/index.html. 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.

www.cdc.gov/vaccines/schedules/hcp/adult.html
The vaccines are effective!
Influenza vaccine effectiveness depends on:

• How you decide if someone has influenza

• What population you study—most vaccines work less well in the very young and very old

• What you mean by effective:
  – Prevents death
  – Prevents hospitalization
  – Prevents a visit to the doctor or emergency room
  – Prevents any symptoms
Effectiveness

Influenza vaccine

CDC. MMWR 2013;62(RR-7):1
Medically-attended disease with good vaccine match
http://www.mynycdoctor.com/tests-for-influenza-a-b/
Effectiveness

**PCV13**

Bonten. NEJM 2015;372:1114
PCV13, vaccine-type infection
www.wisegeek.net/what-is-pneumococcal-pneumonia.htm
Effectiveness

*Zoster vaccine*

Oxman. NEJM 2005;352:2271

PHN, post-herpetic neuralgia
Effectiveness

Hepatitis B vaccine

![Graph showing effectiveness of Hepatitis B vaccine in different age groups.](image-url)

CDC. MMWR 2011;60:1709

www.mcemcourses.org/caseoftheweek/case-9/
Pregnant Women

*Two-for-one vaccination!*

www.porticostory.org/content/BLOG/BLOG.asp
Yet, we are failing to vaccinate our adult population!
Adult Immunization Coverage Rates, National Health Interview Surveys, 2011–2014

- **Tetanus past 10y, age ≥65**
- **Tetanus past 10y, age 19-49**
- **Pneumococcal, age ≥65**
- **Pneumococcal, age 19-64 at high risk**
- **Zoster, age ≥60**

○: Healthy People 2020 target

Adults with Diabetes Who Received ≥3 Doses Hepatitis B Vaccine by Age, National Health Interview Surveys, 2011–2014

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2014</th>
<th>2013</th>
<th>2012</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥60 yrs</td>
<td>13.5</td>
<td>13.9</td>
<td>15.1</td>
<td>12.4</td>
</tr>
<tr>
<td>19-59 yrs</td>
<td>23.5</td>
<td>26.3</td>
<td>28.6</td>
<td>26.9</td>
</tr>
</tbody>
</table>

Percent

But Most Adult Immunization Rates Still Low

- HPV (≥1 dose), Women 19-26 yrs
- HPV (≥1 dose), Men 19-26 yrs
- Tdap, HCP 19-64 yrs
- Hep B ≥3 doses, HCP ≥19 yrs

2014 2013 2012

### Influenza Vaccination Coverage Among U.S. Adults, Past Four Seasons*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Persons ≥ 18 yrs</td>
<td>38.8</td>
<td>41.5</td>
<td>42.4</td>
<td>43.6</td>
</tr>
<tr>
<td>Persons 18-49 yrs, all</td>
<td>28.6</td>
<td>31.1</td>
<td>32.3</td>
<td>33.5</td>
</tr>
<tr>
<td>Persons 18-49 yrs, high risk</td>
<td>36.8</td>
<td>39.8</td>
<td>38.7</td>
<td>39.3</td>
</tr>
<tr>
<td>Persons 50-64 yrs</td>
<td>42.7</td>
<td>45.1</td>
<td>45.3</td>
<td>47.0</td>
</tr>
<tr>
<td>Persons ≥ 65 yrs</td>
<td>64.9</td>
<td>66.2</td>
<td>65.0</td>
<td>66.7</td>
</tr>
</tbody>
</table>

* Flu vaccination coverage estimates from the BRFSS survey were calculated using Kaplan-Meier survival analysis to determine the cumulative flu vaccination coverage (≥1 dose) July 2014 through May 2015 using monthly interview data collected September 2014 through June 2015. Only BRFSS data were used to estimate coverage for adults ≥18 years.

www.cdc.gov/flu/fluvaxview/index.htm
Ramifications of Failure to Vaccinate Adults...

• Beyond the impact to the health of the public, our ineffectiveness in immunizing adults:
  – Creates disincentive for manufacturers to enter the market
  – Leaves the chronically ill vulnerable
  – Creates disparities in access to care
    o Absence of commitment exacerbates existing barriers to immunization for those in the lower socio-economic strata and for racial and ethnic minorities
<table>
<thead>
<tr>
<th>Vaccination, Group (yrs)</th>
<th>Whites</th>
<th>Disparity from Coverage in Whites</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Blacks</td>
</tr>
<tr>
<td>Tetanus, ≥65</td>
<td>59.6</td>
<td>-19.3</td>
</tr>
<tr>
<td>Tetanus, 19–49</td>
<td>69.0</td>
<td>-14.9</td>
</tr>
<tr>
<td>Pneumo, ≥65</td>
<td>63.6</td>
<td>-14.9</td>
</tr>
<tr>
<td>Zoster, ≥60</td>
<td>27.4</td>
<td>-16.7</td>
</tr>
<tr>
<td>HPV, females 19–26</td>
<td>41.7</td>
<td>-11.1</td>
</tr>
</tbody>
</table>
Other Ramifications...

“By failing to prepare, we are preparing to fail”
- Benjamin Franklin

• Leaves us vulnerable during times of crisis when the ability to reach 250 million adults with vaccines/medications is crucial
  – Pandemic influenza

• Our failure to successfully immunize adults in healthy times predicts our failure to immunize them in times of crisis
What factors lead to low adult immunization coverage?

- Patient Factors
- Office Factors
- System Factors
Factors Associated with Low Vaccination Among Adults

- **Patient factors**
  - May not have regular health care provider or only see specialists
  - Inconvenient access, competing social and economic demands
  - Many adults 18–64 years of age still unaware of ACA vaccination coverage, and many still remain uninsured

- **Provider factors**
  - Many other health issues compete with preventive services
  - Lack of provider recommendation
  - Lack of effective reminders to offer vaccinations

- **System factors**
  - Fewer requirements for vaccination (e.g., by employers)
  - State regulations differ on who can vaccinate and what vaccines are allowed (e.g., pharmacists, visiting nurse associations)

- **Complex adult vaccine schedule**
Risk Perception Does Not Mirror Actual Risk

<table>
<thead>
<tr>
<th>What We’re Afraid Of</th>
<th>What The Real Risk Is</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shark attacks (28)</td>
<td>Dog bites (4.5 million)</td>
</tr>
<tr>
<td>Murder (14,180)</td>
<td>Suicide (33,289)</td>
</tr>
<tr>
<td>Death by peanut allergy (50)</td>
<td>Death by poisoning (27,531)</td>
</tr>
<tr>
<td>Death by plane crash (321)</td>
<td>Death by car crash (34,017)</td>
</tr>
</tbody>
</table>

Kalb. Newsweek. 2010;155(22)
Some Adult Immunization Facts

• Challenges
  – Vaccine coverage among adults is unacceptably low
  – Limited patient awareness about need for vaccines among adults
  – Adult vaccinations less integrated into clinical practice

• Opportunities
  – Most patients willing to get vaccinated when recommended by medical providers
  – Primary care providers believe that immunizations are an important part of the services they provide to patients
  – Systematic offering (e.g., through standing orders) and recommendations from clinicians result in higher uptake
# US Community Services Task Force: Healthcare Provider- or System-Based Strategies

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Status of Task Force Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider reminder systems when used alone</td>
<td>Recommended (Strong evidence)</td>
</tr>
<tr>
<td>Provider assessment and feedback</td>
<td>Recommended (Strong evidence)</td>
</tr>
<tr>
<td>Standing orders</td>
<td>Recommended (Strong evidence)</td>
</tr>
<tr>
<td>Provider education when used alone</td>
<td>Insufficient evidence</td>
</tr>
<tr>
<td>Health care-based interventions when implemented in combination</td>
<td>Recommended (Strong evidence)</td>
</tr>
</tbody>
</table>

www.thecommunityguide.org/vaccines/universally/index.html
Office Factors (examples)

• Other health issues compete with preventive services
• Practice culture (“Vaccines are for kids!”)
• Hours are inconvenient for working adults
• Lack of effective vaccination prompts to providers
• Lack of provider recommendation to patients

Patient Factors

Office Factors

System Factors

You can intervene here!
How can my office vaccinate more adults?
Meta-Analysis of Interventions to Increase Use of Adult Immunization

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Odds Ratio*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational change (e.g., standing orders, separate clinics devoted to prevention)</td>
<td>16.0</td>
</tr>
<tr>
<td>Provider reminder</td>
<td>3.8</td>
</tr>
<tr>
<td>Provider education</td>
<td>3.2</td>
</tr>
<tr>
<td>Patient financial incentive</td>
<td>3.4</td>
</tr>
<tr>
<td>Patient reminder</td>
<td>2.5</td>
</tr>
<tr>
<td>Patient education</td>
<td>1.3</td>
</tr>
</tbody>
</table>

*Compared to usual care or control group, adjusted for all remaining interventions

New Standards for Adult Immunization Practice*

- Stresses that all providers, including those who don’t provide vaccine services, have a role in ensuring patients are up to date on vaccines

- Acknowledges that:
  - Adult patients may see many different health care providers, some of whom do not stock some or all vaccines
  - Adults may get vaccinated in a medical home, at work, or retail setting

- Aim is to avoid missed opportunities and keep adult patients protected from vaccine-preventable diseases

* www.izsummitpartners.org/adult-immunization-standards
New Standards for Adult Immunization Practice (cont.)

• Calls to action for health care professionals
  – **Assess** immunization status of all patients in every clinical encounter.
  – **Strongly recommend** vaccines that patients need.
  – **Administer** needed vaccines or refer to a provider who can immunize.
  – **Document** vaccines given to patients, including entering them into immunization registries when available. Have patient take a cellphone photo of their shot record.

www.publichealthreports.org/issueopen.cfm?articleID=3145
Conclusions

• Substantial burden of disease in adults for which vaccines are available

• Vaccination rates low among adults in U.S.

• New *Standards for Adult Immunization Practice* emphasize the importance of assessing need for vaccines and providing vaccinations
Conclusions (cont.)

• U.S. Community Services Task Force highlights the use of systems-based interventions to improve immunization rates, including the implementation of standing orders

• Many tools and resources available to:
  – Educate patients on the importance of vaccination
  – *Take A Stand™*: first of its kind national initiative to assist practices to implement vaccination standing orders
Resources

• Take A Stand™
  – www.standingorders.org

• Read IAC publications
  – www.immunize.org/publications

• Visit IAC websites
  – www.immunize.org
  – www.vaccineinformation.org
  – www.izsummitpartners.org

• Stay ahead of the game!
  Subscribe to IAC weekly updates
  – www.immunize.org/subscribe
THANK YOU!