

# **Adult Immunization Schedule, 2014**

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**for the ACIP Adult Immunization Work Group**

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# Adult Immunization Work Group (WG)

## ACIP Members

- Tamera Coyne-Beasley (Chair)
- Kathleen Harriman (ACIP)
- Jonathan Temte (ACIP)

## Ex Officio Members:

- Terri Murphy (FDA)

## CDC Lead

- Carolyn Bridges (CDC)

## Liaison Representatives

- Sandra Fryhofer (ACP, AMA);
- Laura Pinkston Koenigs (SAHM);
- Marie-Michele Leger (AAPA);
- Gregory Poland (ACP);
- Laura Riley (ACOG);
- Joni Reynolds (AIM);
- William Schaffner (NFID);
- Kenneth Schmader (AGS);
- Richard Zimmerman (AAFP);

## Consultants

- Diane Peterson (IAC);
- Litjen Tan (IAC);

# Background

- **Each year, ACIP updates the adult immunization schedule**
  - Reflects and summarizes existing ACIP policy
    - No new policy
  - Monthly meetings of work group and consultation with vaccine subject matter experts
  - Will update with approved policy changes from the October ACIP meeting if published in MMWR prior to publication of Adult Schedule
- **2013 adult schedule also approved by:**
  - American College of Physicians
  - American Academy of Family Physicians
  - American College of Obstetricians and Gynecologists
  - American College of Nurse Midwives

# **Proposed changes to Adult Schedule for 2014:**

## **Figures**

- Moved PPSV23 bar below the bar for PCV13**
- Added bar for Hib vaccine**

## Recommended Adult Immunization Schedule—United States - DRAFT 2014

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 adult immunization schedule, by vaccine and age group<sup>1</sup>

VACCINE ▼	AGE GROUP ►	19-21 years	22-26 years	27-49 years	50-59 years	60-64 years	≥ 65 years
Influenza <sup>2,*</sup>					1 dose annually		
Tetanus, diphtheria, pertussis (Td/Tdap) <sup>3,*</sup>				Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs			
Varicella <sup>4,*</sup>				2 doses			
Human papillomavirus (HPV) Female <sup>5,*</sup>		3 doses					
Human papillomavirus (HPV) Male <sup>5,*</sup>		3 doses					
Zoster <sup>6</sup>						1 dose	
Measles, mumps, rubella (MMR) <sup>7,*</sup>		1 or 2 doses					
Pneumococcal 13-valent conjugate (PCV13) <sup>8,*</sup>				1 dose			
Pneumococcal polysaccharide (PPSV23) <sup>9,10</sup>			1 or 2 doses			1 dose	
Meningococcal <sup>11,*</sup>			1 or more doses				
Hepatitis A <sup>12,*</sup>			2 doses				
Hepatitis B <sup>13,*</sup>			3 doses				
Haemophilus influenzae type b (Hib) <sup>14,*</sup>			1 or 3 doses				

\*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 indication)

No recommendation

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), American College of Obstetricians and Gynecologists (ACOG) and American College of Nurse-Midwives (ACNM).

Figure 2. Vaccines that might be indicated for adults based on medical and other indications<sup>1</sup>

VACCINE ▼	INDICATION ►	Pregnancy	Immuno-compromising conditions (excluding human immunodeficiency virus [HIV]) <sup>4,6,7,10,15</sup>	HIV infection CD4+ T lymphocyte count <sup>4,6,7,10,14,15</sup>	Men who have sex with men (MSM)	Kidney failure, end-stage renal disease, receipt of hemodialysis	Heart disease, chronic lung disease, chronic alcoholism	Asplenia (including elective splenectomy and persistent complement component deficiencies) <sup>10,14</sup>	Chronic liver disease	Diabetes	Healthcare personnel
			< 200 cells/µL	≥ 200 cells/µL							
Influenza <sup>2,*</sup>				1 dose IIV annually		1 dose IIV or LAIV annually		1 dose IIV annually			1 dose IIV or LAIV annually
Tetanus, diphtheria, pertussis (Td/Tdap) <sup>3,*</sup>		1 dose Tdap each pregnancy				Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs					
Varicella <sup>4,*</sup>		Contraindicated						2 doses			
Human papillomavirus (HPV) Female <sup>5,*</sup>			3 doses through age 26 yrs					3 doses through age 26 yrs			
Human papillomavirus (HPV) Male <sup>5,*</sup>			3 doses through age 26 yrs					3 doses through age 21 yrs			
Zoster <sup>6</sup>		Contraindicated						1 dose			
Measles, mumps, rubella (MMR) <sup>7,*</sup>		Contraindicated						1 or 2 doses			
Pneumococcal 13-valent conjugate (PCV13) <sup>8,*</sup>					1 dose						
Pneumococcal polysaccharide (PPSV23) <sup>9,10</sup>					1 or 2 doses						
Meningococcal <sup>11,*</sup>					1 or more doses						
Hepatitis A <sup>12,*</sup>					2 doses						
Hepatitis B <sup>13,*</sup>					3 doses						
Haemophilus influenzae type b (Hib) <sup>14,*</sup>		post-HSCT recipients only			1 or 3 doses						

\*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 indicated for adults ages 19 years and older, as of February 1, 2014. 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/pubs/acip-list.htm](http://www.cdc.gov/vaccines/pubs/acip-list.htm)). 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.



# Proposed Updates to Footnotes

## □ Influenza vaccine

- Information on the recombinant influenza vaccine (RIV) and the use of RIV and IIV among egg allergic patients was added

## □ Td/Tdap footnote updates

- Harmonizes language with pediatric schedule
- Includes information on Td boosters which was inadvertently dropped from footnote in prior schedules, but was continuously included on the figure

## □ Varicella

- Clarifies that immunocomprised adults born in the US before 1980 may not be immune to varicella

## □ HPV

- Language harmonized with pediatric schedule regarding intervals between 1<sup>st</sup> and 2<sup>nd</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> and 1<sup>st</sup> and 3<sup>rd</sup> doses.
- Removed bullet on HCP and vaccination, similar to Zoster footnote

## Proposed Updates to Footnotes, slide 2

- **Zoster vaccine**
  - Simplified by removing statement about healthcare personnel not a specific indication for vaccination
- **PCV13 and PPSV23**
  - PCV13 footnote and row on the figures was placed ahead of the PPSV23 vaccine so that providers seeing patients who had indications for both vaccines will have information about the recommendation to administer PCV13 before PPSV23.
- **Meningococcal vaccine**
  - Clarified which persons needed 1 versus more than one dose of MCV4 or MPSV4 and
  - Clarified that persons with HIV are not routinely recommended for MCV4, but clarifies that 2 doses of MCV4 should be given among HIV-infected persons who are vaccinated

# Proposed Updates to Footnotes, slide 3

## **Hib vaccine**

- Updated language added per the recently ACIP approved updated Hib recommendations
- The updated Hib recommendations are pending publication in the MMWR

## Contraindications Table

- ❑ Added recombinant influenza vaccine (RIV) information
- ❑ Updated information on influenza vaccine use among persons with egg allergy
- ❑ Added Hib vaccine

## Next Steps

- **Revise based on ACIP meeting**
- **Submit for CDC clearance, including re-review by vaccine specific SMEs, and review by professional medical organizations on October 28, 2013**
  - American Academy of Family Physicians (AAFP)
  - American College of Physicians (ACP)
  - American College of Obstetricians and Gynecologists (ACOG)
  - American College of Nurse Midwives (ACNM)
- **Submit to MMWR December 2, 2013**
- **Publication in Annals of Internal Medicine and MMWR anticipated in early February 2013 along with publication of 2011 NHIS estimates of non-influenza vaccine coverage in adults**

## **Discussion and Vote**

# Extra slides for Footnote Discussions

- 2. Influenza vaccination
  - Annual vaccination against influenza is recommended for all persons aged 6 months and older.
  - Persons aged 6 months and older, including pregnant women and persons with hives only allergy to eggs, can receive the inactivated influenza vaccine (IIV). An age-appropriate IIV vaccine formulation should be used.
  - Adults 18-49 years of age can receive the recombinant influenza vaccine (RIV) (FluBlok). RIV does not contain any egg protein.
  - Healthy, nonpregnant persons aged 2–49 years without high-risk medical conditions can receive either intranasally administered live, attenuated influenza vaccine (LAIV) (FluMist), or IIV. Healthcare personnel who care for severely immunocompromised persons (i.e., those who require care in a protected environment) should receive IIV or RIV rather than LAIV.
  - The intramuscularly or intradermally administered IIV are options for adults aged 18–64 years.
  - Adults aged 65 years and older can receive the standard dose IIV or the high-dose IIV (Fluzone High-Dose).

- 3. Tetanus, diphtheria, and acellular pertussis (Td/Tdap) vaccination
  - Administer one dose of Tdap vaccine to pregnant women during each pregnancy (preferred during 27–36 weeks' gestation), regardless of time interval number of years since prior Td or Tdap vaccination.
  - ~~Administer Tdap to all other adults who have not previously received Tdap or for whom vaccine status is unknown. Tdap can be administered regardless of interval since the most recent tetanus or diphtheria toxoid containing vaccine.~~
  - Persons aged 11 years and older who have not received Tdap vaccine or for whom vaccine status is unknown should receive a dose of Tdap followed by tetanus and diphtheria toxoids (Td) booster doses every 10 years thereafter.  
Tdap can be administered regardless of interval since the most recent tetanus or diphtheria-toxoid containing vaccine.
  - Repeat doses of Tdap are not recommended except during every pregnancy.
  - Adults with an unknown or incomplete history of completing a 3-dose primary vaccination series with Td-containing vaccines should begin or complete a primary vaccination series including a Tdap dose.
  - For unvaccinated adults, administer the first 2 doses at least 4 weeks apart and the third dose 6–12 months after the second.
  - For incompletely vaccinated (i.e., less than 3 doses) adults, administer remaining doses.
- Refer to the Advisory Committee on Immunization Practices (ACIP) statement for recommendations for administering Td/Tdap as prophylaxis in wound management (see footnote #1).

#### □ 4. Varicella vaccination

- All adults without evidence of immunity to varicella (as defined below) should receive 2 doses of single-antigen varicella vaccine or a second dose if they have received only 1 dose.
- Special consideration for vaccination should be given to those who have close contact with persons at high risk for severe disease (e.g., health-care personnel and family contacts of persons with immunocompromising conditions) or are at high risk for exposure or transmission (e.g., teachers; child care employees; residents and staff members of institutional settings, including correctional institutions; college students; military personnel; adolescents and adults living in households with children; nonpregnant women of childbearing age; and international travelers).
- Pregnant women should be assessed for evidence of varicella immunity. Women who do not have evidence of immunity should receive the first dose of varicella vaccine upon completion or termination of pregnancy and before discharge from the health-care facility. The second dose should be administered 4–8 weeks after the first dose.
- Evidence of immunity to varicella in adults being considered for vaccination includes any of the following:
  - documentation of 2 doses of varicella vaccine at least 4 weeks apart;
  - U.S.-born before 1980 except health-care personnel, and pregnant women;
  - history of varicella based on diagnosis or verification of varicella disease by a health-care provider;
  - history of herpes zoster based on diagnosis or verification of herpes zoster disease by a health-care provider; or
  - laboratory evidence of immunity or laboratory confirmation of disease.

- 5. Human papillomavirus (HPV) vaccination
  - [... No Changes to First Five Bullets...]
  - A complete series for either HPV4 or HPV2 consists of 3 doses. The second dose should be administered 4-8 weeks after the first dose; the third dose should be administered at least 12 weeks after the second dose and at least 6 months (24 weeks) after the first dose.
  - ~~A complete series for either HPV4 or HPV2 consists of 3 doses. The second dose should be administered 1–2 months after the first dose; the third dose should be administered 6 months after the first dose (at least 24 weeks after the first dose).~~
  - HPV vaccines are not recommended for use in pregnant women. However, pregnancy testing is not needed before vaccination. If a woman is found to be pregnant after initiating the vaccination series, no intervention is needed; the remainder of the 3-dose series should be delayed until completion of pregnancy.
  - ~~Although HPV vaccination is not specifically recommended for healthcare personnel (HCP) based on their occupation, HCP should receive the HPV vaccine as recommended (see above).~~

□ **6. Zoster vaccination**

- A single dose of zoster vaccine is recommended for adults aged 60 years and older regardless of whether they report a prior episode of herpes zoster. Although the vaccine is licensed by the Food and Drug Administration (FDA) for use among and can be administered to persons aged 50 years and older, ACIP recommends that vaccination begins at age 60 years.
- Persons aged 60 years and older with chronic medical conditions may be vaccinated unless their condition constitutes a contraindication, such as pregnancy or severe immunodeficiency.
- ~~Although zoster vaccination is not specifically recommended for HCP, they should receive the vaccine if they are in the recommended age group.~~

- **9. Pneumococcal polysaccharide (PPSV23) vaccination**
  - **When PCV13 is also indicated, PCV13 should be given first (see footnote #8).**
  - **Vaccinate all persons with the following indications: ....**
    - [....No Changes to sub-bullets or next 5 bullets....]
  - **When indicated, PPSV23 vaccine should be administered to patients who are uncertain of their vaccination status and there is no record of vaccination.**
  - **~~When PCV13 is also indicated, PCV13 should be given first (see footnote #8).~~**

- 11. Meningococcal vaccination – part A
  - Administer 2 doses of quadrivalent meningococcal conjugate vaccine (MCV4) at least 2 months apart to adults of all ages with functional asplenia or persistent complement component deficiencies.
  - HIV infection is not an indication for routine MCV4 vaccination. If an HIV-infected person of any age of all ages ages is vaccinated, ~~also should receive 2 doses of MCV4 vaccine should be administered at least 2 months apart.~~
  - Administer a single dose of meningococcal vaccine to microbiologists routinely exposed to isolates of *Neisseria meningitidis*, military recruits, persons at risk during an outbreak attributable to a vaccine serogroup, and persons who travel to or live in countries in which meningococcal disease is hyperendemic or epidemic.
  - First-year college students up through age 21 years who are living in residence halls should be vaccinated if they have not received a dose on or after their 16th birthday.

- 11. Meningococcal vaccination – part B
  - ~~MCV4 is preferred for adults with any of the preceding indications who are aged 55 years and younger; meningococcal polysaccharide vaccine (MPSV4) is preferred for adults age 56 years and older.~~
  - MCV4 is preferred for adults with any of the preceding indications who are aged 55 years and younger as well as for adults aged 56 years and older who a) were vaccinated previously with MCV4 and are recommended for revaccination or b) for whom multiple doses are anticipated. Meningococcal polysaccharide vaccine (MPSV4) is preferred for adults age 56 years and older who have not received MCV4 previously and who require a single dose only (e.g., travelers).
  - Revaccination with MCV4 every 5 years is recommended for adults previously vaccinated with MCV4 or MPSV4 who remain at increased risk for infection (e.g., adults with anatomic or functional asplenia, ~~or~~ persistent complement component deficiencies, or microbiologists).

- 14. **Selected conditions for which *Haemophilus influenzae* type b (Hib) vaccine may be used**
  - ~~1 dose of Hib vaccine should be considered for persons who have sickle cell disease, leukemia, or HIV infection, or who have anatomic or functional asplenia if they have not previously received Hib vaccine.~~
  - 1 dose of Hib vaccine should be administered to persons who have functional or anatomic asplenia, sickle cell disease, or are undergoing elective splenectomy, if they have not previously received Hib vaccine. Hib vaccination 14 or more days before splenectomy is suggested.
  - Recipients of hematopoietic stem cell transplant (HSCT) should be vaccinated with a 3-dose regimen 6 months after successful transplant, regardless of vaccination history; at least 4 weeks should separate doses.
  - Hib vaccine is not recommended for adults with HIV infection since their risk of Hib infection is low.

**TABLE. Contraindications and precautions to commonly used vaccines in adults<sup>1\*†</sup>**

Vaccine	Contraindications	Precautions
Influenza, inactivated vaccine (IIV) <sup>2</sup>	Severe allergic reaction (e.g., anaphylaxis) after previous dose of any <u>IIV</u> or <u>LAIV</u> or to a vaccine component, including egg protein.	Moderate or severe acute illness with or without fever. History of Guillain-Barré Syndrome (GBS) within 6 weeks of previous influenza vaccination. Persons who experience only hives with exposure to eggs may receive <u>RIV</u> (if age 18-49) or, <u>with additional safety precautions</u> , <u>IIV</u> . <sup>2</sup>
Influenza, recombinant (RIV)	Severe allergic reaction (e.g., anaphylaxis) after previous dose of RIV or to a vaccine component. RIV does not contain any egg protein <sup>2</sup> .	Moderate or severe acute illness with or without fever. History of GBS within 6 weeks of previous influenza vaccination.
Influenza, live attenuated (LAIV) <sup>2,3</sup>	Severe allergic reaction (e.g., anaphylaxis) after previous dose of any <u>IIV</u> or <u>LAIV</u> or to a vaccine component, including egg protein. Conditions for which the Advisory Committee on Immunization Practices (ACIP) recommends against use, but which are not contraindications in vaccine package insert: immune suppression, certain chronic medical conditions such as asthma, diabetes, heart or kidney disease, and pregnancy. <sup>2,3</sup>	Moderate or severe acute illness with or without fever. History of GBS within 6 weeks of previous influenza vaccination. Receipt of specific antivirals (i.e., amantadine, rimantadine, zanamivir, or oseltamivir) 48 hours before vaccination. Avoid use of these antiviral drugs for 14 days after vaccination.

<b>Haemophilus influenzae Type b (Hib)</b>	<b>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component.</b>	<b>Moderate or severe acute illness with or without fever.</b>
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**For more information please contact Centers for Disease Control and Prevention**

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