

# Immunization Update for Healthcare Personnel

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DEPARTMENT OF HEALTH AND HUMAN SERVICES



# Disclosures

- The speaker is a federal government employee with no financial interest or conflict with the manufacturer of any product named in this presentation
- The speaker does not plan to discuss the off-label use of any product
- The speaker does not plan to discuss vaccines not currently licensed by the FDA



[www.cdc.gov/vaccines/pubs/ACIP-list.htm](http://www.cdc.gov/vaccines/pubs/ACIP-list.htm)

CDC  
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MORBIDITY AND MORTALITY WEEKLY REPORT

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**MMWR**<sup>TM</sup>  
Recommendations  
and  
Reports

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**Immunization of Health-Care Workers**

Recommendations of the Advisory Committee on Immunization Practices (ACIP) and the Hospital Infection Control Practices Advisory Committee (HICPAC)

Reprinted January 1998

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June 29, 2001 / Vol. 50 / No. RR-11

**MMWR**<sup>TM</sup>  
Recommendations  
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**Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis**

CDC  
DEPARTMENT OF HEALTH AND HUMAN SERVICES  
MORBIDITY AND MORTALITY WEEKLY REPORT

February 9, 2006 / Vol. 55

Early Release

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**Influenza Vaccination of Health-Care Personnel**

Recommendations of the Healthcare Infection Control Practices Advisory Committee (HICPAC) and the Advisory Committee on Immunization Practices (ACIP)



DEPARTMENT OF HEALTH AND HUMAN SERVICES



# Recommended Adult Immunization Schedule

## UNITED STATES - 2009

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**

VACCINE ▼	AGE GROUP ▶	19–26 years	27–49 years	50–59 years	60–64 years	≥65 years
Tetanus, diphtheria, pertussis (Td/Tdap) <sup>1,*</sup>		Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs				Td booster every 10 yrs
Human papillomavirus (HPV) <sup>2,*</sup>		3 doses (females)				
Varicella <sup>3,*</sup>		2 doses				
Zoster <sup>4</sup>					1 dose	
Measles, mumps, rubella (MMR) <sup>5,*</sup>		1 or 2 doses		1 dose		
Influenza <sup>6,*</sup>		1 dose annually				
Pneumococcal (polysaccharide) <sup>7,8</sup>		1 or 2 doses				1 dose
Hepatitis A <sup>9,*</sup>		2 doses				
Hepatitis B <sup>10,*</sup>		3 doses				
Meningococcal <sup>11,*</sup>		1 or more doses				

\*Covered by the Vaccine Injury Compensation Program.

 For all persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of prior infection)

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

 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, 24 hours a day, 7 days a week.

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.

**Figure 2. Vaccines that might be indicated for adults based on medical and other indications**

INDICATION ▶  VACCINE ▼	Pregnancy	Immuno-compromising conditions (excluding human immunodeficiency virus [HIV]) <sup>13</sup>	HIV infection <sup>9,12,13</sup> CD4+ T lymphocyte count		Diabetes, heart disease, chronic lung disease, chronic alcoholism	Asplenia <sup>12</sup> (including elective splenectomy and terminal complement component deficiencies)	Chronic liver disease	Kidney failure, end-stage renal disease, receipt of hemodialysis	Health-care personnel	
			<200 cells/μL	≥200 cells/μL						
Tetanus, diphtheria, pertussis (Td/Tdap) <sup>1,*</sup>	Td	Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs								
Human papillomavirus (HPV) <sup>2,*</sup>		3 doses for females through age 26 yrs								
Varicella <sup>3,*</sup>	Contraindicated		2 doses							
Zoster <sup>4</sup>	Contraindicated		1 dose							
Measles, mumps, rubella (MMR) <sup>5,*</sup>	Contraindicated		1 or 2 doses							
Influenza <sup>6,*</sup>		1 dose TIV annually								1 dose TIV or LAIV annually
Pneumococcal (polysaccharide) <sup>7,8</sup>		1 or 2 doses								
Hepatitis A <sup>9,*</sup>		2 doses								
Hepatitis B <sup>10,*</sup>		3 doses								
Meningococcal <sup>11,*</sup>		1 or more doses								

\*Covered by the Vaccine Injury Compensation Program.

 For all persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of prior infection)

 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 January 1, 2009. 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)).

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 Obstetricians and Gynecologists (ACOG), and the American College of Physicians (ACP).

# Healthcare Personnel

Need the following immunizations:

- Annual influenza
- Tdap or Td
- Hepatitis B (exposure risk)

Validate immunity status of:

- Varicella
- Measles, Mumps & Rubella (MMR)



Are **YOU** up to date?



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# Influenza Recommendations for HCP

- Annual influenza vaccination is recommended for all persons who work in any medical care facility or provide care in any setting to persons at increased risk of influenza or complications of influenza



# Influenza Vaccine for HCP

- Inactivated influenza vaccine contains only noninfectious fragments of influenza virus. It is given intramuscularly.
- Nasal spray is a live, attenuated vaccine and does not replicate systemically.
- Healthcare personnel can receive LAIV (if healthy, not pregnant, younger than 50 years of age, or care for severely immunocompromised)
- Influenza vaccines cannot cause influenza disease.
- It takes about 2 weeks for the vaccine to become fully effective



# Tdap Recommendations for HCP (younger than 65 years of age)



- For HCP who provide direct patient care, ACIP recommends 1 dose of Tdap as soon as feasible;
- Prioritize Tdap vaccine to HCP who care for patients younger than 12 months of age

# Occupational Exposure to Pertussis

- Unprotected (*i.e.*, without PPE) face-to-face exposure within 3 feet of a symptomatic patient
- Antibiotic PEP is recommended for exposed persons
- Previous vaccination with Tdap does NOT (currently) change recommendations for PEP



# Hepatitis B Recommendations for HCP



- Personnel performing tasks involving exposure to blood or blood-contaminated body fluids should receive 3 dose series
- Occupational exposure is: “...reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee’s duties.”
- Postvaccination testing for anti-HBs response is indicated for HCP 1-2 months after series completion



# Common Questions

- What if a HCP tests non-immune 1-2 months after completing the hepatitis B vaccine series
  - Complete another 3-dose series and test again in 1-2 months
  - 30%-50% will respond after three additional doses
- What if a HCP does not respond to 6 doses (2 complete series) of hepatitis B vaccine?
  - ACIP recommends no further vaccine.
  - Treat as a nonresponder (susceptible) following hepatitis B exposure.



# Varicella Immunity for HCP

- ALL HCP should have:
  - Serologic proof of immunity, OR
  - Prior vaccination with 2 doses, OR
  - ‘Verified history of varicella disease”, OR
  - History of herpes zoster (shingles)
- If not, give 2 doses of varicella vaccine, at least 4 weeks apart
- Postvaccination testing should not be done – assays not adequately sensitive





# HCP Immunity to Measles, Mumps & Rubella



- If born in or after 1957, immunity is:
  - Physician-diagnosed measles or mumps [not rubella]; OR
  - Documentation of laboratory evidence of measles, mumps and rubella immunity (equivocal result = nonimmune status); OR
  - Two doses of MMR given at least 28 days apart
- If born before 1957, unvaccinated and no laboratory evidence of immunity:
  - Consider 1 dose of MMR vaccine
  - Consider 2 doses of MMR vaccine during a mumps outbreak



# Postvaccination Testing

- Serologic testing after vaccination not recommended
  - >98% immune after 2 doses\*
  - negative titer may not indicate susceptibility
- ACIP does not recommend more than 2 doses of MMR for anyone regardless of the results of serologic testing

\*90% for mumps component



# Immunization of HCPs

## Summary

- Influenza- annual vaccination
- Tdap especially if contact with infants
- Hepatitis B- vaccination and serology
- Varicella- vaccination or serology recommended, sometimes both (for older persons with uncertain disease history)
- MMR- vaccination or serology, not both





## Immunization Action Coalition

*Publisher of immunization information*

- *Needle Tips*
- *Vaccinate Adults*
- *Vaccinate Women*
- *IAC Express*
- *Hep Express*
- *VISs*

[Home page](#)

## Immunization and Health Care Workers

[Recommendations](#)   [Resources](#)   ["Ask the Experts"](#)   [Journal articles](#)   [CDC IZ schedules](#)

### Recommendations

10/1/08	<b>Association for Professionals in Infection Control and Epidemiology (APIC) Position Paper: Influenza Immunization of Healthcare Personnel</b> PDF
8/8/08	<b>Prevention and Control of Influenza, Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2008</b> Source: MMWR, August 8, 2008; 57(RR07):1-60 <a href="http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5707a1.htm">www.cdc.gov/mmwr/preview/mmwrhtml/rr5707a1.htm</a> <a href="http://www.cdc.gov/mmwr/pdf/rr/rr5707.pdf">www.cdc.gov/mmwr/pdf/rr/rr5707.pdf</a>
7/13/07	<b>ACIP Recommendations: Prevention and Control of Influenza</b> Source: MMWR, July 13, 2007; 56(RR06):1-54 <a href="http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5606a1.htm?s_cid=rr5606a1_e">www.cdc.gov/mmwr/preview/mmwrhtml/rr5606a1.htm?s_cid=rr5606a1_e</a> <a href="http://www.cdc.gov/mmwr/PDF/rr/rr5606.pdf">www.cdc.gov/mmwr/PDF/rr/rr5606.pdf</a>
12/15/06	<b>ACIP Recommendations: Preventing tetanus, diphtheria, and pertussis among adults: use of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine</b> Source: MMWR, December 15, 2006; 55(RR-17):1-33 Please note: If you are using the HTML version of this document, be sure to access all four HTML links to get the complete content of the document, which includes 3 important appendices. <a href="http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5517a1.htm">www.cdc.gov/mmwr/preview/mmwrhtml/rr5517a1.htm</a> <a href="http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5517a2.htm">www.cdc.gov/mmwr/preview/mmwrhtml/rr5517a2.htm</a> <a href="http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5517a3.htm">www.cdc.gov/mmwr/preview/mmwrhtml/rr5517a3.htm</a>

# National Immunization Program

## Contact Information

- Telephone                      800.CDC.INFO
- Email                              [nipinfo@cdc.gov](mailto:nipinfo@cdc.gov)
- Website                          [www.cdc.gov/nip](http://www.cdc.gov/nip)
- Vaccine Safety  
   [www.cdc.gov/od/science/iso/](http://www.cdc.gov/od/science/iso/)

