

Improving Adult Immunizations and Update on Influenza Vaccination

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Outline

- ❑ **Background on burden of disease in adults**
- ❑ **Update on the adult immunization schedule**
- ❑ **National coverage for routinely recommended adult vaccines**
- ❑ **Practice standards for adult immunizations**
- ❑ **Influenza vaccine recommendations**

Objectives

- ❑ **Review 2014 adult immunization schedule and changes**
- ❑ **Overview of 2012 National Health Interview Survey data on vaccine coverage among US Adults**
- ❑ **Describe new Adult Immunization Practice Standards**
- ❑ **Provide resources for implementation of adult immunization standards**

Burden of Disease Among U.S. Adults for Diseases with Vaccines Available

- ❑ **Influenza disease burden varies year to year**
 - Millions of cases and average of 226,000 hospitalizations annually with >75% among adults
 - 3,000-49,000 deaths annually, >90% among adults²
- ❑ **Invasive pneumococcal disease (IPD)¹**
 - 39,750 total cases and 4,000 total deaths in 2010
 - 86% of IPD cases and nearly all IPD deaths among adults
- ❑ **Pertussis³**
 - 41,880 total reported cases 2012
 - ~9,000 among adults
- ❑ **Hepatitis B⁴**
 - 3,350 acute cases reported 2010
 - 35,000 estimated cases
- ❑ **Zoster⁵**
 - about 1 million cases of zoster annually U.S.

1. CDC. Active Bacterial Core Surveillance. <http://www.cdc.gov/abcs/reports-findings/survreports/spneu10.pdf>.
2. CDC. Estimates of deaths associated with seasonal influenza – United States, 1976-2007. MMWR. 2010;59(33):1057-1062.
3. CDC. Notifiable Diseases and Mortality Tables. MMWR 2013. 61(51&52): ND-719 – ND 732.
4. CDC. Viral Hepatitis Surveillance United States, 2010. National Center for HIV/AIDS, Viral Hepatitis, STD& TB Prevention/Division of Viral Hepatitis.
5. CDC. Prevention of Herpes Zoster. MMWR 2008. 57(RR-5): 1-30.

ACIP Schedule Background

- ❑ **Each year, Advisory Committee on Immunization Practices (ACIP) updates the adult immunization schedule**
 - Reflects and summarizes existing ACIP policy
- ❑ **2014 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

<http://www.cdc.gov/vaccines/schedules/hcp/adult.html>.

ACIP Adult Immunization Schedule

- ❑ **Summarizes recommendations for routinely recommended vaccines for adults based on**
 - Age group
 - Immunizations received as a child or adolescent
 - Medical conditions
 - Pregnancy
 - Occupation
 - Other factors including lifestyle

- ❑ **Information for vaccines related to travel found at:**
www.cdc.gov/travel

Changes to Adult Schedule for 2014 Figures

- ❑ **Two figures included in the Adult Immunization Schedule – must be interpreted along with footnotes**
 - Age group
 - Medical and other considerations

- ❑ **Moved pneumococcal polysaccharide vaccine (PPSV23) bar below the bar for pneumococcal conjugate vaccine (PCV13)**

- ❑ **Added bar for *Haemophilus influenzae* type b (Hib) vaccine**

<http://www.cdc.gov/vaccines/schedules/hcp/adult.html>.

Recommended Adult Immunization Schedule—United States - 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 group¹

VACCINE ▼	AGE GROUP ►	19-21 years	22-26 years	27-49 years	50-59 years	60-64 years	≥ 65 years
Influenza ^{2,*}		1 dose annually					
Tetanus, diphtheria, pertussis (Td/Tdap) ^{3,*}		Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs					
Varicella ^{4,*}		2 doses					
Human papillomavirus (HPV) Female ^{5,*}		3 doses					
Human papillomavirus (HPV) Male ^{5,*}		3 doses					
Zoster ⁶						1 dose	
Measles, mumps, rubella (MMR) ^{7,*}		1 or 2 doses					
Pneumococcal 13-valent conjugate (PCV13) ^{8,*}		1 dose					
Pneumococcal polysaccharide (PPSV23) ^{9,10}		1 or 2 doses					1 dose
Meningococcal ^{11,*}		1 or more doses					
Hepatitis A ^{12,*}		2 doses					
Hepatitis B ^{13,*}		3 doses					
<i>Haemophilus influenzae</i> type b (Hib) ^{14,*}		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 or by telephone, 800-822-7967.

Information on how to file a Vaccine Injury Compensation Program claim is available at 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 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 indications¹

VACCINE ▼	INDICATION ►	Pregnancy	Immuno-compromising conditions (excluding human immunodeficiency virus [HIV]) ^{4,6,7,8,15}	HIV infection CD4+ T lymphocyte count ^{4,6,7,8,15}		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 deficiencies) ^{8,14}	Chronic liver disease	Diabetes	Healthcare personnel
				< 200 cells/μL	≥ 200 cells/μL							
Influenza ^{2,*}			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) ^{3,*}	1 dose Tdap each pregnancy		Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs									
Varicella ^{4,*}			Contraindicated				2 doses					
Human papillomavirus (HPV) Female ^{5,*}			3 doses through age 26 yrs				3 doses through age 26 yrs					
Human papillomavirus (HPV) Male ^{5,*}			3 doses through age 26 yrs				3 doses through age 21 yrs					
Zoster ⁶			Contraindicated				1 dose					
Measles, mumps, rubella (MMR) ^{7,*}			Contraindicated				1 or 2 doses					
Pneumococcal 13-valent conjugate (PCV13) ^{8,*}							1 dose					
Pneumococcal polysaccharide (PPSV23) ^{9,10}							1 or 2 doses					
Meningococcal ^{11,*}							1 or more doses					
Hepatitis A ^{12,*}							2 doses					
Hepatitis B ^{13,*}							3 doses					
<i>Haemophilus influenzae</i> type b (Hib) ^{14,*}			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). 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.



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Updates to Footnotes

❑ Influenza vaccine

- Information on the recombinant influenza vaccine (RIV) and the use of RIV and inactivated influenza vaccine (IIV) among egg allergic patients was added
 - RIV approved by US FDA for adults 18-49 years and does not have eggs in any step of manufacturing process
- List of all influenza vaccines, their age indications, precautions and contraindications and information can be found at:

<http://www.cdc.gov/flu/professionals/acip/index.htm>.

Vaccine Type	Approved Age Group
Inactivated standard dose	6 months and older
Inactivated intradermal	18-64 years
Inactivated high dose	65 years and older
Recombinant influenza vaccine	18-49 years
Live attenuated vaccine	2-49 years, healthy

Updates to Footnotes

❑ Td/Tdap footnote updates

- Harmonizes language with pediatric schedule – no change in recommendations
 - Adults vaccinated with one dose Tdap (received any time since age 11 years) do not need another dose unless pregnant
 - **Pregnant women recommended to have one dose Tdap vaccine each pregnancy**
 - Infants <3 months most vulnerable to severe illness and death from pertussis
- Td vaccine
 - Continues to be recommended every 10 years after Tdap
 - Do not need to wait until 10 years after Td to get Tdap vaccine

<http://www.cdc.gov/vaccines/schedules/hcp/adult.html>.

Updates to Footnotes

❑ HPV – no change in recommendation

- Language harmonized with pediatric schedule regarding intervals between 1st and 2nd, 2nd and 3rd and 1st and 3rd doses
 - Second dose administered 4-8 weeks after first dose
 - Third dose administered
 - 16 weeks after second dose (minimum of at least 12 weeks) and
 - 24 weeks after the first dose
- Removed bullet on HCP and vaccination, similar to Zoster footnote
- Recommended for adolescent boys and girls, ideally at age 11 or 12 years

❑ Zoster vaccine – no change in recommendation

- Simplified by removing statement about healthcare personnel not a specific indication for vaccination

<http://www.cdc.gov/vaccines/schedules/hcp/adult.html>.

Updates to Footnotes

- ❑ **Meningococcal vaccine – no changes in recommendations**
 - Clarified which persons needed 1 versus more than one dose of **MenACWY** (meningococcal conjugate vaccine – trade names Menactra or Menveo) or **MPSV4** (meningococcal polysaccharide vaccine – trade names Menomune) and
 - Clarified that persons with HIV are not routinely recommended for MenACWY, but that 2 doses of MenACWY should be given among HIV-infected persons who are vaccinated
 - ERROR in ANNALS print version; on-line versions corrected...
 - Abbreviations for polysaccharide and conjugate vaccines.

<http://www.cdc.gov/vaccines/schedules/hcp/adult.html>.

Updates to Footnotes

□ Hib vaccine

- Updated language per recently ACIP approved updated recommendations
 - 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.
 - Adults who have had a successful hematopoietic stem cell transplant are recommended to receive a 3-dose series of Hib vaccine 6–12 months after transplant regardless of prior Hib vaccination.
 - Prior Hib vaccine guidance recommended that Hib vaccination of adults infected with human immunodeficiency (HIV) be considered, but updated guidance no longer recommends Hib vaccination of previously unvaccinated adults with HIV infection because their risk for Hib infection is low.

<http://www.cdc.gov/vaccines/schedules/hcp/adult.html>.

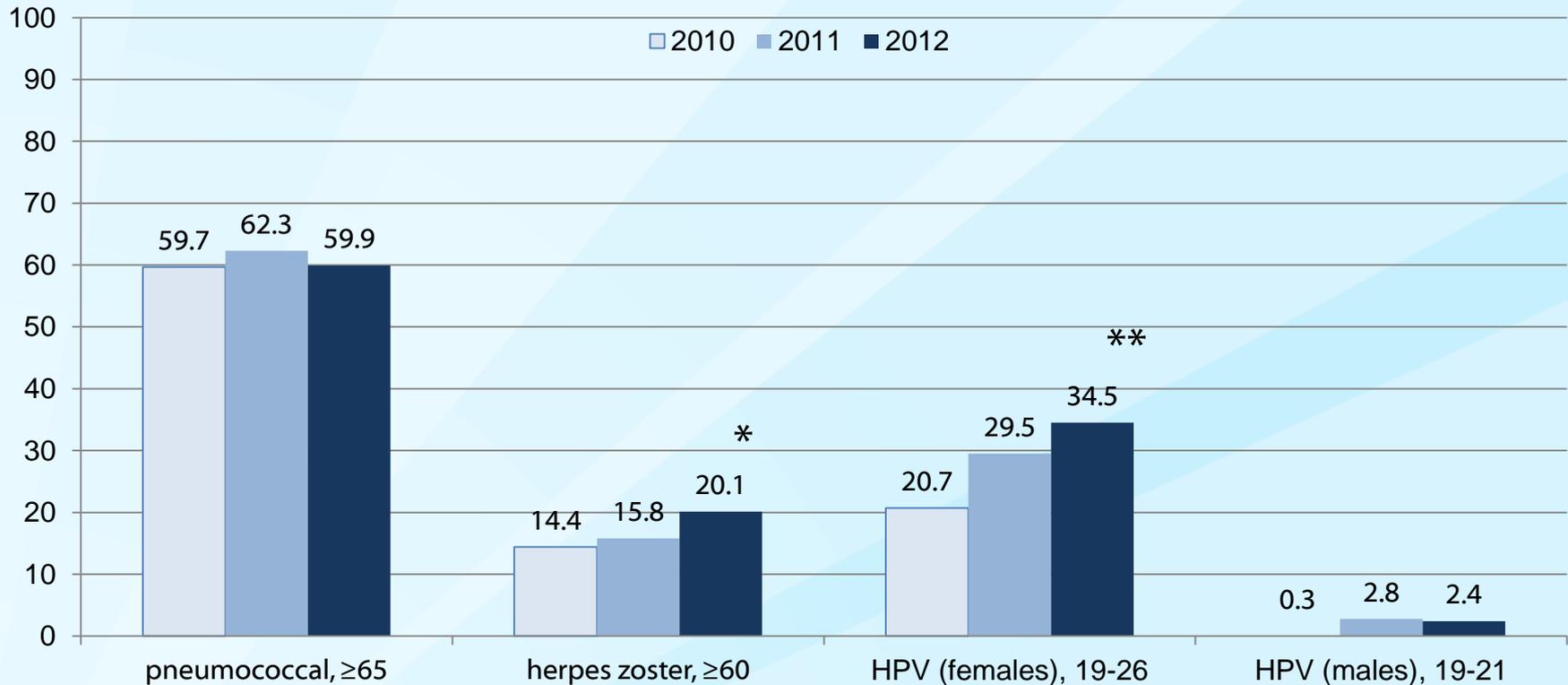
Precautions and Contraindications Table

- ❑ **Adult schedule includes table of primary precautions and contraindications**
 - See package inserts and full ACIP recommendations for additional details
- ❑ **Added recombinant influenza vaccine (RIV) information**
- ❑ **Updated information on influenza vaccine use among persons with egg allergy**
 - RIV does not include any eggs in the manufacturing process so can be given to persons with any severity of egg allergy (FDA approved for ages 18-49 years)
- ❑ **Added Hib vaccine to table**

<http://www.cdc.gov/vaccines/schedules/hcp/adult.html>.

VACCINE COVERAGE AMONG ADULTS

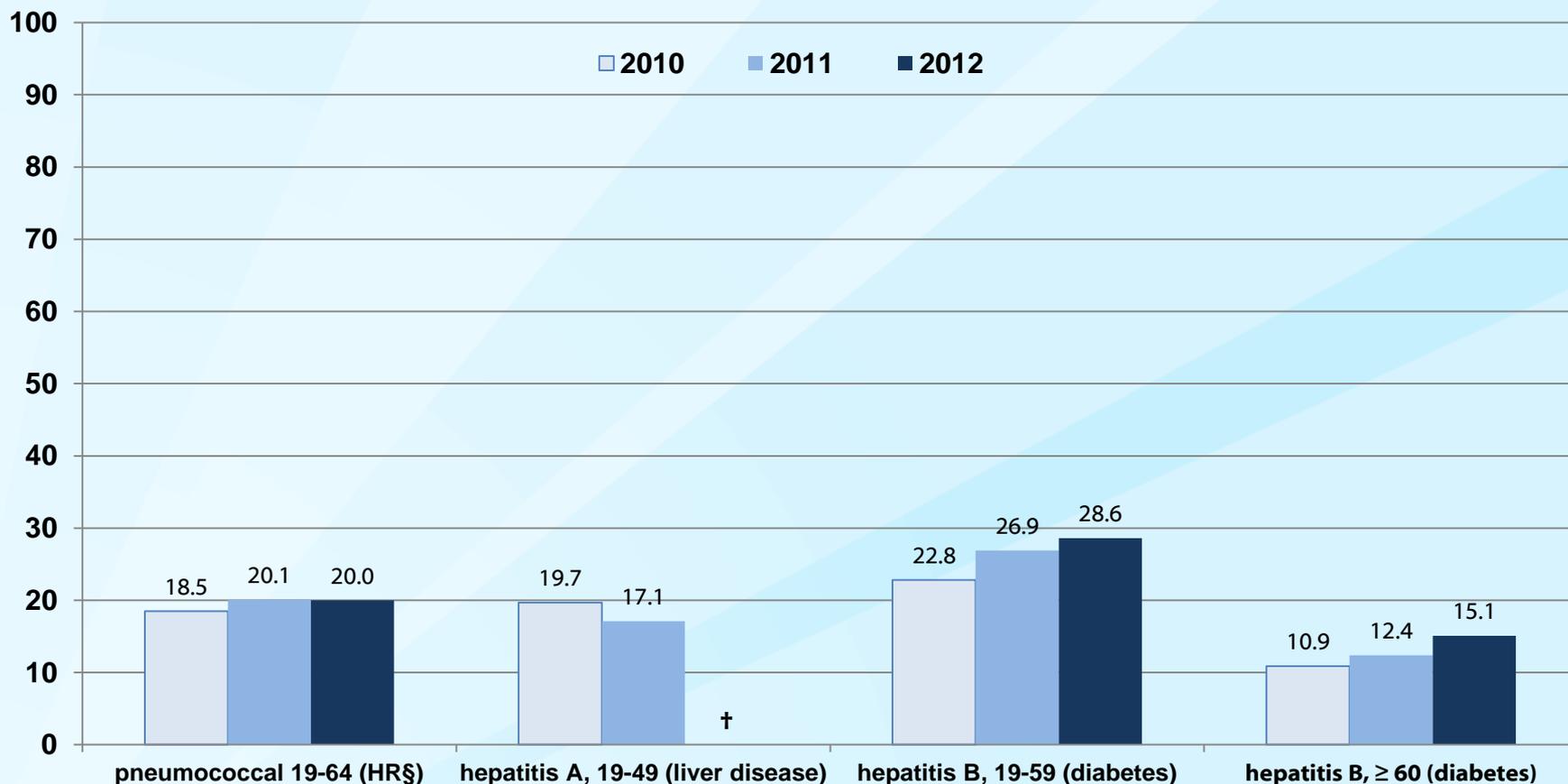
Vaccination Coverage For Age Based Vaccines, NHIS 2012 – United States



* +4.4% difference from 2011-2012, $p < 0.05$ by T test for comparisons

** +5.0% difference from 2011-2012, $p < 0.05$ by T test for comparisons

Vaccination Coverage Among High Risk Groups, NHIS 2012 – United States

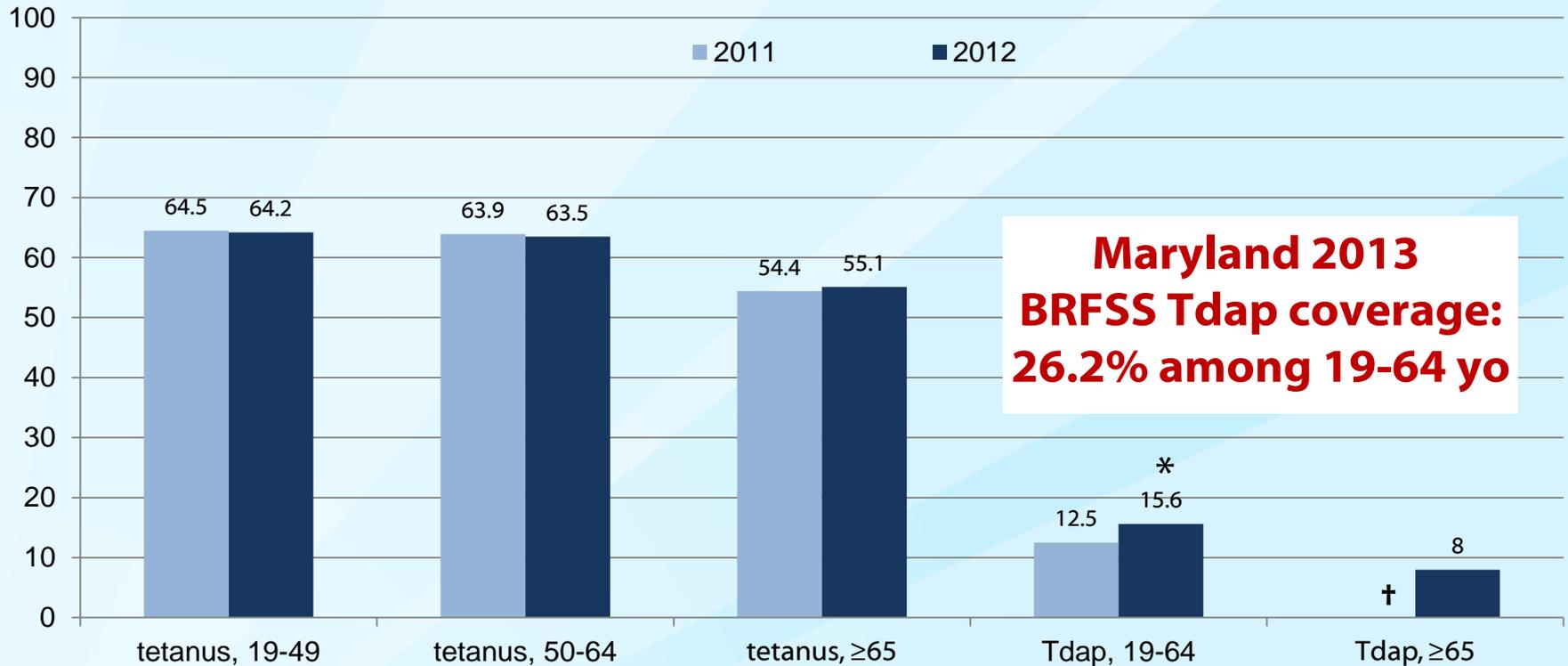


§ High Risk (HR) – Individuals] ever been told by a health professional they had diabetes, emphysema, chronic obstructive pulmonary disease, coronary heart disease, angina, heart attack, or other heart condition; had a diagnosis of cancer during the previous 12 months (excluding nonmelanoma skin cancer); had ever been told by a doctor or other health professional that they had lymphoma, leukemia, or blood cancer; had been told by a doctor or other health professional that they had chronic bronchitis or weak or failing kidneys during the preceding 12 months; had an asthma episode or attack during the preceding 12 months; or were current smokers.

† Estimate is not reliable due to relative standard error (standard error/estimates) >0.3

From 2014 MMWR at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6305a4.htm>.

Tetanus toxoid-containing vaccines coverage, NHIS 2010-2012



**Maryland 2013
BRFSS Tdap coverage:
26.2% among 19-64 yo**

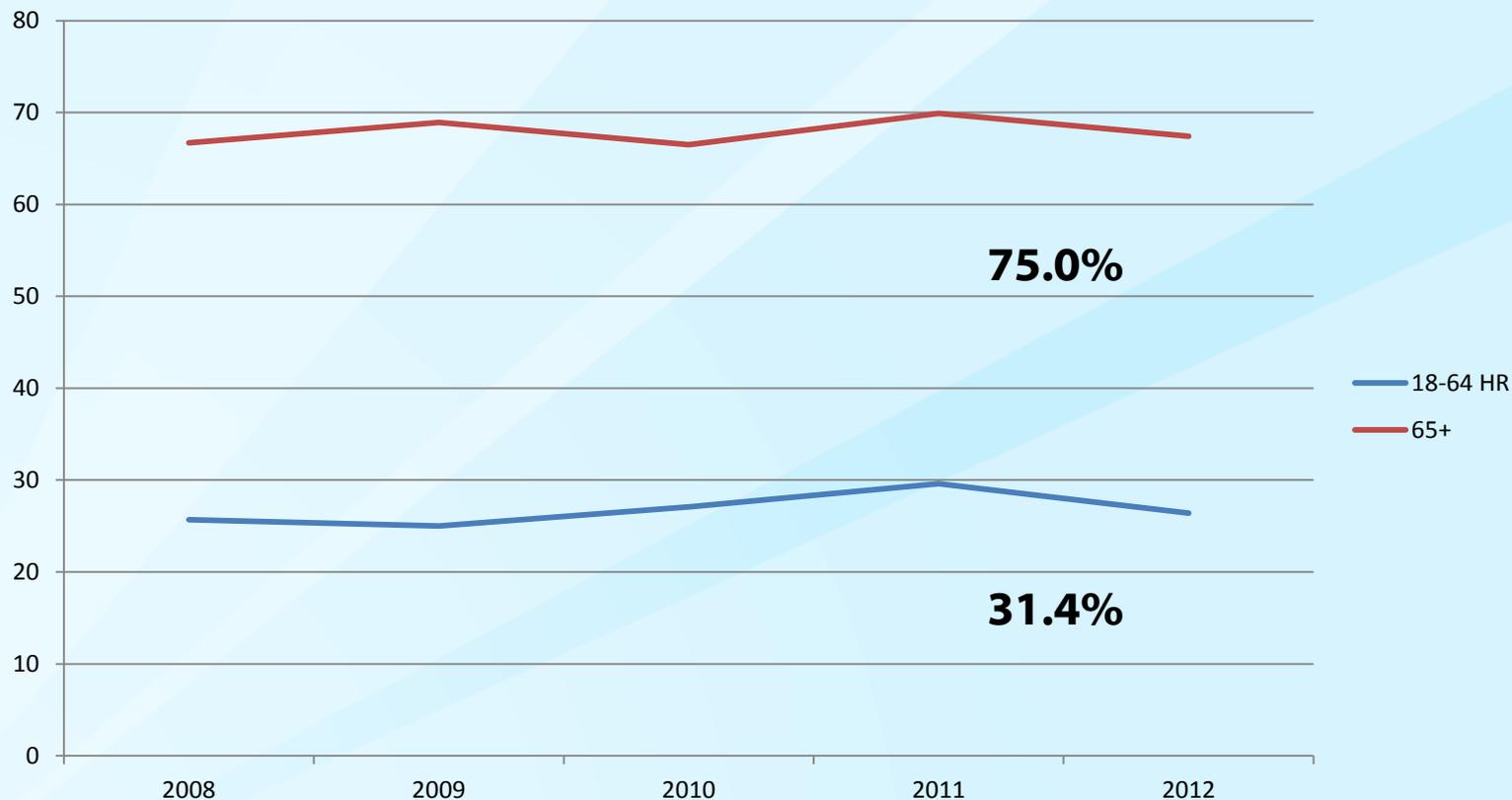
* +3.2% difference from 2011-2012, $p < 0.05$ by T test for comparisons

† Tdap vaccination of adults aged ≥ 65 years was collected in the NHIS for the first time starting in 2012

Racial/Ethnic Vaccination Disparities -- NHIS 2012

Vaccination Group	% Vaccinated Whites	Disparity, Blacks	Disparity, Hispanics	Disparity, Asians
Pneumo., HR 19-64 yrs	21	-2	-8	-8
Pneumo., ≥65 yrs	64	-18	-21	-23
Tetanus, 19-49 yrs	70	-14	-16	-15
Tetanus, 50-64 yrs	68	-15	-15	-19
Tetanus, ≥65 yrs	58	-13	-13	-12
Tdap, ≥19 yrs	16	-6	-7	-1
Tdap, 19-64 yrs	18	-8	-9	-2
Tdap, ≥65 yrs	9	-3	-6	-5
HepA, 19-49 yrs	12	-1	-2	+7
HepB, 19-49 yrs	38	-3	-10	+2
Herpes Zoster, ≥60 yrs	23	-14	-14	-6
HPV, Females 19-26 yrs	42	-13	-24	-27
Tdap, HCP ≥19 yrs	33	-11	-8	+6
HepB, HCP ≥19 yrs	66	-4	-5	+7

Pneumococcal vaccination trends among persons 18-64 years old with high risk conditions and persons 65 years old and older, 2008-2012 BRFSS

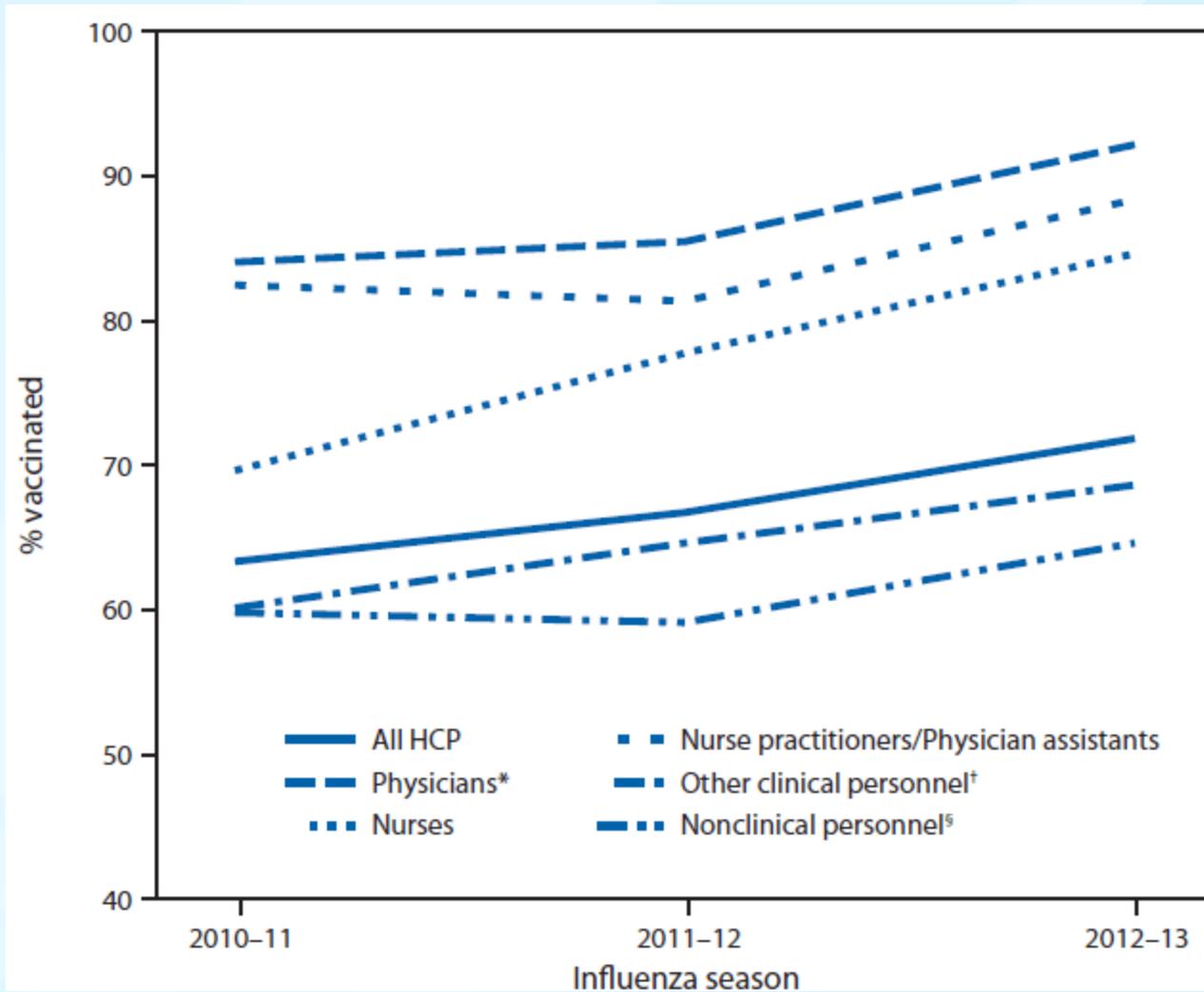


Influenza Vaccination Coverage Among US Adults: 2011-12 and 2012-13 Seasons

Group	2011-12 (%)	2012-13 (%)	Difference (%)
Persons \geq 18 yrs	38.8	41.5	+2.7
Persons 18-49 yrs, all	28.6	31.1	+2.5
Persons 18-49 yrs, high risk	36.8	39.8	+3.0
Persons 50-64 yrs	42.7	45.1	+2.4
Persons \geq 65 yrs	64.9	66.2	+1.3
Persons \geq 18 yrs – Maryland	42.4	48.9	+6.5

<http://www.cdc.gov/flu/fluview/index.htm>.

Percentage of health-care personnel (HCP) who received influenza vaccination, by occupation type — Internet panel survey, United States, 2010–11, 2011–12, and 2012–13 influenza seasons



Conclusions on Adult ACIP Schedule and Coverage

- ❑ **Relatively few changes in the 2014 adult immunization schedule compared to 2013**
- ❑ **Vaccination coverage rates among adults very low, leaving many adults vulnerable to illnesses, hospitalizations and deaths that could be prevented through vaccination**
 - Improvements in influenza vaccination coverage, including in health care personnel
- ❑ **Racial and ethnic disparities in coverage**

ADULT IMMUNIZATION PRACTICE STANDARDS

Key Adult Immunization Facts

- ❑ **Vaccine coverage among adults is unacceptably low**
- ❑ **Limited patient awareness about need for vaccines among adults**
- ❑ **Patients willing, for the most part, to get vaccinated when recommended by medical providers**
- ❑ **Adult vaccinations less integrated into clinical practice**
 - Primary care providers believe that immunizations are an important part of the services they provide to patients
- ❑ **Systemic offering and recommendations from clinicians result in higher uptake**

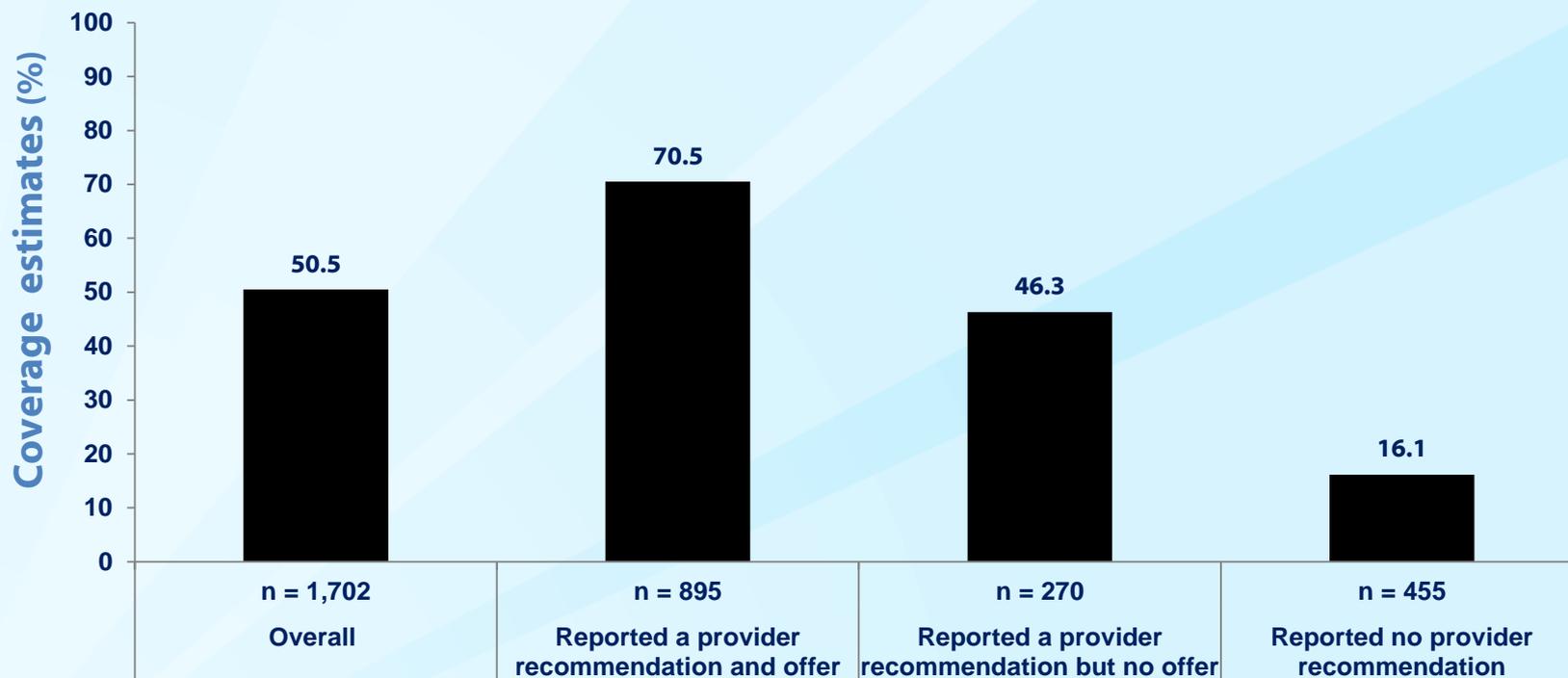
Reference: 1. Hurley, et al. Annals of Internal Medicine, 2014.

2. Guide to community preventive services: www.thecommunityguide.org/vaccines/index.html

3. Adult non-influenza vaccine coverage: www.cdc.gov/mmwr/preview/mmwrhtml/mm6305a4.htm.

Vaccination coverage by provider recommendation and/or offer

Influenza vaccination before and during pregnancy overall and by provider recommendation and offer* for influenza vaccination among women pregnant anytime between October 2012 - January 2013, Internet Panel Survey, 2012-13 Influenza Season



*Women who didn't visit a provider since August 2012 (n=27) or women who didn't know whether they received provider recommendation or offer (n=55) were excluded from this analysis.

NEW Adult Immunization Practice Standards

- ❑ **Stress that all providers, including those that don't provide vaccine services, have a role in ensuring patients up to date on vaccines**

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

- ❑ **Aim is to avoid missed opportunities**

Adult Immunization Practice Standards

- ❑ **Calls to action for healthcare 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 received by patients, including entering immunizations into immunization registries.

<http://www.publichealthreports.org>

Framework

Adult Immunization Practice Standards

All Providers

- Incorporate IZ needs assessment into every clinical encounter.
- Recommend, administer needed vaccine or refer to a provider who can immunize.
- Stay up-to-date on immunization recommendations and educate patients.
- Ensure providers and their staff are up to date on their own vaccines
- Understand how to access registries.

Non-immunizing Providers

- Routinely assess immunization status of patients, recommend needed vaccines and refer patient to an immunizing provider.
- Establish referral relationships with immunizing providers.
- Follow up to confirm patient receipt of recommended vaccine(s).

Immunization Providers

- Observe and adhere to professional competencies regarding immunizations.
- Assess immunization status in every patient care and counseling encounter and strongly recommend needed vaccines.
- Ensure receipt of vaccination is documented.

Framework

Adult Immunization Practice Standards

Professional healthcare
related organizations /
associations/healthcare
systems

- Education and training of members, including trainees
- Resources and assistance to implement protocols, immunization practices, immunization assessment, etc
- Encourage members to be up-to-date on own immunizations
- Assist members in staying up-to-date on IZ info & recommendations
- Partner with other immunization stakeholders to educate the public
- Seek out collaboration opportunities with other immunization stakeholders
- Collect and share best practices
- Advocate policies that support adult immunization standards

Public Health
Departments

- Determine community needs and capacity and community barriers to adult IZ
- Support activities and policies to increase vaccination rates and reduce barriers
- Ensure professional competency
- Collect, analyze and disseminate data
- Outreach and education to public and providers
- Work to decrease disparities
- Increase registry access and use
- Develop billing capacities
- Ensure preparedness, communicate vaccine information to providers and to the public
- Promote adherence to laws and regulations pertaining to immunizations

Adult Immunization Practice Standards

- ❑ Formally supported by Summit Organizing Committee Members
 - American Academy of Pediatrics (AAP)
 - American Academy of Physician Assistants (AAPA)
 - American Academy of Family Physicians (AAFP)
 - American College of Obstetricians and Gynecologists (ACOG)
 - American College of Physicians (ACP)
 - American Pharmacists Association (APhA)
 - Association of Immunization Managers (AIM)
 - Association of State & Territorial Health Officials (ASTHO)
 - Centers for Disease Control and Prevention (CDC)
 - Immunization Action Coalition (IAC)
 - Infectious Diseases Society of America (IDSA)
 - National Association of County & City Health Officials (NACCHO)
 - National Foundation for Infectious Diseases (NFID)

Example of Results with Implementation of Standards - Indian Health Service

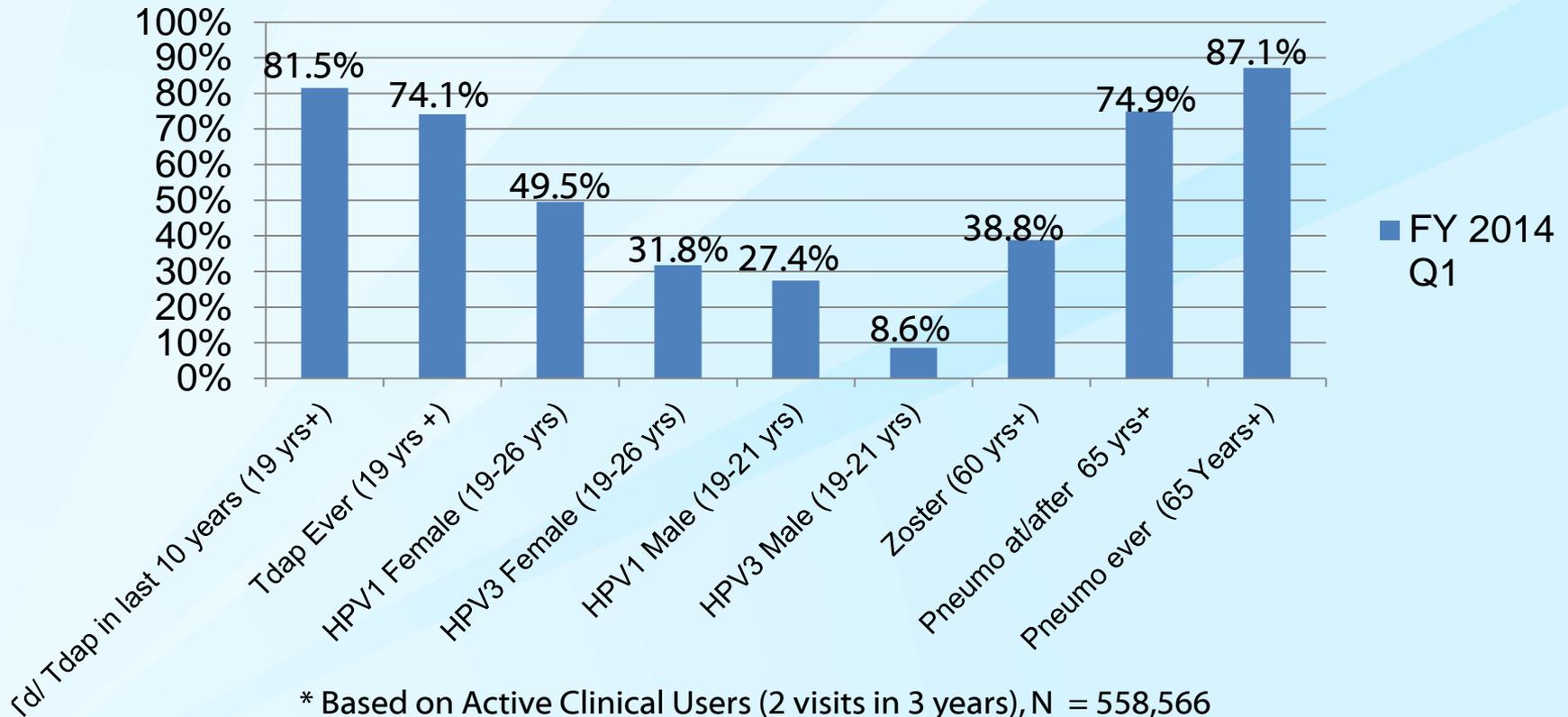
- I.H.S. is federal agency charged with providing healthcare to eligible American Indian/Alaska Native people
 - member of one of the 566 federally recognized tribes
 - residence in the IHS catchment Area
- I.H.S. provides services to approximately 2 million patients each year through a network of I.H.S., Tribal, and Urban Indian health care facilities in 35 states

Indian Health Service - Leveraging Technology

- Use of EHR and provider reminder prompts focusing on the following adult vaccinations:
 - Influenza for all ages
 - PPSV23 for 65 years+
 - PPSV23 for adults with high risk conditions
 - Tdap for everyone 19 yrs+
 - Td every 10 years
 - HPV
 - Females 19 – 26 years
 - Males 19 – 21 years
 - Zoster for 60 yrs +
 - Hepatitis A and B for patients who receive first dose

Indian Health Service - Leveraging Technology

IHS Adult Vaccination Coverage* FY 2014 Q1 Reports



Resources For Implementing New Standards

- ❑ **CDC**

www.cdc.gov/vaccines/adultstandards

- ❑ **National Adult and Influenza Immunization Summit and Immunization Action Coalition (IAC)**

www.izsummitpartners.org

- ❑ **National Foundation for Infectious Diseases -**

www.adultvaccination.org

- ❑ **American College of Obstetricians and Gynecologists -**

www.immunizationforwomen.org

Media and Outreach Products



"I got vaccinated because I can't risk getting sick."

Learn More



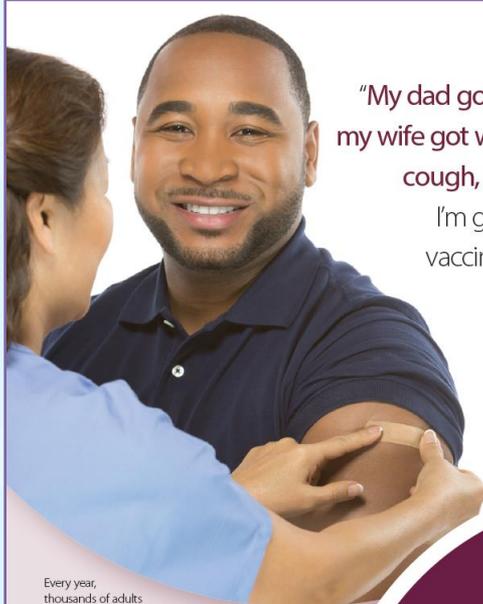
DON'T WAIT. VACCINATE!

"I want to protect my health, so I'm getting the vaccines I need."



DON'T WAIT. VACCINATE!

Learn More



"My dad got shingles, my wife got whooping cough, that's why I'm getting the vaccines I need."

Every year, thousands of adults in America suffer serious health problems from diseases they could be vaccinated against like shingles, whooping cough, hepatitis A and B, flu, and pneumococcal disease. Some even die.

Talk with your healthcare professional about which vaccines are recommended to protect you and your loved ones.

Learn more at cdc.gov/vaccines/adults or call 1-800-CDC-INFO (1-800-232-4636).



DON'T WAIT. VACCINATE!

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

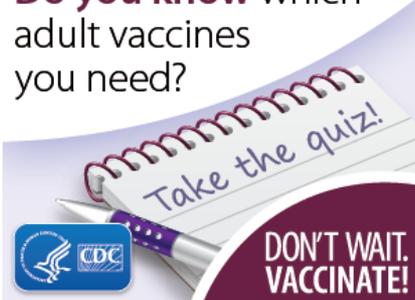
"I do a lot to stay healthy, including getting vaccinated."



DON'T WAIT. VACCINATE!

Learn More

Do you know which adult vaccines you need?



DON'T WAIT. VACCINATE!

Patient Education Materials



INFORMATION SERIES FOR ADULTS

3 Important Reasons for Adults to Get Vaccinated

You may not realize that as an adult you still need vaccines, or why they are so important to your health. There are many reasons to get vaccinated, here are just three.

1 You may be at risk for serious diseases.

Each year thousands of adults in the United States suffer serious health problems from disease that could be prevented by vaccines. Some people are hospitalized, and some even die. Even if you were fully vaccinated as a child, the protection from some vaccines you received can wear off over time, and you may also be at risk for other diseases due to your job, hot

What vaccines do you need?

- All adults should get:
 - Annual flu vaccine to protect

2 You can protect around you

Vaccines reduce changes of get complications.

Vaccines reduce There are many illnesses in not weakened (im treatment) are

3 You can't afford

Even healthy people most importantly it is your best protection steps to stay healthy

Getting vaccinated

- Adults can get a community health provider near you
- Most health insurance Check with your provider.
- If you do not have to learn more about

Vaccines are safe.

- Vaccines are tested and monitored. Vaccines are tested before being licensed by the Food and Drug Administration (FDA). Both the CDC and FDA continue to monitor vaccines after they are licensed.
- Vaccine side effects are usually mild and temporary. The most common side effects include soreness, redness, or swelling at the injection site. Severe side effects are very rare.
- Vaccines are one of the safest ways to protect your health. Even people taking prescription medications can be vaccinated. However, if you are pregnant or have a weakened immune system talk with your doctor before being vaccinated, as some vaccines may not be recommended for you.

Some diseases that can be prevented by vaccines

Disease and the vaccines that help prevent them	How it can affect you
Influenza "Flu" Annual flu vaccine	Sudden high fever, chills, dry cough, headache, runny nose, sore throat, muscle and joint pain, and extreme fatigue that can last from days to weeks. Complications: Pneumonia (infection in the lungs)
Hepatitis A Hep A vaccine	Fever, tiredness, stomach pain, loss of appetite, vomiting, jaundice (yellowing of skin and eyes), and dark urine; however, there may be no symptoms. Complications: Liver failure, arthritis (joint pain); and kidney, pancreatic, and blood disorders
Hepatitis B Hep B vaccine	Flu-like illness with loss of appetite, fever, tiredness, weakness, nausea, vomiting, jaundice, and joint pain; however, there may be no symptoms. Complications: Chronic liver infection, liver failure, and liver cancer
Human Papillomavirus (HPV) HPV vaccine	Frequently no symptoms for years until cancer appears. Complications: Cervical cancer in women, anal cancer and genital warts in both women and men
Meningococcal Disease Meningococcal conjugate vaccine	Nausea, vomiting, sensitivity to light, confusion, and tiredness. Complications: Meningitis (infection of the covering around the brain and spinal cord), intellectual disability, epiglottitis (life-threatening infection that can block the windpipe and lead to serious breathing problems), pneumonia, loss of arms or legs, loss of hearing, seizures, strokes, or even death
Pneumococcal Disease Pneumococcal vaccine	Pneumonia, ear infections, sinus infections, meningitis, and sepsis (blood infection). Complications: Brain damage, loss of hearing, loss of arms or legs, or even death
Shingles Zoster vaccine	Painful rash on one side of the face or body, which blisters and then typically scabs over in 7-10 days and clears up within 2-4 weeks, headache, fever, chills, and upset stomach. Complications: Prolonged pain, encephalitis (brain swelling), pneumonia, loss of eye sight and hearing, or even death
Tetanus Td/Tdap vaccine	Serious, painful spasms and stiffness of all muscles, difficulty opening mouth, swallowing, or breathing, muscle spasms, and fever. Complications: Broken bones, breathing difficulty, or even death
Whooping Cough (Pertussis) Tdap vaccine	Prolonged cold symptoms (cough and runny nose), leading to violent coughing or choking, making it hard to breathe, drink, or eat. Complications: Pneumonia, or death

For a full list of all diseases that can be prevented by vaccines visit: www.cdc.gov/vaccines/adult-wac

Learn more about vaccines for adults at www.cdc.gov/vaccines/adult-wac or 1-800-CDC-INFO (800-232-4636).



INFORMATION SERIES FOR ADULTS

Vaccines: Know What You Need

All adults should get vaccines to protect their health and the health of those they care about. Talk to your healthcare professional about the vaccines that are right for you.

To get the conversation started, here's a list of some of the vaccines you might need.

Every adult needs:

Influenza (flu)

Who? All adults 18 and older
How often? Every year
Especially important health conditions, chronic conditions, and those who live with someone who has a chronic condition.

Tetanus, diphtheria (whooping cough)

Who? All adults 18 and older
How often? Every 10 years
Especially important health conditions, chronic conditions, and those who live with someone who has a chronic condition.

Your health, lifestyle, and there are others

See the chart

*Live vaccines contain a virus that causes a disease in people. They are given to people who have a CD4 count less than 200.

You may also need depending on your age:

You may need additional vaccines, depending on your existing health conditions, lifestyle, job, and travel. Talk to your healthcare professional about these vaccines:

	Pneumococcal polysaccharide	Both types of pneumococcal	Hepatitis A Series	Hepatitis B Series	Meningococcal	HB	HPV	MMR	Varicella
Heart disease or chronic lung disease	●								
Type 1 or type 2 diabetes	●			●					
Weakened immune system or HIV	●			●			●		
Chronic liver disease	●		●	●					
No spleen or spleen does not work well		●			●	●			
Men who have sex with men			●	●			●		
Healthcare workers				●				●	●
College Freshman living in residence halls					●				
Laboratory workers routinely exposed to isolates of <i>Mycobacterium meningitidis</i> or specimens containing hepatitis A or hepatitis B virus			●	●	●				
Planning to travel outside the United States	Go to www.cdc.gov/travel to get vaccine recommendations for your travel destination.								

Your Vaccines, Personalized

Get a list of vaccines you might need customized for you. Go to www.cdc.gov/vaccines/adultquiz and answer a few quick questions about you and your life. You'll receive a list of vaccine recommendations that you can print and take to your doctor or other healthcare professional.

Learn more about vaccines for adults at www.cdc.gov/vaccines/adult-wac or call 1-800-CDC-INFO (800-232-4636).

Health Care Provider Resources

5

Standards for Adult Immunization Practice:

Vaccine Administration



Even if you don't play a critical role to play diseases that could

Routinely assess you provide referrals for

Each year, thousands suffer illness, are that could be prevented

Adults believe immunization need vaccines through hepatitis, and shingles.

Patients rely on them the best advice

If patients' healthcare providers are unlikely to give

Refer your patient vaccines you don't

It may not be possible to ensure that your patient your strong recommendation immunization providers, who offer vaccination services

Confirm that patients by following up

Document the vaccines not, to make sure patient practice and your patient

INFORMATION SERIES FOR HEALTHCARE PROFESSIONALS
www.cdc.gov/vaccines/adultstandards

4

Standards for Adult Immunization Practice:

Vaccine Assessment



There are a number of administration in your from vaccine-preventable

1. Recommend and offer
Research shows when patients and are offered the vaccine get vaccinated.

2. Train and educate your staff
Building your staff's skills help improve vaccine delivery

3. Properly store and handle
This critical step can reduce

4. Distribute Vaccine Information
Help your patients make providing them with up-to-date potential risks for each vaccine

5. Ensure proper care for
Minimize potential risk to protocols such as having administer vaccines.

6. Follow standard prevention
Minimize the risks of spread

7. Be aware of and prevent
All vaccines have the potential for minor (e.g., itching, soreness) while rare, can occur. Mal handle severe reactions.

For more information on adult immunization
www.cdc.gov/vaccines

INFORMATION SERIES FOR HEALTHCARE PROFESSIONALS
www.cdc.gov/vaccines/adultstandards

3

Standards for Adult Immunization Practice:

Standardized Assessment

2

Standards for Adult Immunization Practice:

Vaccine Needs Assessment

Assessment is the critical first step in ensuring that your patients get the vaccines they need for protection against serious vaccine-preventable diseases.

As a standard of care—whether you provide vaccines or not—you should assess your patients' immunization status at every clinical encounter.

Adult immunization rates are unacceptably low.¹

For example, rates for Tdap and zoster vaccination are 20% or less for adults who are recommended to get them. Even high-risk groups are not getting vaccines they need—only 20% of adults younger than 65 years at high risk for complications from pneumococcal disease are vaccinated.

The best way to ensure that your patients are fully vaccinated is to routinely assess their immunization status.

Your patients' vaccination needs will change over time based on factors such as age, health conditions, lifestyle, travel, and occupation. Adults think immunization is important, but most are not aware that they need immunizations other than the influenza vaccine. They rely on you to tell them which vaccines are recommended for them.

Assessing your patients' vaccination status at every clinical encounter will decrease missed opportunities to vaccinate.^{2,3,4}

Many adults report they do not receive vaccine recommendations from their healthcare professionals, and studies indicate that vaccine assessments are a routine in most provider offices. Every year, thousands of adults in the United States suffer illness, are hospitalized, and even die from diseases that could be prevented by vaccines.

Assessment at every encounter will make a difference.⁵

Research indicates that your recommendation is the strongest predictor

For more information on insurance coverage of vaccines for adults, visit www.cdc.gov/vaccines/hcp/adults.

INFORMATION SERIES FOR HEALTHCARE PROFESSIONALS
www.cdc.gov/vaccines/adultstandards

INFORMATION SERIES FOR HEALTHCARE PROFESSIONALS
www.cdc.gov/vaccines/adultstandards

*National Health Interview Survey

INFORMATION SERIES FOR HEALTHCARE PROFESSIONALS
www.cdc.gov/vaccines/adultstandards

SHARE
SHARE the information for the patient occupation
HIGHLIGHT personal or occupational strength
ADDRESS the patient's needs in plain language
REMINDE patients about getting vaccinated
EXPLAIN the serious health consequences for the family

If the patient is not vaccinated

- Emphasize the benefits
- Provide education
- Send reminders and incentives
- Document conversation

1

Standards for Adult Immunization Practice:

What All Healthcare Professionals Need To Know



In 2013, the National Vaccine Advisory Committee updated the Standards for Adult Immunization Practice to reflect the critical need for ALL healthcare professionals—whether they provide immunization services or not—to take steps to ensure that adult patients get the vaccines they need.

Patients trust you to give them the best advice on how to protect their health.

Make adult vaccination a standard of care in your practice. Assess at every encounter, recommend needed vaccines, then administer or refer, and document any vaccines a patient receives.

Why should adult immunization be a priority for your practice?

1. Your patients are probably not getting the vaccines they need. Even though most private insurance plans cover the cost of recommended vaccines, adult vaccination rates in the U.S. are unacceptably low. Each year, tens of thousands of adults needlessly suffer, are hospitalized, and even die as a result of diseases that could be prevented by vaccines.
2. Your patients are likely not aware that they need vaccines. Although adults do believe immunization is important, a recent national survey showed that most adults are not aware that they need vaccines throughout their lives to protect against diseases like shingles, pertussis, and hepatitis. Many also report not receiving vaccine recommendations from their healthcare professional.
3. You play a critical role in ensuring that your patients are fully immunized. Healthcare professionals are the most valued and trusted source of health information for adults. Your patients rely on you to inform them about the vaccines they need. Research shows that a recommendation from their healthcare professional is the top predictor of patients getting vaccinated.

2012 U.S. Adult Vaccination Rates

Only 14% of adults aged 19 and older received Tdap vaccination. Over 48,000 cases of pertussis were reported in 2012—and many more cases may have gone unreported. About five in 100 adults with pertussis are hospitalized and others may have complications, which could include pneumonia or death. Infants are at most risk for severe illness and death from pertussis, making it critical for pregnant women and other adults in contact with infants to get vaccinated.

Only 20% of adults aged 60 and older received zoster vaccination. Nearly 1 million Americans experience the condition each year, and about half of all cases occur in men and women age 60 years or older. Older adults are also most likely to experience severe pain from the disease and have postherpetic neuralgia.

Only 20% of adults aged 19-64 years at high risk received pneumococcal vaccination. While coverage among adults aged 65 or older is better, there are still many adults left unprotected. Approximately 344,000 adults are hospitalized due to pneumococcal pneumonia each year. About 3,200 adults die from invasive pneumococcal disease.

Source: National Health Interview Survey, 2012

DON'T WAIT. VACCINATE!



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

INFORMATION SERIES FOR HEALTHCARE PROFESSIONALS
www.cdc.gov/vaccines/adultstandards

Coming soon to... www.cdc.gov/vaccines/AdultStandards

Conclusions

- ❑ **Relatively few changes to the 2014 adult immunization schedule relative to 2013**
- ❑ **Coverage rates among adults very low, leaving many adults vulnerable to illnesses, hospitalizations and deaths that could be prevented through vaccination**
- ❑ **Adult Immunization Practice Standards updated**
 - Implementation key to increasing awareness of adult immunization and improving vaccine coverage
 - Many tools and resources available to
 - Help providers with implementation of immunization practice standards
 - Educate patients on the importance of vaccination

INFLUENZA VACCINE RECOMMENDATIONS UPDATE

Background

- ❑ **Annual impact of influenza affects all age groups, but severity can vary substantially from year to year**
 - Millions of illnesses among persons of all ages
 - 55,000 - 431,000 influenza-related hospitalizations
 - 3,000-49,000 influenza-related deaths
- ❑ **Vaccination is best way to prevent influenza and its complications, e.g.**
 - Hospitalization of children and decreased risk of ICU admission
 - Prevention of secondary major cardiac events
- ❑ **Although public awareness of influenza vaccination is high, less than half of people get a influenza vaccine**
- ❑ **No changes in overall recommendations – annual influenza vaccination for everyone \geq 6 months old, including pregnant women**

Influenza vaccines approved for use in the U.S., 2013–14

	Trade name	Age indications	Route
Inactivated influenza vaccine, trivalent (IIV3), standard dose	Afluria	≥9 yrs.	IM
	Fluarix	≥3yrs	IM
	Flucelvax	≥18 yrs.	IM
	FluLaval	≥3 yrs.	IM
	Fluvirin	≥4 yrs.	IM
	Fluzone	6 mos-64 yrs.	IM
	Fluzone Intradermal	18–64 yrs.	Intradermal
Inactivated influenza vaccine, trivalent (IIV3), high dose	Fluzone High-Dose	≥65 yrs.	IM
Inactivated influenza vaccine, quadrivalent (IIV4), standard dose	Fluarix Quadrivalent	≥3 yrs.	IM
	Flulaval Quadrivalent	≥3 yrs.	IM
	Fluzone Quadrivalent	6-36 mos	IM
Recombinant influenza vaccine, trivalent (RIV3)	FluBlok	18–49 yrs.	IM
Live attenuated influenza vaccine, quadrivalent (LAIV4)	FluMist Quadrivalent	2–49 yrs.	Intranasal

Recently-approved Influenza Vaccines

Quadrivalent influenza vaccine, live attenuated (LAIV4):

- Flumist[®] Quadrivalent (MedImmune)

Quadrivalent influenza vaccines, inactivated (IIV4):

- Fluarix[®] Quadrivalent (GSK)
- Fluzone[®] Quadrivalent (Sanofi Pasteur)

Cell culture-based influenza vaccine (ccIIV3):

- Flucelvax[®] (Novartis)

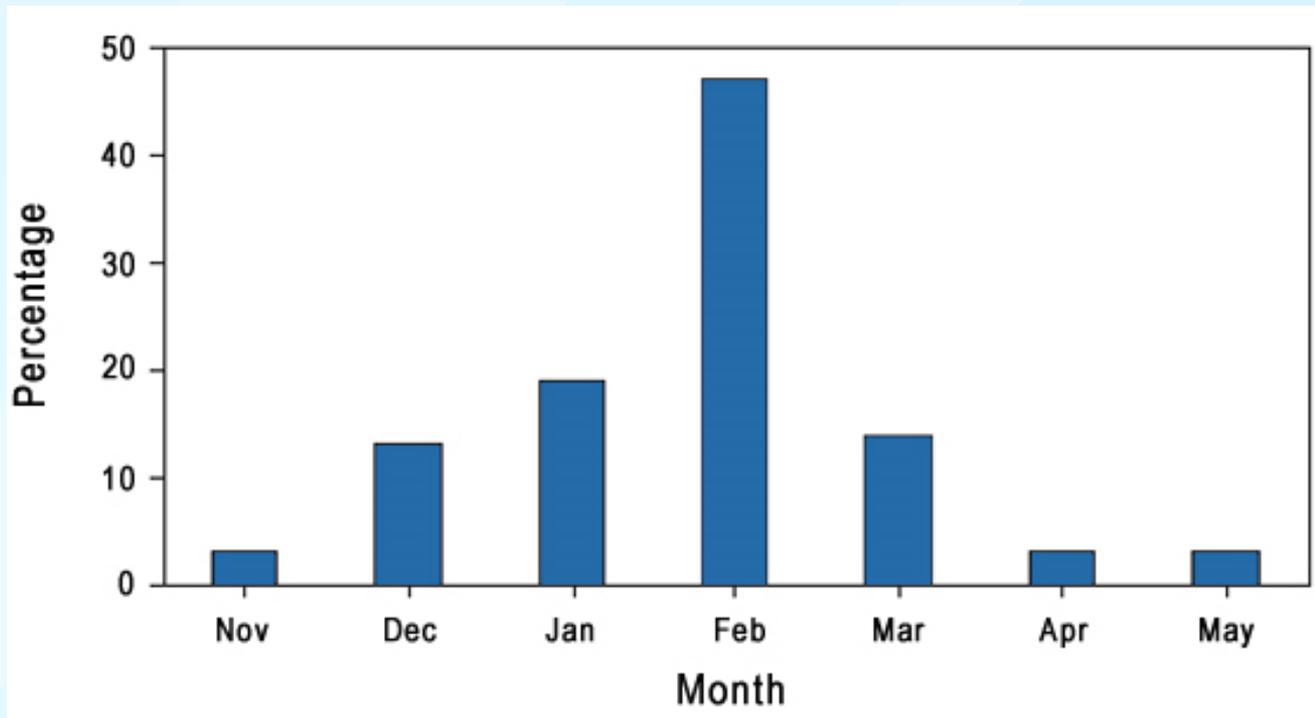
Recombinant hemagglutinin (HA) vaccine (RIV3):

- FluBlok[®] (Protein Sciences)

Quadrivalent Influenza Vaccines—Rationale

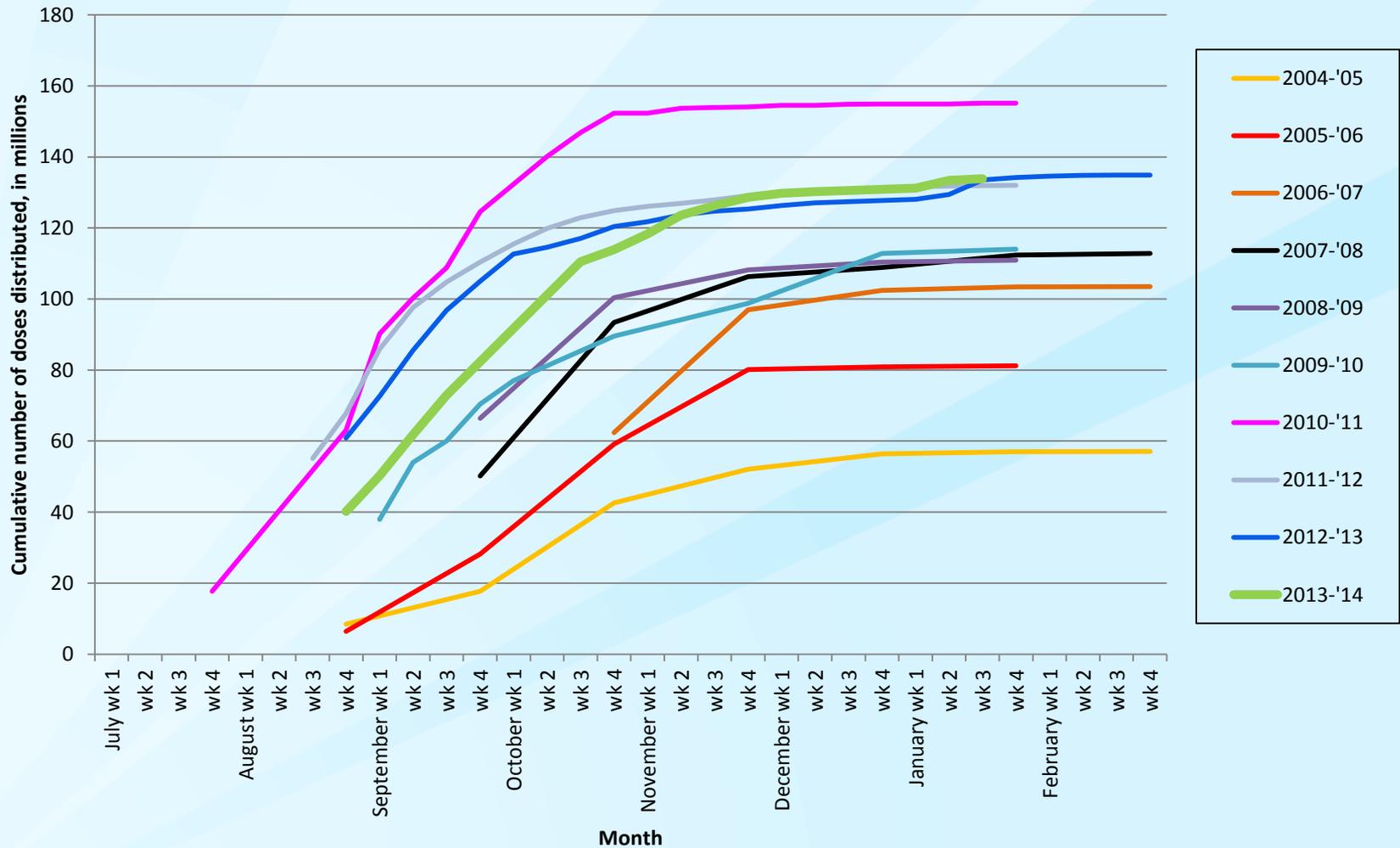
- **Two lineages of influenza B viruses: Victoria and Yamagata**
 - Immunization against virus from one lineage provides only limited cross-protection against viruses in the other
- **Trivalent vaccines contain only one B vaccine virus**
 - Only one B lineage is represented
- **Predominant lineage is difficult to predict in advance of the season**
- **Quadrivalent vaccines contain one virus from each B lineage**

Month of Peak Influenza Activity, United States, 1976-2008



From Prevention & Control of Influenza – Recommendations of the Advisory Committee on Immunization Practices (ACIP) 2008. MMWR 2008 Aug 8; 57(RR07);1-60.

Cumulative Doses of Influenza Vaccines Distributed by Month, By Season, 2004-05 Through 2013-14 Seasons



Influenza Vaccine Virus Strains for 2014-15

- ❑ **Both trivalent and quadravalent vaccines will be available**

- ❑ **Trivalent vaccines will contain:**
 - An A/California/7/2009 (H1N1)-like virus,
 - An H3N2 virus antigenically like the cell-propagated prototype virus A/Victoria/361/2011, and
 - A B/Massachusetts/2/2012-like virus (Yamagata lineage).

- ❑ **Quadrivalent vaccines, will contain, in addition:**
 - A B/Brisbane/60/2008-like virus (Victoria lineage)

Can the individual eat lightly cooked egg (e.g., scrambled egg) without reaction? *†

Yes

Administer vaccine per usual protocol

No

After eating eggs or egg-containing foods, does the individual experience ONLY hives?

Yes

Administer RIV3, if patient aged 18 through 49 yrs.;

OR

Administer IIV

Observe for reaction for at least 30 minutes following vaccination

No

After eating eggs or egg-containing foods, does the individual experience other symptoms such as:

- Cardiovascular changes (e.g., hypotension)
- Respiratory distress (e.g., wheezing)
- Gastrointestinal (e.g., nausea/vomiting)
- Reaction requiring epinephrine
- Reaction requiring emergency medical attention

Yes

Administer RIV3, if patient aged 18 through 49 yrs.;

OR

Refer to a physician with expertise in management of allergic conditions for further evaluation

Influenza Vaccination for Persons with Egg Allergies

Influenza Vaccination for Persons with Egg Allergies

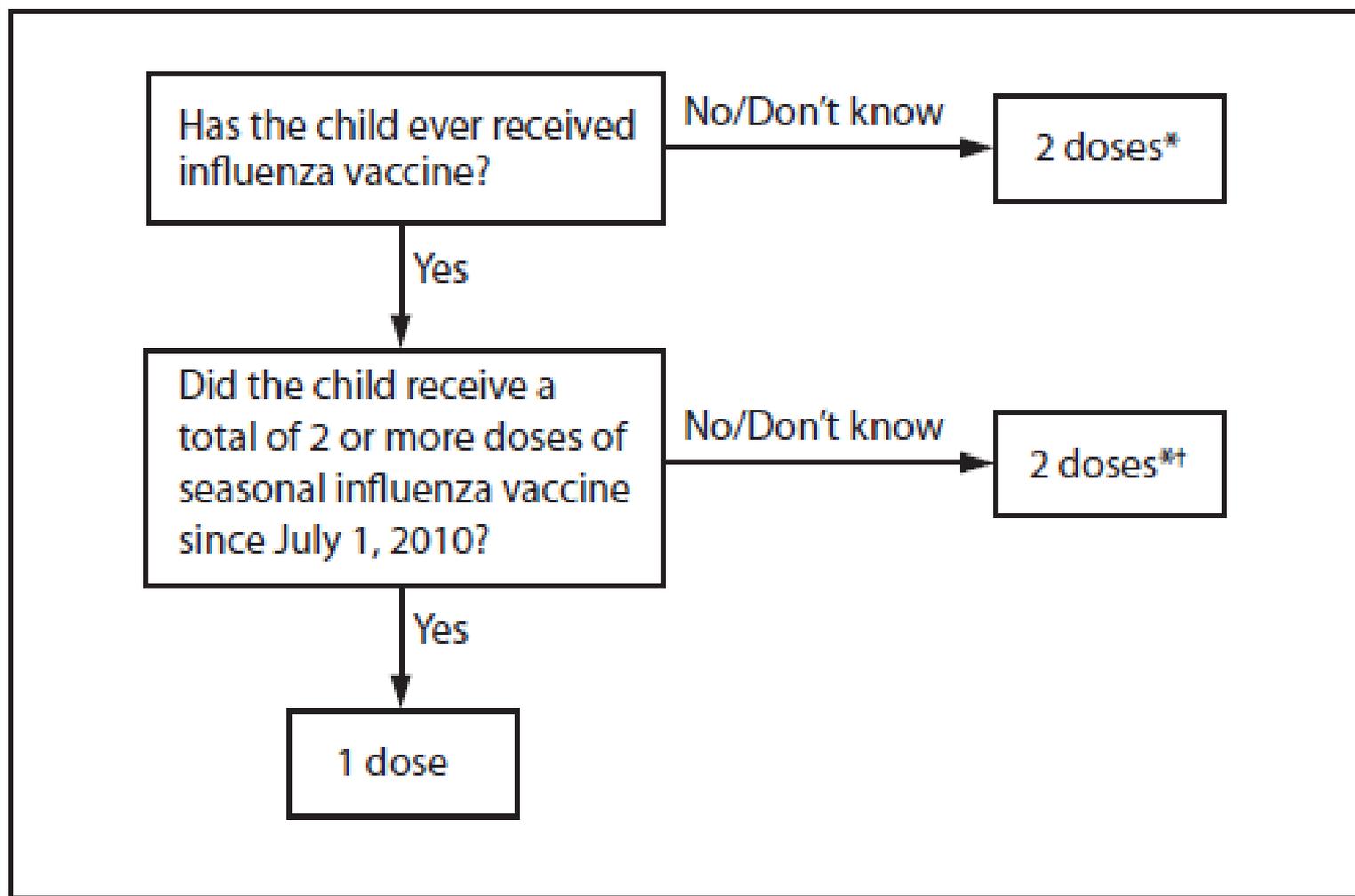
- ❑ For individuals with no known history of exposure to egg, but who are suspected of being egg-allergic on the basis of previously performed allergy testing:
 - Consultation with a physician with expertise in the management of allergic conditions should be obtained prior to vaccination
 - Alternatively, RIV3 may be administered if the recipient is aged 18 through 49 years

One Dose or Two?

Vaccine for Children 6 Months Through 8 Years

- ❑ **Children aged 6 months through 8 years require 2 doses in first season they are vaccinated**
- ❑ **If previously vaccinated, need to have received 2009(H1N1)-containing vaccine (2009 monovalent, or 2010-14 seasonal vaccines)**
- ❑ **There are two acceptable approaches for determining the number of doses**
- ❑ **These differ in whether or not vaccination history prior to the 2010-2011 season is considered**

Dose algorithm for 6 months through 8 years olds



* Doses should be administered a minimum of 4 weeks apart.

Dose algorithm for 6 months through 8 year olds— Alternative approach

- ❑ **If vaccination history before 2010–11 is available**

- ❑ **If child received**
 - ≥ 2 seasonal influenza vaccines during any previous season,
 - **And** ≥ 1 dose of a 2009(H1N1)-containing vaccine (monovalent 2009(H1N1) or any 2010-14 seasonal vaccines),
 - Then the child needs only 1 dose in 2014–15.
 - Children 6mos—8yrs for whom this is not the case need 2 doses

- ❑ **Need only 1 dose of vaccine in 2014–15 if :**
 - ≥ 2 doses of seasonal influenza vaccine since July 1, 2010; or
 - ≥ 2 of seasonal influenza vaccine before July 1, 2010, **and** ≥ 1 dose of monovalent 2009(H1N1) vaccine; or
 - ≥ 1 dose of seasonal influenza vaccine before July 1, 2010, **and** ≥ 1 dose of seasonal influenza vaccine since July 1, 2010

Conclusions

- ❑ **Influenza vaccination clinics that include adults (e.g. healthcare personnel) provide great opportunity to assess their need for other vaccines, e.g. Tdap, zoster, pneumococcal PPSV23 and PCV13, etc.**

- ❑ **Resources for adult patients in addition to their primary care providers can be found at www.cdc.gov/vaccines/adults.**
 - Adult immunization schedule
 - Adult vaccine quiz
 - Vaccine provider locator
 - Education/communications resources

- ❑ **Influenza vaccine and disease surveillance information at www.cdc.gov/flu.**

Thank You!

And special thanks to Dr. Lisa Grohskopf, CDC, for sharing her slides, and to CDC teams responsible for analyses of vaccine coverage and communications

Questions?

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