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webinar series

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NCIRD Immunization Services Division

Centers for Disease Control and Prevention

Improving Adult Immunizations

September 18, 2014

Outline

- Background on burden of disease in adults
- Overview of adult immunization schedule
- Coverage for routinely recommended adult vaccines
- Practice standards for adult immunizations

Objectives

- Review 2014 adult immunization schedule and changes
- 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 adults[2]**
- **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**
- **Pertussis[3]**
  - **41,880 total reported cases 2012**
    - **~9,000 among adults**
- **Hepatitis B[4]**
  - **3,350 acute cases reported 2010**
    - **35,000 estimated cases**
- **Zoster[5]**
  - **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**

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 group[1]

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					
Haemophilus influenzae 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 indications[1]

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 component 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										
Haemophilus influenzae 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.

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Precautions and Contraindications Table

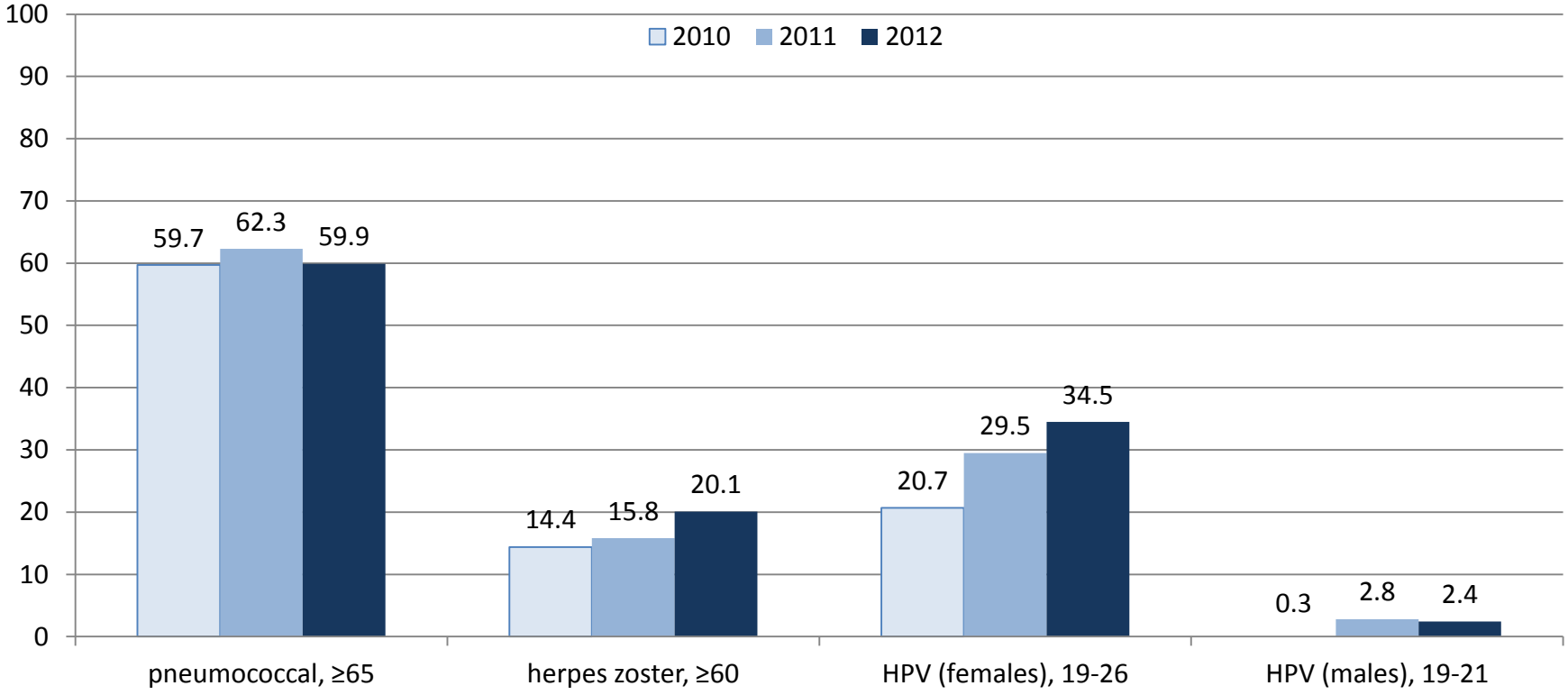
- Adult schedule includes table of primary precautions and contraindications

- See package inserts and full ACIP recommendations for additional details

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

VACCINE COVERAGE AMONG ADULTS

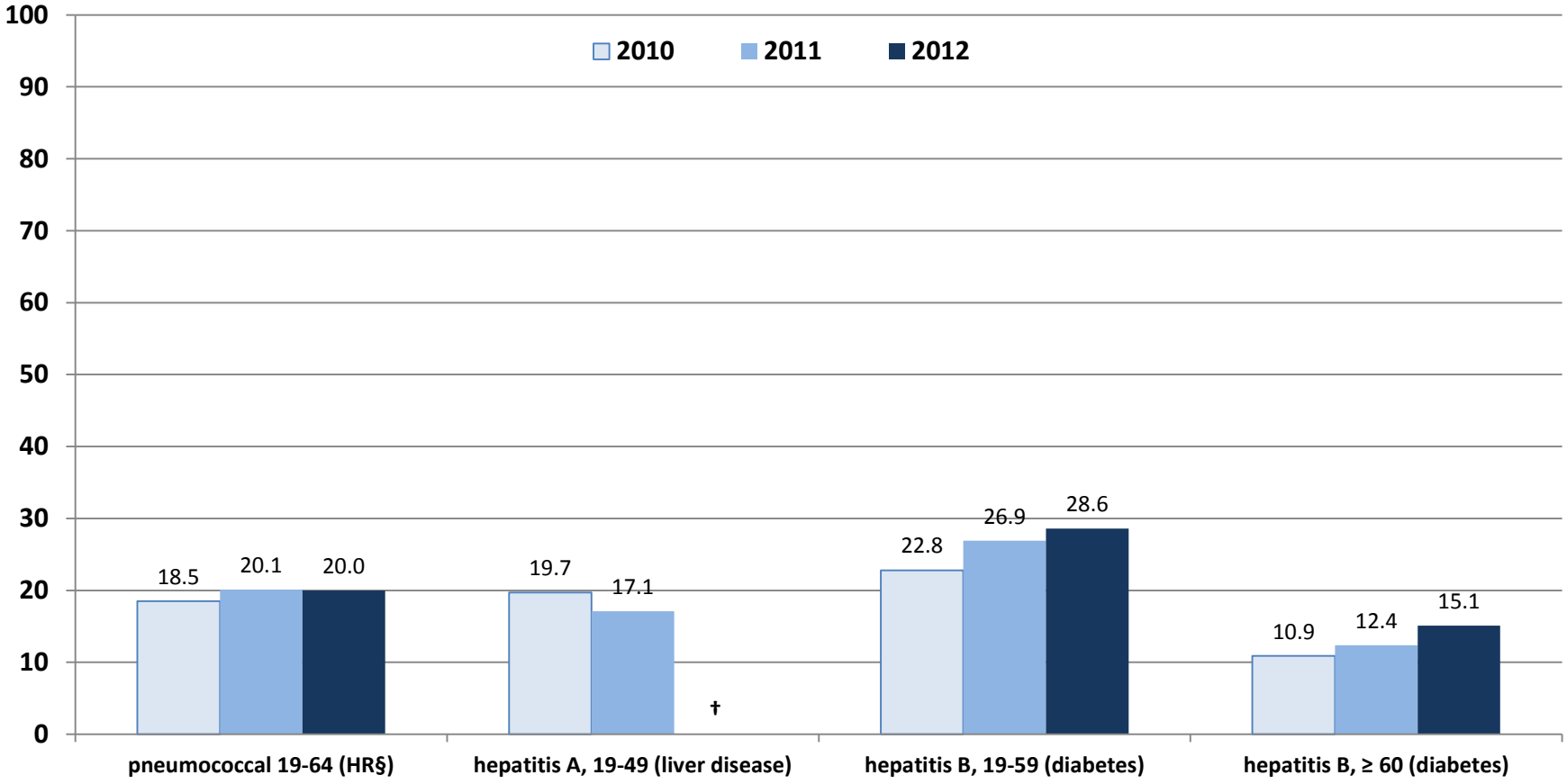
Vaccination Coverage For Age Based Vaccines, NHIS 2012 – United States



*** +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**

CDC, MMWR 2014: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6305a4.htm.

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

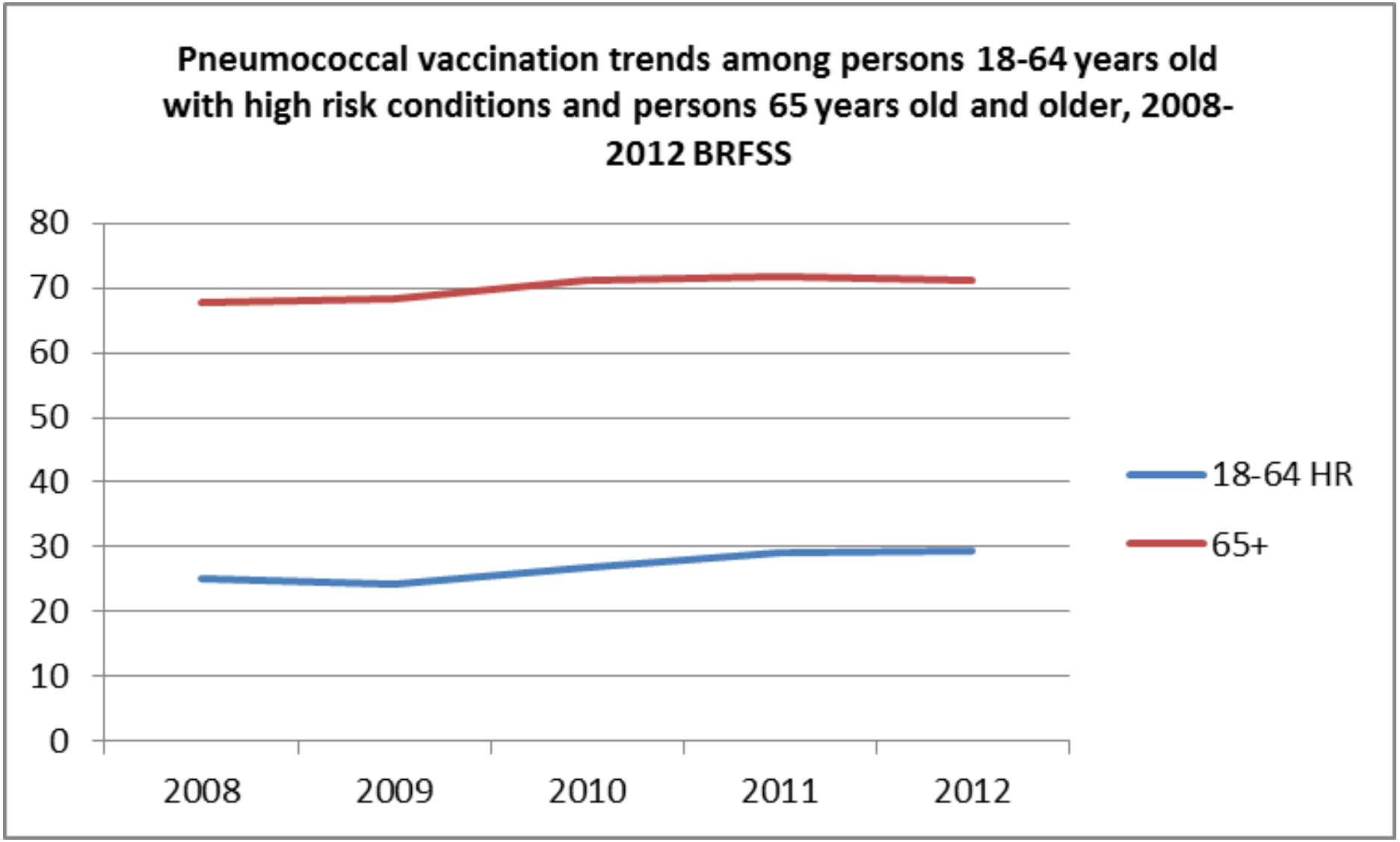


§ High Risk (HR) – Individuals] ever been told by a health professional they had diabetes, emphysema, chronic obstructive pulmonary disease, coronary heart disease, angina, heart attack, or other heart condition; had a diagnosis of cancer during the previous 12 months (excluding nonmelanoma skin cancer); 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.

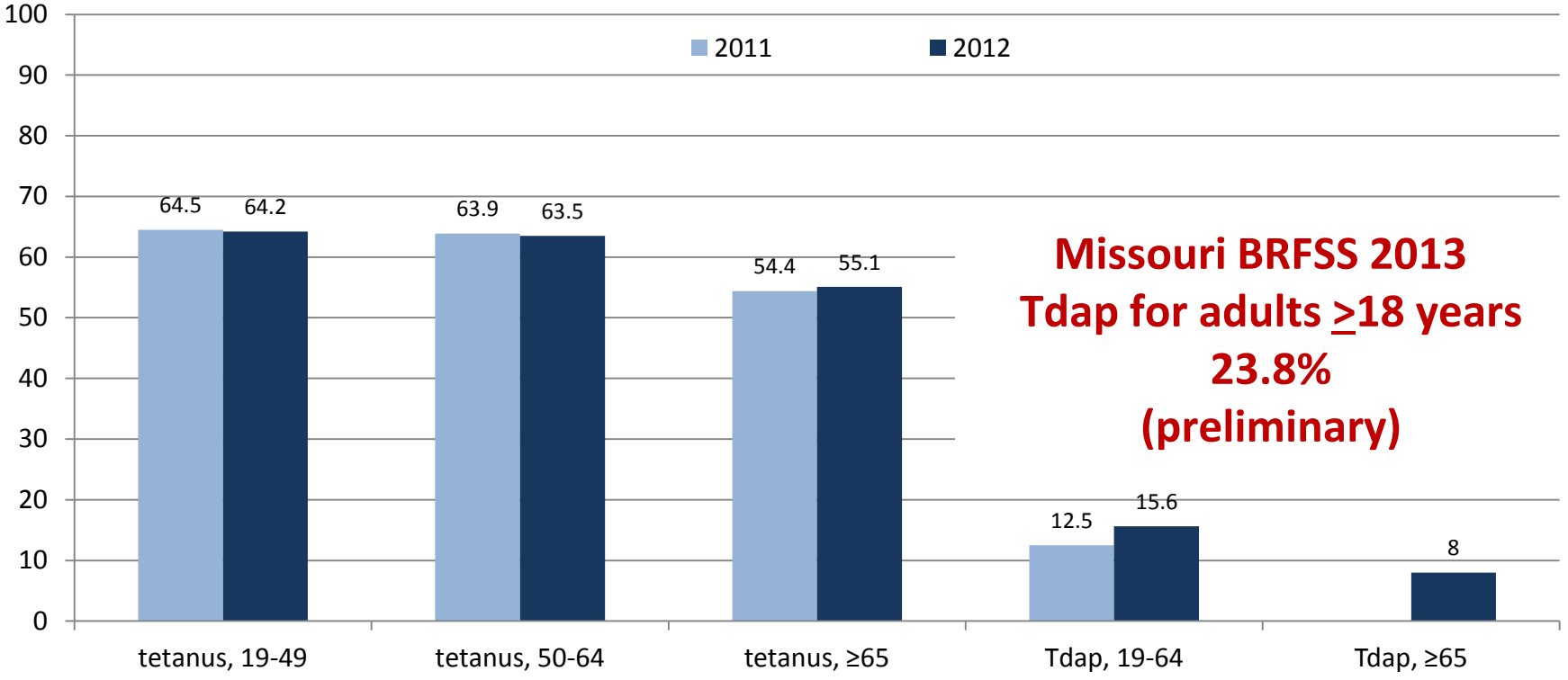
† Estimate is not reliable due to relative standard error (standard error/estimates) >0.3

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

Pneumococcal Vaccine Coverage for Missouri, 2008-12



Tetanus toxoid-containing vaccines coverage, NHIS 2010-2012



Missouri BRFSS 2013
Tdap for adults ≥18 years
23.8%
(preliminary)

*** +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

CDC, MMWR 2014: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6305a4.htm.

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

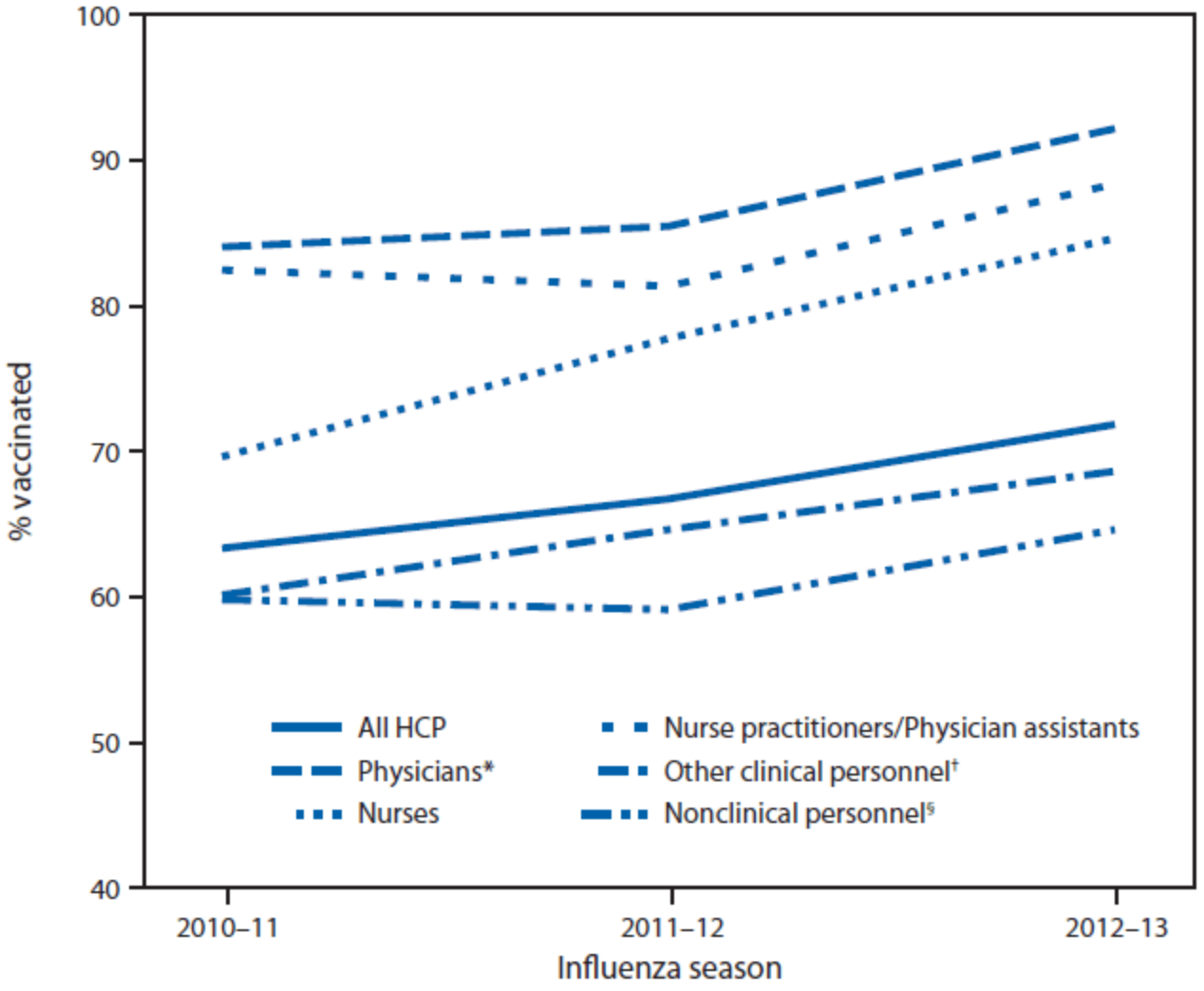
Group	2011-12 (%)	2012-13 (%)	Difference (%)
Persons ≥ 18 yrs	**38.8**	**41.5**	**+2.7**
Persons 18-49 yrs, all	28.6	31.1	+2.5
Persons 18-49 yrs, high risk	36.8	39.8	+3.0
Persons 50-64 yrs	42.7	45.1	+2.4
Persons ≥ 65 yrs	64.9	66.2	+1.3
Persons 18-64 yrs – Missouri	**33.7**	**38.1**	**+4.4**
Persons ≥65 yrs - Missouri	**70.8**	**72.4**	**+1.6**

http://www.cdc.gov/flu/fluvaxview/index.htm.

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

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

- **Significant burden of illness with diseases for which vaccines are available.**

- **Vaccination coverage rates among adults 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

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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**

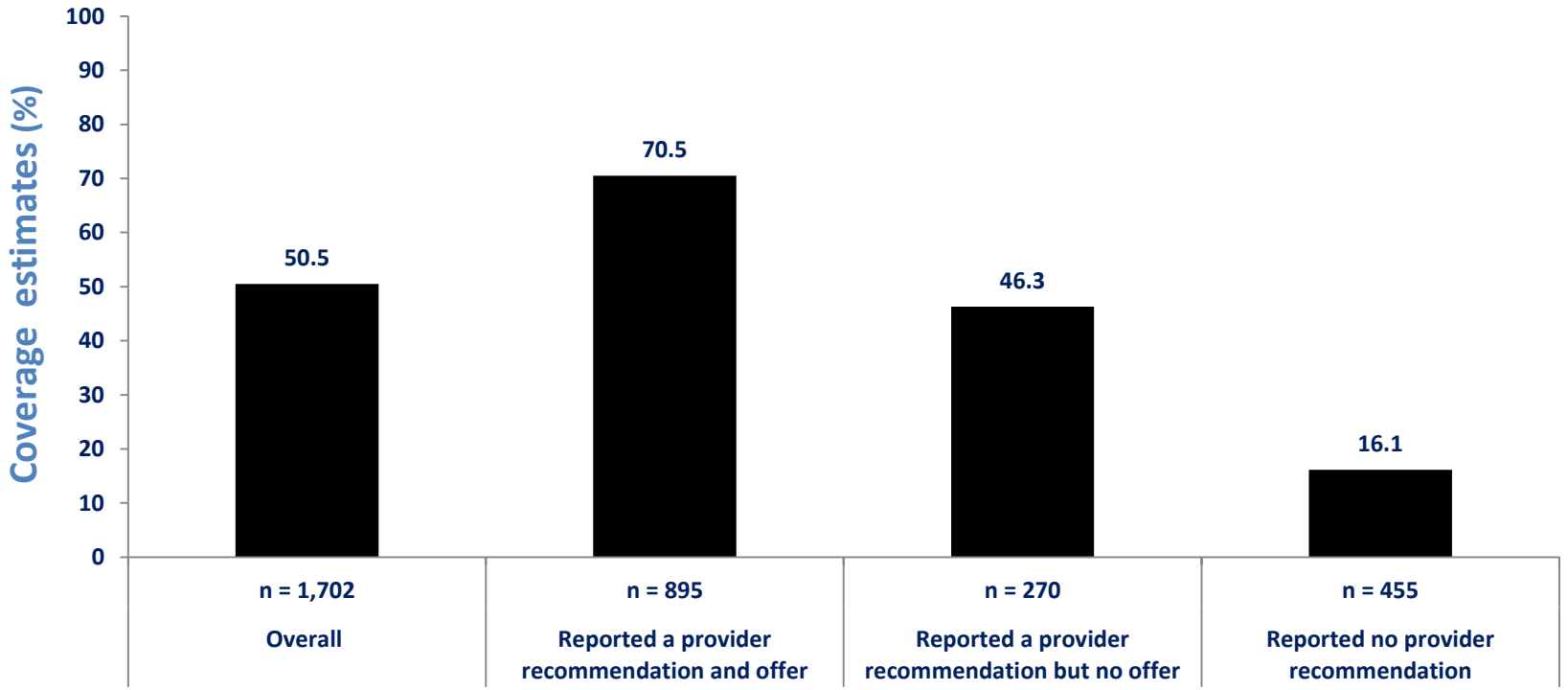
Reference: 1. Hurley, et al. Annals of Internal Medicine, 2014.
2. Guide to community preventive services: www.thecommunityguide.org/vaccines/index.html
3. Adult non-influenza vaccine coverage: www.cdc.gov/mmwr/preview/mmwrhtml/mm6305a4.htm.

Main Reason for Non-vaccination Adults 18 to 64 years: NIS-Adult 2007

Main Reason	Flu	Pneumococcal	Tetanus
Vaccine cost	4%	2%	1%
Not needed	28%	19%	41%
Did not know	4%	25%	10%
Doctor did not recommend	7%	30%	17%
Side-effects	21%	5%	1%

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

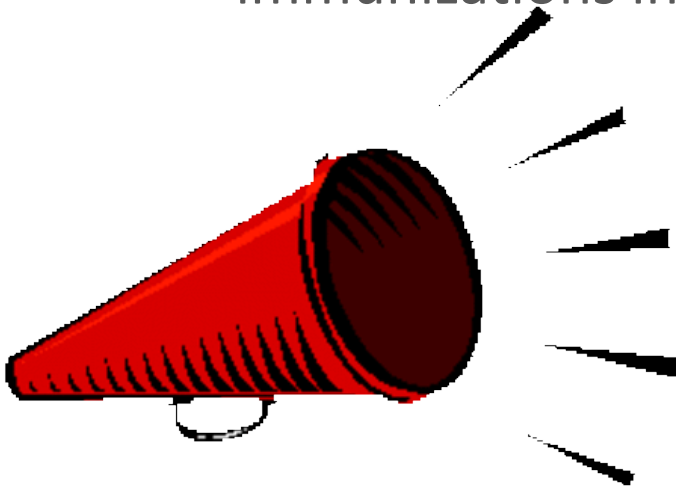
- **Stress that all providers, including those that don't provide vaccine services, have a role in ensuring patients up-to-date on vaccines**

- **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.

http://www.publichealthreports.org

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 others 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

http://www.publichealthreports.org

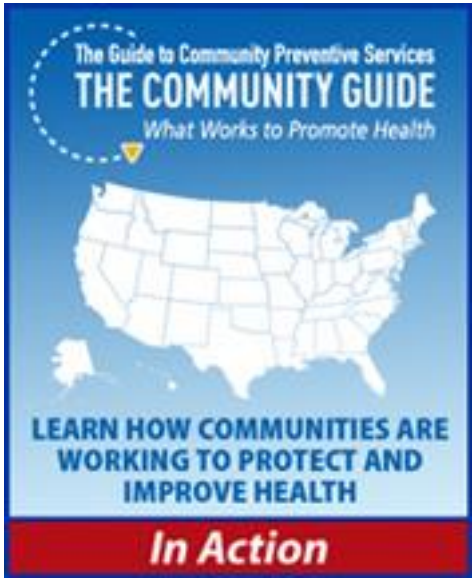
Adult Immunization Practice Standards Formally Supported by

- 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)

http://www.izsummitpartners.org

Components of Successful Vaccination Programs

- **Use a combination of approaches**
- **Education of patients plus public promotion**
- **Increased access to vaccination services (e.g. increased use of non-traditional providers, like pharmacies)**
- **Strategies shown to improve coverage:**
  - Use of standing orders
  - Use of reminder-recall systems
  - Efforts to remove administrative barriers
  - Provider and practice assessment of vaccination and feedback
  - Use of immunization registries



http://www.thecommunityguide.org/vaccines/index.html.

Meta-Analysis of Interventions to Increase Use of Adult Immunization

Intervention	Odds Ratio*
Organizational change (e.g., standing orders, separate clinics devoted to prevention)	16.0
Provider reminder	3.8
Patient financial incentive	3.4
Provider education	3.2
Patient reminder	2.5
Patient education	1.3

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

Stone E. Interventions that increase use of adult immunization and cancer screening services. Ann Intern Med. 2002; 136:641-51.

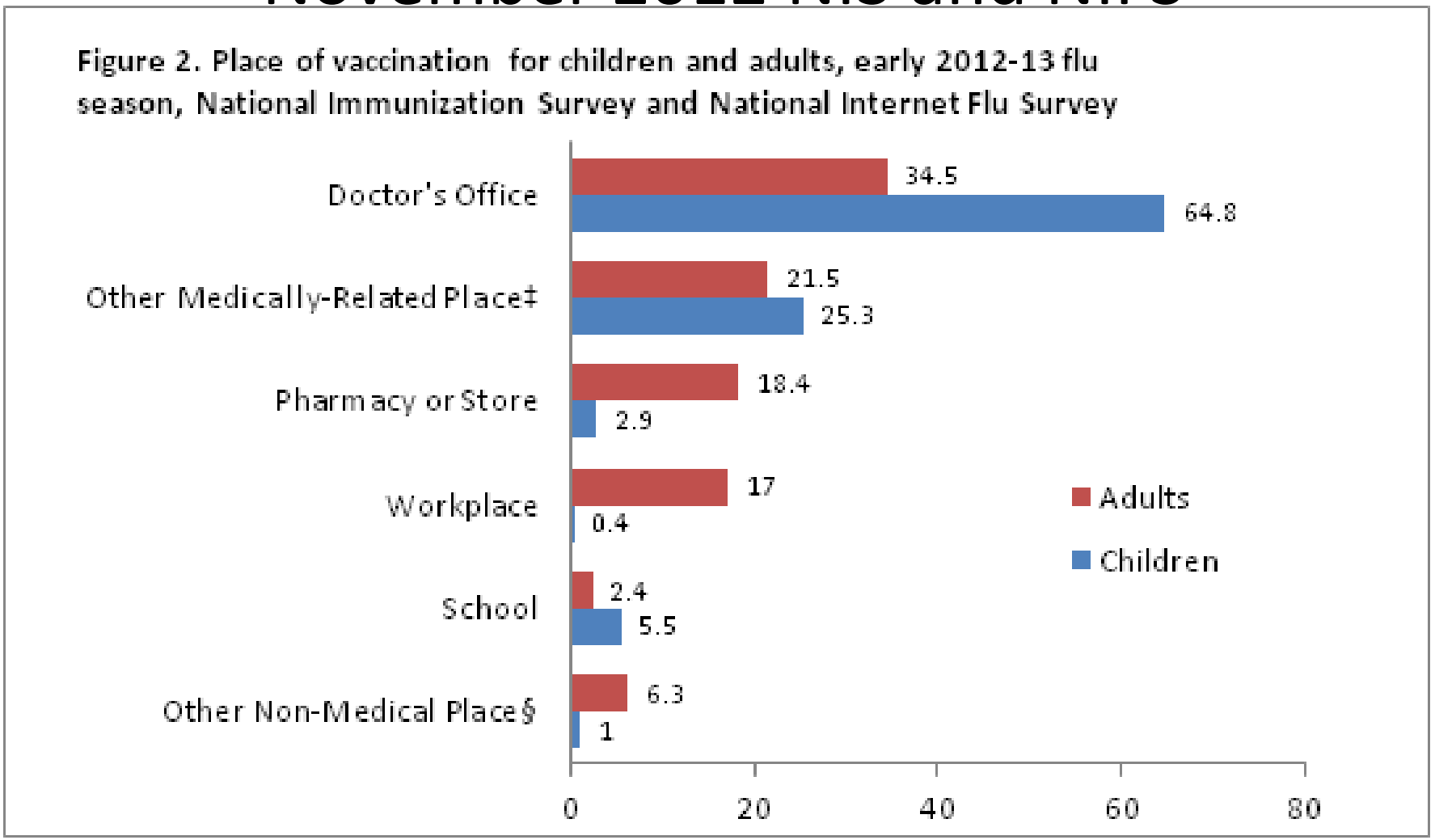
Improving Use of Immunization Information Systems (IIS – aka Vaccine Registries)

- **Increase use important for many reasons, including**
  - Ensuring patients get the right vaccines at the right time
  - Tracking vaccination rates
  - Potential for use in quality measures and coverage tracking
    - In pediatrics, use of IIS known to improve vaccination
  - Meaningful Use part 2 requirement to submit to IIS where available.
  - Increase preparedness for a pandemic
    - Likely potential scenario for preparing for next influenza pandemic, e.g. H5N1, H7N9, etc. two doses influenza vaccine for all ages, 21 days apart

- **Challenge: limited use by many providers for adult patients (e.g. 8% internists)**

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.

Place of Vaccination by age group, November 2012 NIS and NIFS*



*October 4 – November 17, 2012 National Immunization Survey (NIS) data for children 6 months through 17 years of age
November 2-15, 2012 National Internet Flu Survey (NIFS) data for adults ≥ 18 years of age

Partnerships to Raise Awareness and Immunization Coverage

- Professional medical, nursing and pharmacist organizations and their state and local chapters
- Advocacy and education groups, e.g. Association of Diabetes Educators, American Heart Association, etc.
- STD, TB, HIV and other health department clinics
- Community Health Centers
- Corrections
- Large healthcare systems
- Private sector partners such as pharmacies, faith based partners, occupational health providers, and others

Example of Results with Implementation of Standards - Indian Health Service (IHS)

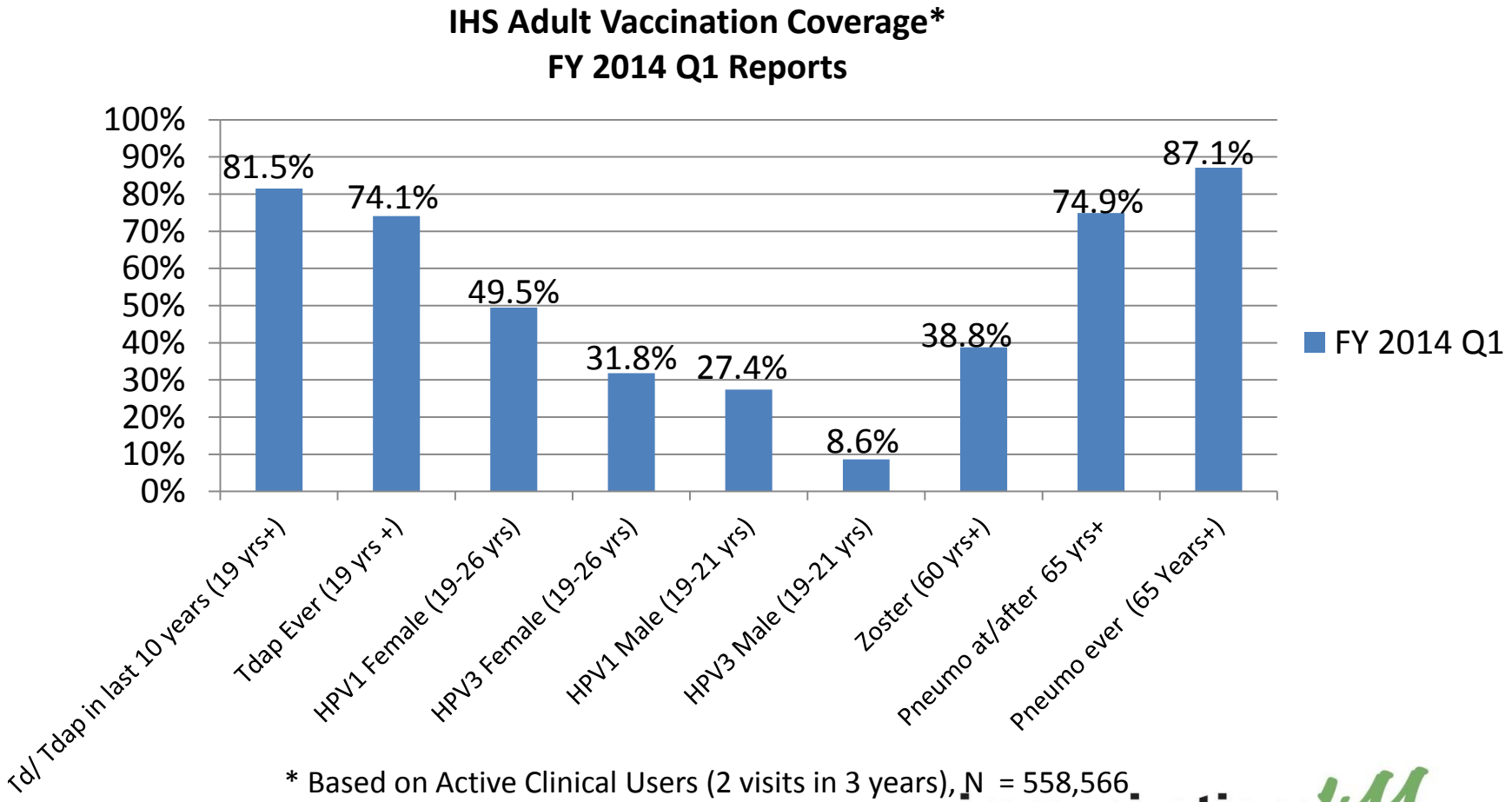
- I.H.S. is federal agency charged with providing healthcare to eligible American Indian/Alaska Native people
  - member of one of the 566 federally recognized tribes
  - residence in the IHS catchment Area

- 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



* Based on Active Clinical Users (2 visits in 3 years), N = 558,566

Slides from ACIP Meeting on August 13, 2014 regarding proposed new recommendations for pneumococcal vaccination

PROPOSED RECOMMENDATIONS FOR PNEUMOCOCCAL 13-VALENT CONJUGATE AND 23-VALENT POLYSACCHARIDE VACCINE USE AMONG ADULTS

Background and Summary of evidence supporting PCV13 use among adults ≥65 years

- **Substantial burden of S. pneumonia-related illness, especially among older adults and immune suppressed**
- **PCV13 shown to prevent IPD and non-bacteremic pneumonia among persons ≥65 years[1]**
  - 75% reduction in vaccine type IPD
  - 45% reduction in vaccine type non-bacteremic pneumonia
- **PPSV23 shown to prevent invasive pneumococcal disease, but not non-invasive disease**
- **11 serotypes do not over lap between PCV13 and PPSV23**
- **Immune response non-inferior or improved (for some serotypes) for PCV13 (or PCV7) vs. PPSV23[2,3]**
- **Safety for both vaccines demonstrated in clinical trials**

[1]CAPITA, June 2014 ACIP; [2]Phase III trials, Pfizer, ACIP 2011, 2012; [3]DeRoux et al. CID 2008

Conclusions:
Sequence and intervals for PCV13 and PPSV23 use

- **PCV13 should be given first when possible**
  - Immune response improved when PCV13 given as the first dose [1,2]
  - However, limited evidence to inform optimal interval between vaccines
- **Proposed recommended interval between PCV13 followed by PPSV23: 6-12 months**
- **Proposed recommended interval for PCV13 when given post-PPSV23: ≥1 year**
- **If the second pneumococcal vaccine second dose cannot be given during this time window, a dose can be given later during the next visit**

[1]Phase III studies (004, 3005, 3010), February 2011 ACIP

[2]DeRoux et al. CID 2008

Indirect Effects and Long-term Utility of PCV13

- Indirect effects of PCV7 introduction on PCV7-type IPD and pneumonia among adults of all age groups
- Indirect effects of PCV13 program have further reduced the proportion of adult IPD caused by PCV13 types and pneumonia disease burden
  - Additional reductions likely in the next 3-5 years (if similar to post-PCV7 experience)
  - The largest impact may have already been observed due to rapid PCV13 uptake

Key point: The expected benefits of PCV13 use among adults will likely decline over time

Adults ≥65 years of age with no previous pneumococcal vaccine (PCV13 or PPSV23)

Proposed language:

Adults 65 years of age or older who have not previously received pneumococcal vaccine or whose previous vaccination history is unknown should receive a dose of PCV13 first, followed by a dose of PPSV23

Adults ≥65 years of age with no previous pneumococcal vaccine (PCV13 or PPSV23)

Proposed guidance on intervals for sequential use:

A dose of PPSV23 should be given 6 to 12 months following a dose of PCV13. If PPSV23 can not be given during this time window, a dose of PPSV23 should be given during the next visit. The two vaccines should not be co-administered.

PCV13 (@ 65 years or later) + PPSV23

PCV13-naïve adults ≥65 years of age previously vaccinated with PPSV23

Proposed language:

Adults 65 years of age or older who have not previously received PCV13 and who have previously received one or more doses of PPSV23 should receive a dose of PCV13 one year or more after their last dose of PPSV23.

Potential time-limited utility of routine PCV13 use among adults ≥65 years

Proposed language:

The recommendations for routine PCV13 use among adults ≥65 years old should be re-evaluated in 2018 and revised as needed

Resources For Implementing New Standards

- CDC

  www.cdc.gov/vaccines/adultstandards

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

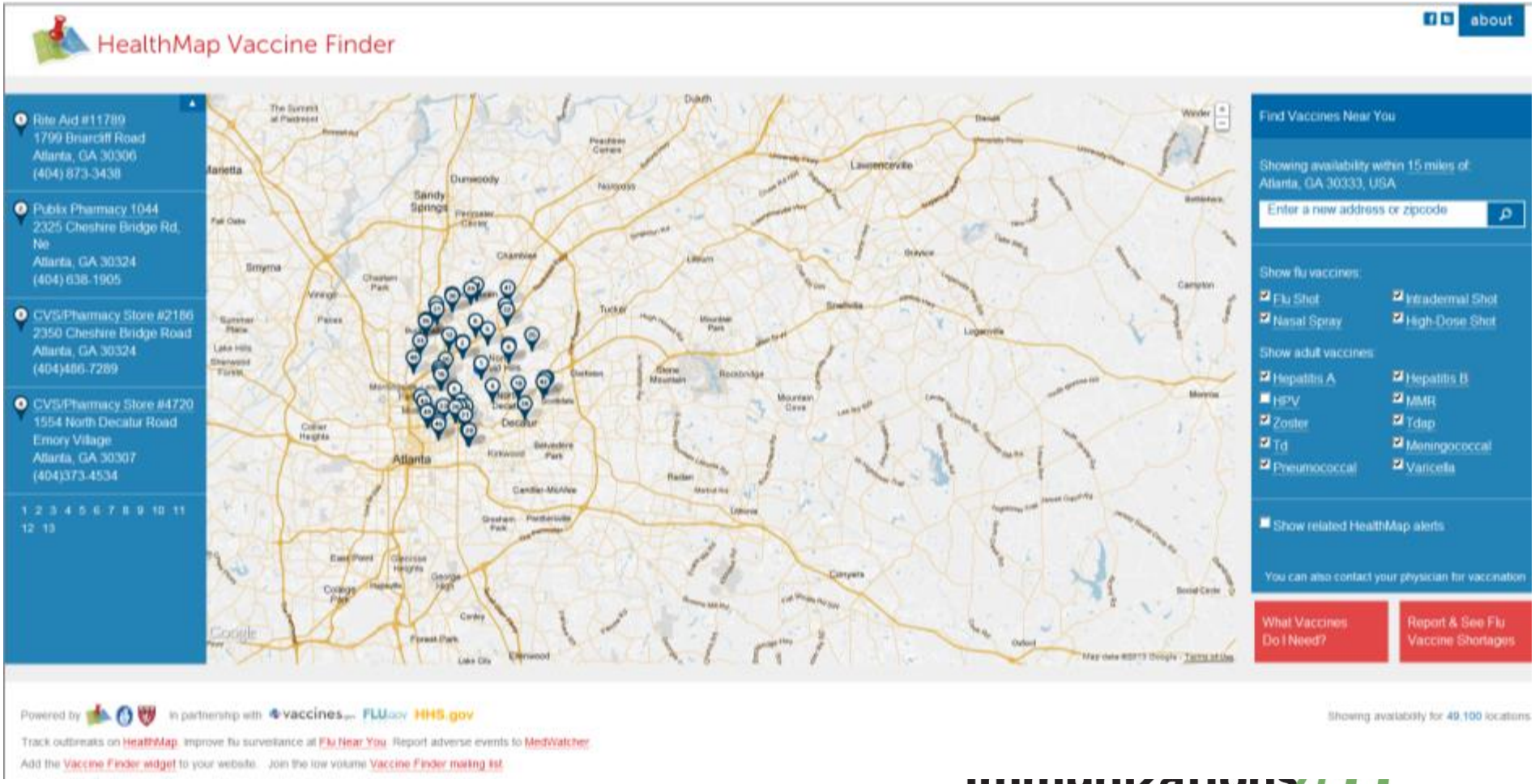
  www.izsummitpartners.org

  Examples of implementation success at:

- National Foundation for Infectious Diseases - www.adultvaccination.org

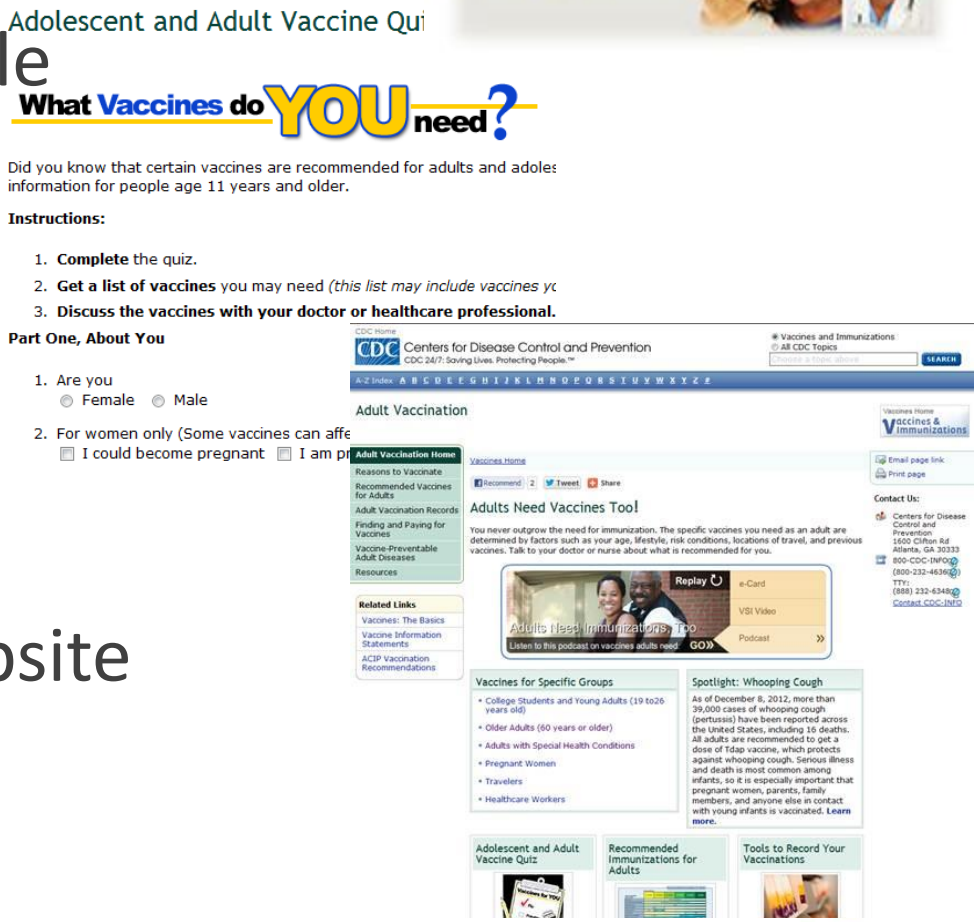
- American College of Obstetricians and Gynecologists - www.immunizationforwomen.org

http://vaccine.healthmap.org



Available CDC Resources

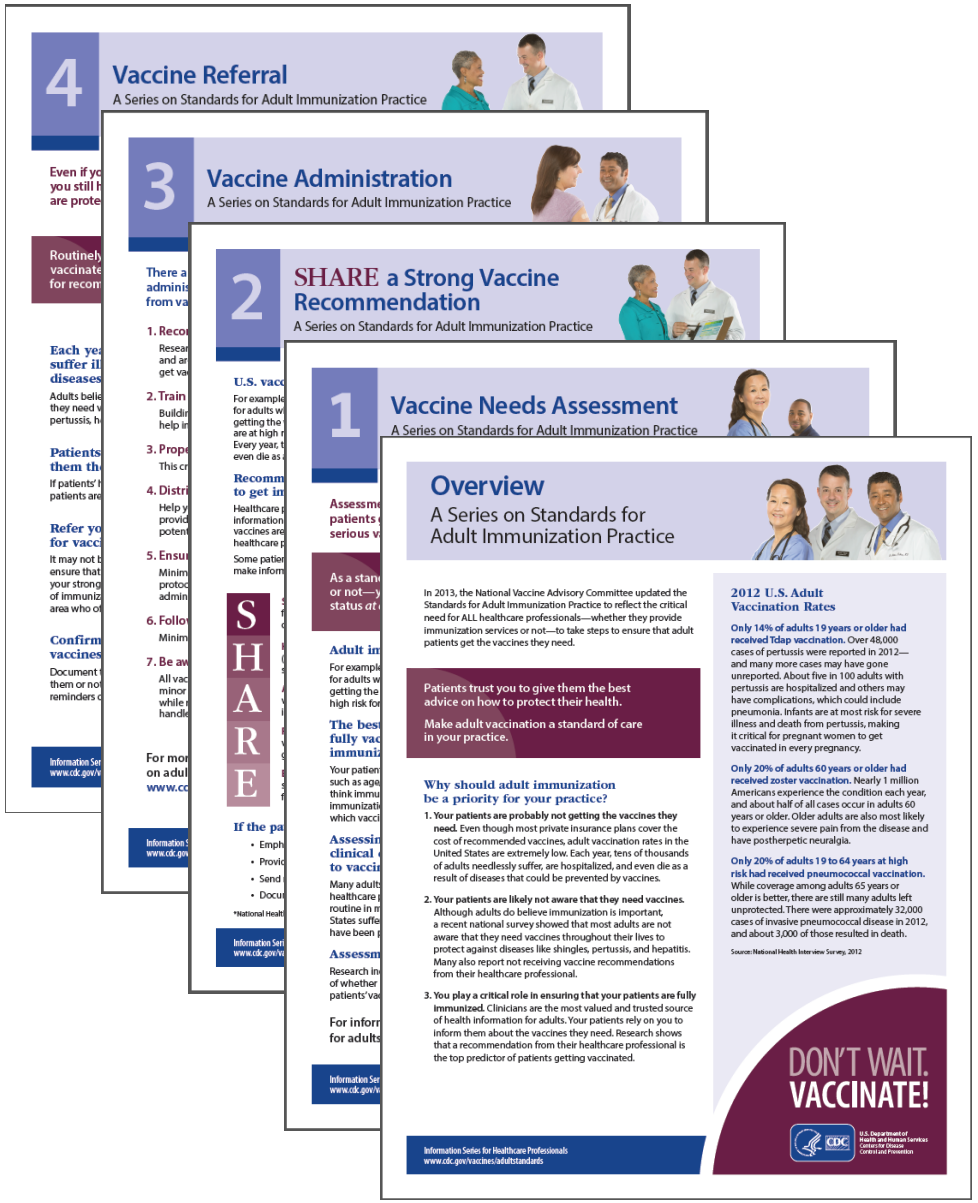
- Recommended adult immunization schedule
- Adult vaccine quiz
- Adult immunization scheduler
- Resources for patient education
- Adult vaccination website for consumers

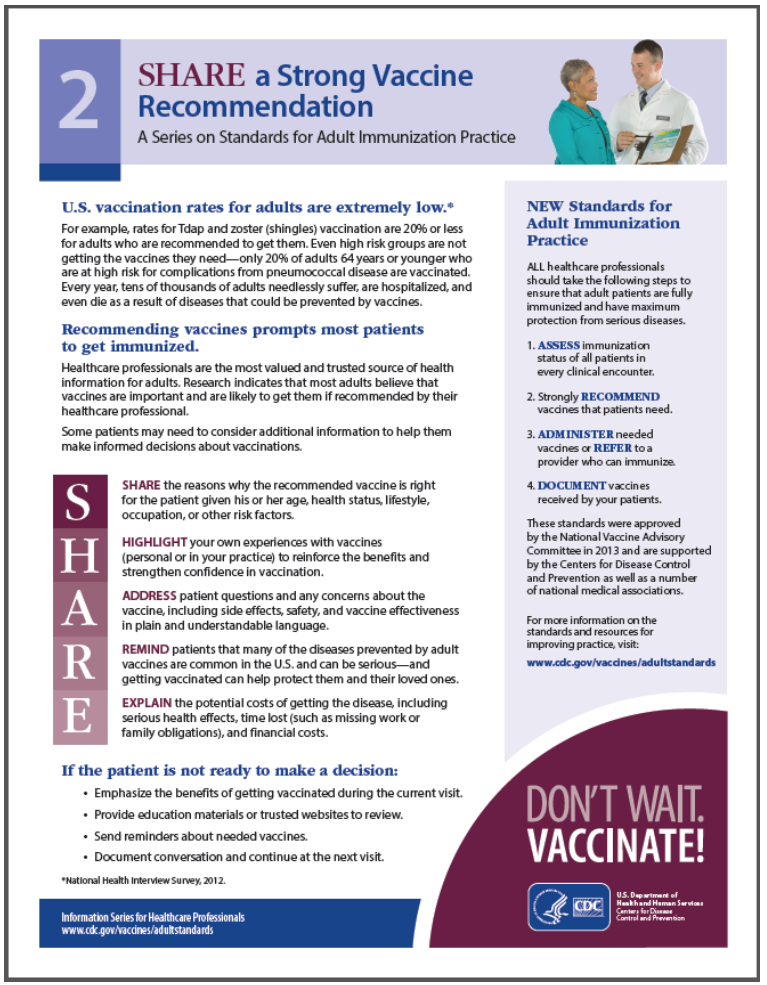


www.cdc.gov/vaccines/adults

immunizations411 LINK. LOGIN. LEARN. webinar series
hosted by the Missouri Department of Health and Senior Services' Bureau of Immunization Assessment and Assurance
www.health.mo.gov/immunizations

HCP Series: Implementing Standards





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www.cdc.gov/vaccines/AdultStandards

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, hobbies, travel and health conditions.

2 You can protect your health and the health of those around you by getting recommended vaccines.

Vaccines reduce your chance of getting sick.
Vaccines work with your body's natural defenses to reduce the changes of getting certain diseases and suffering from their complications.

Vaccines reduce your chance of spreading disease.
There are many things you want to pass on to your loved ones; illness is not one of them. Infants, older adults, and people with weakened immune systems (like those undergoing cancer treatment) are especially vulnerable to infectious disease.

3 You can't afford to risk getting sick.

Even healthy people can get sick enough to miss work or school, and most importantly time away from their loved ones. Being vaccinated is your best protection against many serious diseases. You take many steps to stay healthy – getting vaccinated is an important one.

Getting vaccinated as an adult is easier than you think.

- Adults can get vaccines at doctors' offices, pharmacies, workplaces, community health clinics, and health departments. To find a vaccine provider near you, go to **vaccine.healthmap.org**.
- Most health insurance plans cover the cost of recommended vaccines. Check with your insurance provider for details and to find an in-network provider.
- If you do not have health insurance, visit **www.healthcare.gov** to learn more about health coverage options.

What vaccines do you need?

All adults should get:

- Annual flu vaccine to protect against seasonal flu
- Td/Tdap to protect against tetanus, diphtheria, and pertussis

Some additional vaccines you may need (depending on your age, health conditions, and other factors) include:

- Hepatitis A
- Hepatitis B
- Human Papillomavirus (HPV)
- Meningococcal
- Pneumococcal
- Shingles

Traveling overseas? There may be additional vaccines you need depending on the location.

Find out at: **www.cdc.gov/travel**

DON'T WAIT. VACCINATE!

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, 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 presription medications can be vaccinated. However, if you are pregnant or have a weakened immune system talk with your doctor being being vaccinated, as some vaccines may not be recommended for you.

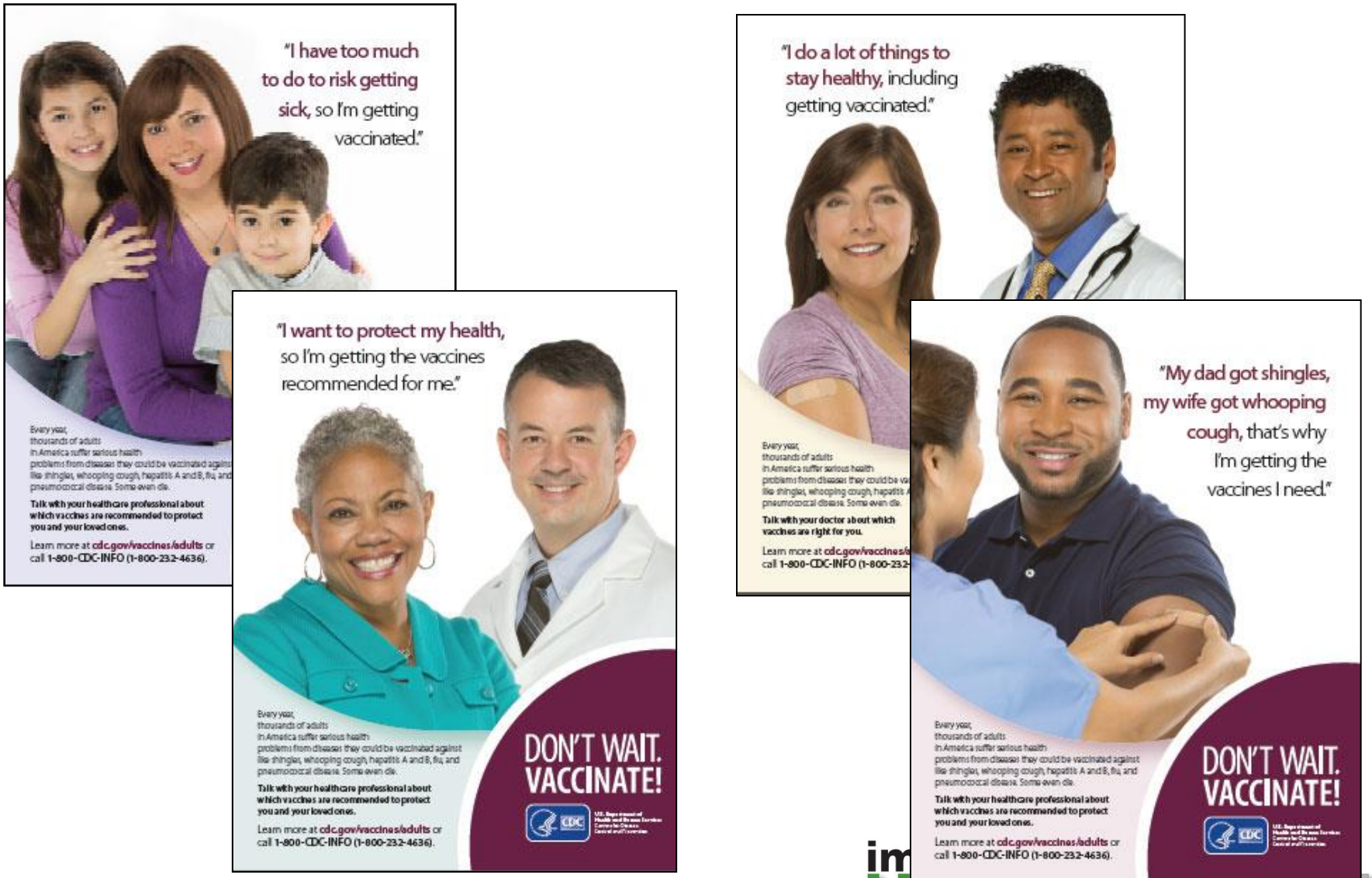
Some diseases that can be prevented by vaccines

Diseases 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; arthralgia (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/vpd-vac**

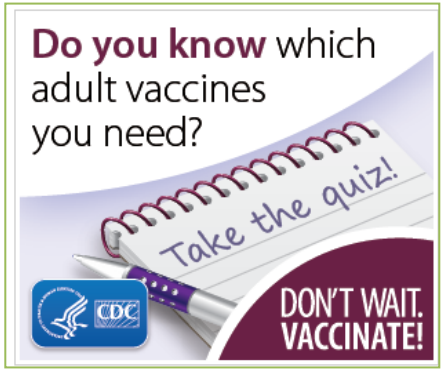
Learn more about vaccines for adults at www.cdc.gov/vaccines/adults or call 1-800-CDC-INFO (800-232-4636).

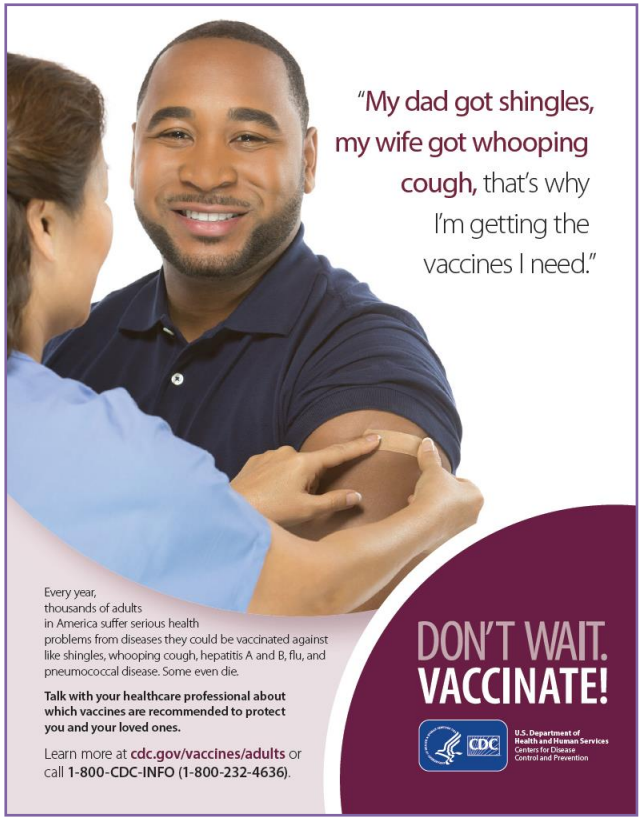
Patient Education Materials-Posters

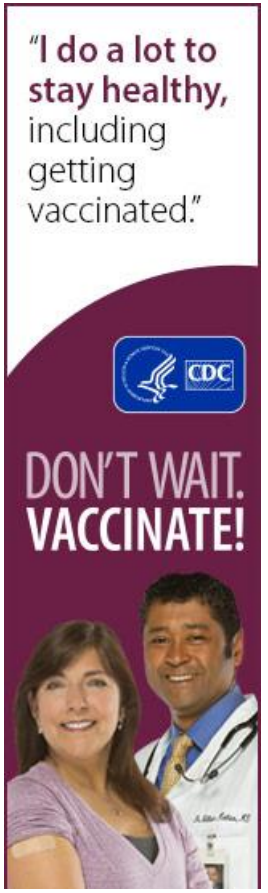


www.cdc.gov/vaccines/hcp/patient-ed/adults/for-patients/adults-all.html

Media and Outreach Products







www.cdc.gov/vaccines/AdultPatientEd

Conclusions

- **Adult Immunization Practice Standards updated and supported by wide range of provider organizations**

- **Implementation important to increasing awareness of and improving vaccine coverage of vaccines for adults**
  - New pending pneumococcal vaccine recommendations illustrates need to implement standards and benefits of use of vaccine registry so that adults get the right dose at the right time

- **Many tools and resources available to**
  - Help providers with implementation of immunization practice standards
  - Educate patients on the importance of vaccination

Acknowledgements

- **CDC immunization coverage and communications staff**

- **ACIP pneumococcal vaccine working group slides on pending changes for pneumococcal vaccination recommendations for adults**

- **Standards of Practice for Adult Immunizations**
  - National Adult and Influenza Immunization Summit (NAIIS) Partner organizations (www.izsummitpartners.org)
  - NAIIS Standards Writing Committee
  - National Vaccine Advisory Committee

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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