Adult Immunization: challenges and strategies to improve coverage

Presenter

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Impact of Vaccine Preventable Diseases in People

Shingles: "I would rather have ten babies than the pain I've endured for the past ten years," says 87-year-old Etta Watson Zukerman of Bethesda, Md., who has lost partial use of her right arm and hand due to nerve damage from postherpetic neuralgia (PHN).

Courtesy MN Oxman San Diego VAMC

CDC/ Patricia Walker, M.D., Regions Hospital, MN

Hepatitis B: "One day without warning, my brother, who was 18, woke up with severe pain in his abdomen. When we took him to the doctor, we were told that he and my mother were hepatitis B carriers. My brother passed away a year later. One month after his death, my mother was diagnosed with liver cancer." Leslie D. Hsu

Pertussis: Callie stopped breathing again. Family members watched helplessly from behind a glass wall as doctors tried for 45 minutes to revive her. Tragically, Callie could not be saved. She was only 5 weeks old. "We never dreamed we'd lose her," Katie said. "Callie was a more loved, more wanted baby than you'd ever find."

CDC website

Testimonials from Immunization Action Coalition and CDC websites

Meet Dr. William Cochran: A Pediatric Gastroenterologist

"A Doctor's Personal Experience with Whooping Cough"

- Dr. Cochrane came down with a severe cough where he could not catch his breath and would even pass out.
- He coughed so long and hard that he cracked several ribs.
- He learned that he had pertussis or "whooping cough"
- It took him three months to recover.

"Anyone – doctor, parent, grandparent, caregiver, who comes into contact with infants should be sure they are up to date on their immunizations to spare those too young to be protected through vaccination ."

For Dr. Cochrane's full story, visit:
http://www.nfid.org/real-stories-real-people/cochran-pertussis.html

"WHEN MEDITATING OVER A DISEASE, I NEVER THINK OF FINDING A REMEDY FOR IT,
BUT, INSTEAD, A MEANS OF PREVENTION."

LOUIS PASTEUR

Learning Objectives

At the end of this presentation, the participants will be Able to:

1. **Discuss the importance of Adult vaccination**
2. **Brief Adult immunization coverage rates**
3. **Discuss HAAD adult immunization practice standards**
4. **Brief Barriers and opportunities in adult immunization**

Ten Great Public Health Achievements 1900 - 1991

1. **Vaccination**
2. Motor vehicle safety
3. Safer workplaces
4. Control of infectious diseases
5. Decline in deaths from coronary heart disease and stroke

- Immunization:
  - **Saved more lives in the last 50 years than any other health intervention**
  - **Immunization is the single most cost-effective health investment, making it the cornerstone of efforts to promote health[2]**

Introduction

As the UAE grows in economic prosperity and in providing quality care, there shall be greater stress on the two aspects of good quality health care.

1. Provision of appropriate, evidence-based care for acute illnesses,
2. emphasis on preventive care.

Background

- Vaccines are considered as one of the greatest public health achievements of the last century for their role in
  - Eradicating smallpox
- Understanding why our patients respond with "No thanks!" rather than "Of course!" when we offer vaccinations and effectively communicating the risks and benefits of vaccination are important parts of this effort.
- Bad News – Vaccination rates remain well below established Healthy People 2020 targets for many vaccines recommended for adults.

Why adult vaccinations?

- Immunity wanes over time.
- As we age, we become more susceptible to serious diseases caused by common infections, such as shingles, flu & pneumonia.
- This results in otherwise preventable morbidity & mortality.
  - Excess hospitalization
  - Diminished quality of life (post-herpetic neuralgia)
  - Missed work
  - Medical complications

Recommended Adult Vaccines

- **Vaccines are an important part of optimizing health of the vaccinated person, and preventing infections in others**

- **Example: Vaccination against influenza and pertussis reduces the risk in the person vaccinated and also prevent someone from spreading these diseases**

Vaccination of Pregnant Women: Two-For-One

- **Influenza vaccination of pregnant women[1]**
  - Reduce risk of influenza illness in pregnant women
  - Reduce risk of influenza illness, fevers and influenza hospitalizations in infants during first 6 months of life
  - Vaccinate with inactivated flu vaccine (not live vaccine) during pregnancy
- **Tdap vaccination of pregnant women**
  - Vaccinate in 3rd trimester to transfer antibody to infant prior to birth
  - Prevents pertussis in mom and protects infant
    - Tdap vaccination during pregnancy estimated to be 93% effective in preventing pertussis in infants <4 months old[2]
- **Pregnant women should NOT receive any live vaccines (e.g. live influenza vaccine, MMR, varicella or shingles vaccines)**

1. CDC. Prevention and Control of Seasonal Influenza: Recommendations of the ACIP – U.S., 2014-15 Influenza Season. MMWR 2014; 63(32): 691-697.
2. Dabrera G, et al. Case-control study to estimate the effectiveness of maternal pertussis vaccination in protecting newborn infants in England and Wales, 2012-2013. *Clin Infect Dis.* 2015; 60 (3): 333-337.

Cocooning Protects Babies

Everyone in a baby's life needs to get vaccinated against whooping cough and flu!

What is cocooning?

Babies younger than 6 months old are more likely to develop certain infectious diseases than older children. Cocooning is a way to protect babies from catching diseases from the people around them – people like their parents, siblings, grandparents, friends, child-care providers, babysitters, and healthcare providers. Once these people are vaccinated, they are less likely to spread these contagious diseases to the baby. They surround the baby with a cocoon of protection against disease until he or she is old enough to get all the doses of vaccine needed to be fully protected.

Why is cocooning important?

Babies less than 6 months old are too young to have received all the doses of vaccine that are needed to protect them from whooping cough (pertussis), flu (influenza), and other dangerous diseases. To be fully protected, babies need to get *all* the vaccine doses in a series – not just the first dose.

Unvaccinated adults and family members, including parents, are often the ones who unknowingly spread dangerous diseases to babies.

Currently, towns and cities across the nation have had whooping cough outbreaks. Influenza outbreaks happen every year.

How can we protect babies?

Everyone has the opportunity to protect babies by getting vaccinated themselves. Cocooning is an easy and effective way that people can work together to prevent the spread of whooping cough and flu to babies.

How can we protect babies against whooping cough?

- All children should be vaccinated on schedule with DTaP (the childhood whooping cough vaccine).
- All teenagers and adults need a one-time dose of Tdap vaccine (the teen and adult whooping cough vaccine).
- Pregnant women should receive a Tdap vaccination in each pregnancy, preferably during the 3rd trimester. This will protect the pregnant woman as well as her baby!

How can we protect babies against flu?

Everyone age 6 months and older needs to receive flu vaccine every year.

INFORMATION FROM TRUSTED SOURCES

- **Video: Surround Your Baby with Protection** (about whooping cough)
  http://cocooning.preventpertussis.org
  From the Texas Department of State Health Services
- **Diseases and the Vaccines That Prevent Them**
  www.cdc.gov/vaccines/hcp/patient-ed/conversations/prevent-diseases/index.html
  From the Centers for Disease Control and Prevention
- **Vaccine Educational Materials for Parents**
  www.chop.edu/service/vaccine-education-center/order-educational-materials
  From the Vaccine Education Center, Children's Hospital of Philadelphia
- **Vaccine Information Website**
  www.vaccineinformation.org
  From the Immunization Action Coalition
- **Cocooning and Tdap Vaccination Web Section** (cocooning information about whooping cough)
  www.immunize.org/cocooning
  From the Immunization Action Coalition

Technical content reviewed by the Centers for Disease Control and Prevention

IMMUNIZATION ACTION COALITION 1573 Selby Avenue • St. Paul, MN 55104 • 651-647-9009 • www.immunize.org • www.vaccineinformation.org

www.immunize.org/handouts/[illegible].pdf • Item #P4039 (9/11)

Vaccination Coverage in Adults*

Vaccine	2012 Coverage	Health People 2020
Tdap (ages 19-64)	**12.5% (Healthcare workers (26.8%)**	–
Herpes zoster	**15.8%**	**30%**
HPV *Women ages 19-26 ≥ 1* *Men ages 19-26 ≥ 1*	 **29.5%** **< 3%**	–
Pneumococcal *Ages 19-64* *Age > 65*	 **20.1%** **62.3%**	 **60%** **90%**
Hepatitis B *High risk, ages 19-49* *Ages 19-59 with diabetes* *Healthcare professionals*	 **42%** **22.8%** **63.8**	 **90%** – –
Hepatitis A (ages 19-49)	**10.7%**	–
Influenza *≥ 6 m of age* *65 y of age* *Pregnant women* *Healthcare providers*	 **42.8%** **68.6%** **47%** **72%**	 **80%** **80%** **90%**

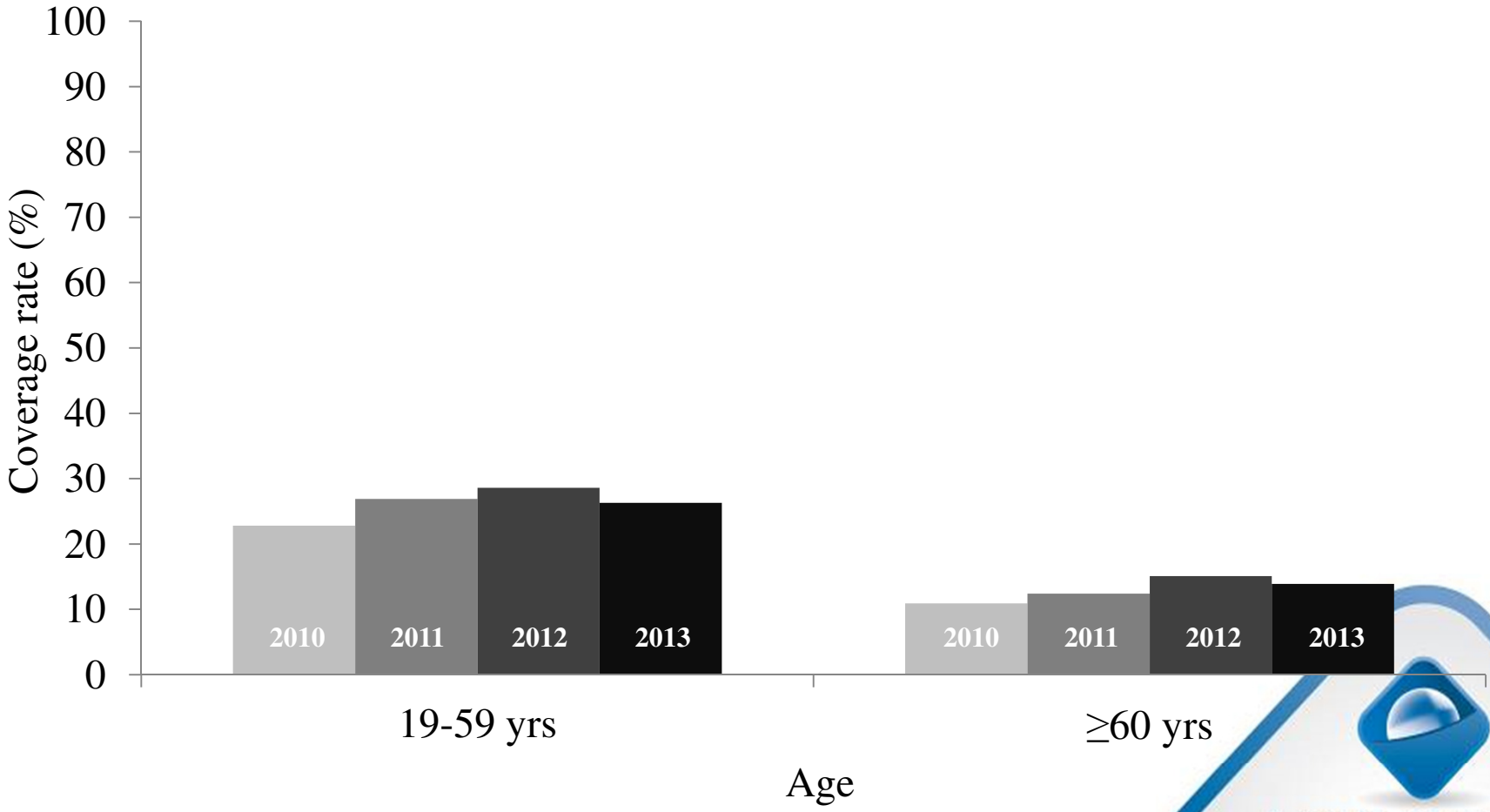
CDC. Non-influenza vaccination coverage among adults: United States, 2012. MMWR Morb Mortal Wkly Rep. 201 (5):95-102.

Gaps in Vaccine Utilization and American Healthcare

- Financial burden of vaccine-preventable diseases among adults – **10 billion annually**
- Public health burden is equally heavy
  - Annually on average, **50,000 adults die** from vaccine-preventable diseases or their complications*
  - These figures would be greatly reduced with vaccinations

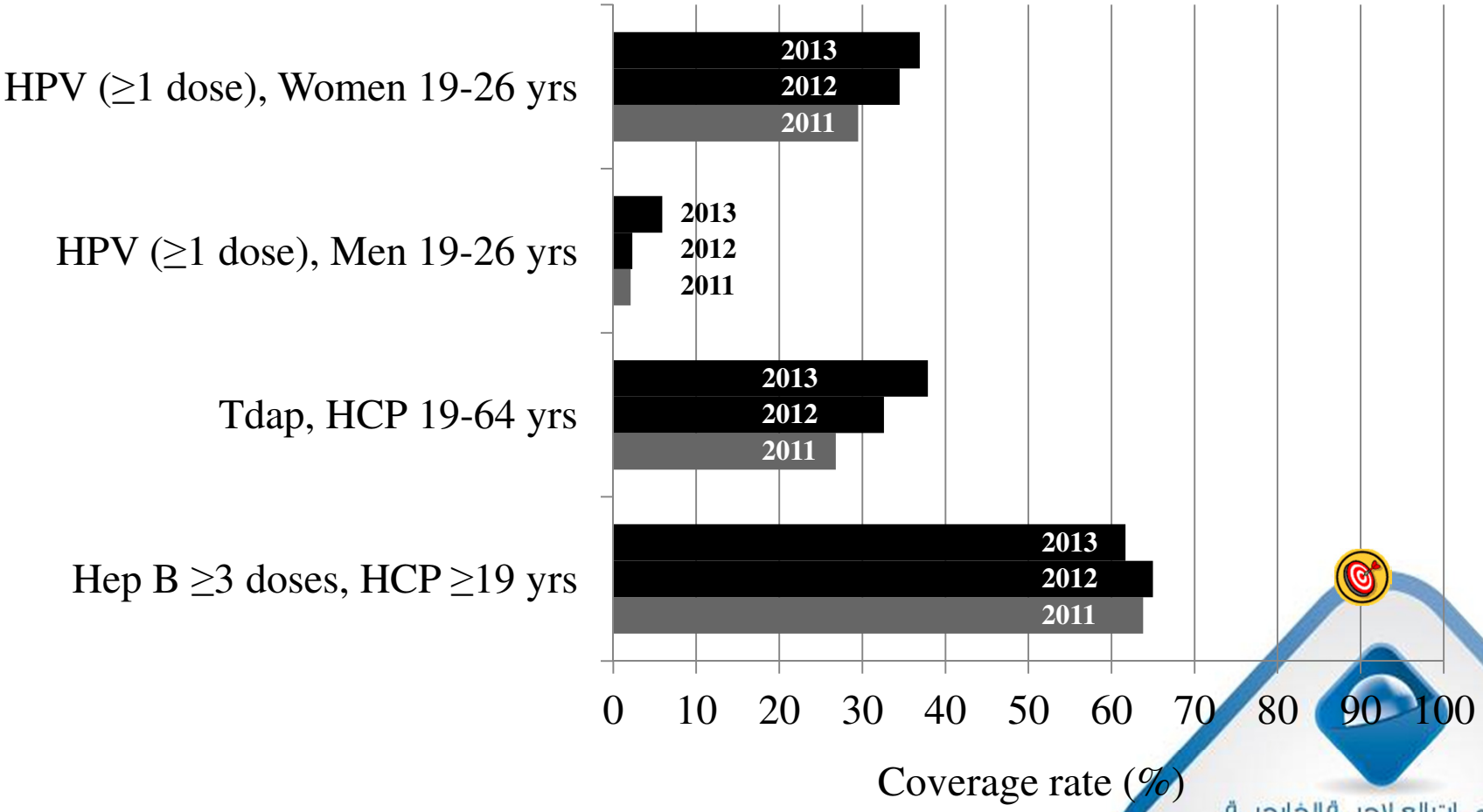
* National Foundation for Infectious Disease. Facts about immunization. August 2009. Available at: http://www.nfid.org/publications/factsheets/adultfact.pdf

Hepatitis B Vaccination (≥3 doses) for Adults Living with Diabetes, 2010–2013



Source: National Health Interview Surveys

Adult Immunization Rates Still Low



Source: National Health Interview Surveys : Healthy People 2020 target

Influenza Vaccination Coverage Among Adults 2011-12, 2012-13, and 2013-14 Seasons, United States

Group	2011-12 (%)	2012-13 (%)	2013-14 (%)*	Difference (%)
Persons ≥ 18 yrs	**38.8**	**41.5**	**42.4**	**3.6**
Persons 18-49 yrs, all	28.6	31.1	32.3	3.7
Persons 18-49 yrs, high risk	36.8	39.8	38.7	1.9
Persons 50-64 yrs	42.7	45.1	45.3	2.6
Persons ≥ 65 yrs	64.9	66.2	65.0	0.1

* Estimates of the percentage of people vaccinated are based on interviews conducted beginning September (BRFSS) or October (NIS) 2013 through June 2014 and reported vaccinations from July 2013 through May 2014. For California, BRFSS interview data were only available for September-December 2013 and thus estimates for persons ≥18 years only reflect vaccinations during July-November 2013. For Mississippi, sample size was insufficient from interviews conducted April-June 2014 to estimate vaccinations past the end of February, 2014 for persons ≥18 years.

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

Reasons for Low Adult Immunization Rates

- **Adults not aware of vaccines they need**
- **Healthcare providers for adults busy and often unaware**
- **Not all providers stock all vaccines for adults**
- **Adults frequently see multiple providers, so vaccine history recordkeeping difficult**
- **Reimbursement for vaccines confusing, unclear**

Adult vaccination challenges

- Immunizing adults is a more complicated undertaking than is immunizing children.

1. Vaccination recommendations for adults depend on a person's age, occupation, health status, and behavior (e.g., sexual activity and drug use).
2. This requires physicians and nurses to establish procedures to identify persons who are eligible, often from long lists of qualifying conditions, in contrast to childhood immunization, in which all are offered vaccine unless there are contraindications.

Reference: Plotkins, S. et al, Immunization in the United States. *Vaccines* 2008:1479-1510.

Barriers

- *Organizational*
- *Sociological*
- *Operational*

Barrier

(Organizational – Competing Demands)

- Limited time during office visits to address medical problems and routine health maintenance
- Forget (or choose not to discuss) immunizations during sick visits
- Unlike childhood vaccinations (based primarily on age and vaccination history), decisions about adult vaccinations often must take into account comorbid medical conditions

Barrier

(Sociological – Low patient health literacy)

- Poor communication can contribute to rejection of vaccinations and dissatisfaction with care
- Such poor communication often results from a belief by the health professional that vaccine refusal arises from ignorance, which can simply be addressed by persuading or providing more information
- Such an approach is counter-productive because it fails to account for the complexity of reasons underpinning vaccine refusal and may even result in a backfire effect
- **Tailor messages on the basis of particular reasons for declination**

Lewandowsky S, Ecker UKH, Seifer CM, Schwarz N, and Cook J. Misinformation and its correction: continued influence and successful debiasing. Psychological Science in the Public Interest. 2012; 13:106-131

What Do We Hear?

Patient	Response
"I can fight infection naturally – with good nutrition and hygiene."	…and if you get it – there is no effective treatment for measles, mumps, or polio.
"My doctor didn't recommend it."	…nursing staff advise, physician then advises (I have had mine!).
"You gave me a flu shot and now I have the flu."	…use the term "flu" only to describe an influenza infection, not a viral illness causing the common cold. Average patient suffers from 3-4 colds annually, is not unexpected that they might develop symptoms of a cold within weeks of an influenza vaccination – inappropriately attributed to the flu shot.
"It will make me or my child sick."	In 2010, *The Lancet* retracted the now infamous 1998 article by Andrew Wakefield that described an erroneous association between MMR (measles, mumps, and rubella) vaccine and autism. Suspicion still abounds.

What Do We Hear?

Patient	Response
"Someone I respect recommended against it."	A key way patients receive and share antivaccination information is through social media, such as Facebook, Twitter, or blogs. You can use your own social media accounts to offset that content with information favoring immunization. Here are some of the more trustworthy websites: • http://www.immunize.org • http://www.familydoctor.org • http://www.acponline.org • http://www.aap.org • http://www.medlineplus.gov • http://www.cdc.gov/vaccines/hcp/vis/index.html
"It's a conspiracy."	Historical unethical research practices and a source of mistrust toward physicians in some minority communities. e.g., Tuskegee experiment
"There is little threat of disease anymore."	The CDC has a website (http://www.cdc. gov/vaccines/vac-gen/why.htm) aimed at parents, explaining the necessity to continue immunizing against diseases that are close to but not completely eradicated.

Barriers

- Operational
  - Not stocking all recommended vaccines
  - Lack of standing orders
  - Lack of tracking systems (Immunization registries)
    - Leads to under- and over-vaccination

What are *Standards for Adult Immunization Practice*?

- **All providers, including those who don't provide vaccine services, have role in ensuring patients up-to-date on vaccines**
- **Call to action for ALL healthcare professionals to:**
  - **Assess immunization status of all patients at 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 in state vaccine registries**

www.cdc.gov/vaccines/hcp/patient-ed/adults/for-practice/standards/index.html
www.cdc.gov/vaccines/hcp/patient-ed/adults/for-patients/index.html

- Assess
- Recommend
- Administer or Refer
- Document

General Principles

- Successful dialogue
  - Take time to LISTEN
  - Solicit and welcome questions
  - Keep the language simple and uniform
  - Clear cohesive voice of vaccine safety
  - Keep the conversation going
- Every visit is an opportunity for primary prevention
- Trust develops when patients identify both competence and caring in their physician

Organizations Supporting Standards for Adult Immunization Practice

- Association of Immunization Managers (AIM)
- National Association of County & City Health Officials (NACCHO)
- Association of State & Territorial Health Officials (ASTHO)
- Centers for Disease Control and Prevention (CDC)
- 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)
- Immunization Action Coalition (IAC)
- Infectious Diseases Society of America (IDSA)
- National Foundation for Infectious Diseases (NFID)
- Others

To add your organization to those supporting the standards, go to…
http://www.izsummitpartners.org/support-adult-standards/

Recommended Adult Immunization Schedule
United States - 2016

The 2016 Adult Immunization Schedule was approved by the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP), the American Academy of Family Physicians (AAFP), the American College of Physicians (ACP), the American College of Obstetricians and Gynecologists (ACOG), and the American College of Nurse-Midwives (ACNM). On February 2, 2016, the adult immunization schedule and a summary of changes from 2015 were published in the *Annals of Internal Medicine*, and the availability of the schedule was announced in the *Morbidity and Mortality Weekly Report (MMWR)* on February 4, 2016.

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

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

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

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

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

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

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

Recommended Adult Immunization Schedule—United States - 2016

Note: These recommendations must be read with the footnotes that follow containing number of doses, intervals between doses, and other important information.

Figure 1. Recommended immunization schedule for adults aged 19 years or older, 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 Tdap for Td once, then Td booster 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 depending on indication					
Pneumococcal 13-valent conjugate (PCV13)*,[8]	1 dose					
Pneumococcal 23-valent polysaccharide (PPSV23)[8]	1 or 2 doses depending on indication					1 dose
Hepatitis A*,[9]	2 or 3 doses depending on vaccine					
Hepatitis B*,[10]	3 doses					
Meningococcal 4-valent conjugate (MenACWY) or polysaccharide (MPSV4)*,[11]	1 or more doses depending on indication					
Meningococcal B (MenB)[11]	2 or 3 doses depending on vaccine					
Haemophilus influenzae type b (Hib)*,[12]	1 or 3 doses depending on indication					

*Covered by the Vaccine Injury Compensation Program

- Recommended for all persons who meet the age requirement, lack documentation of vaccination, or lack evidence of past infection; zoster vaccine is recommended regardless of past episode of zoster
- Recommended for persons with a risk factor (medical, occupational, lifestyle, or other indication)
- No recommendation

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.

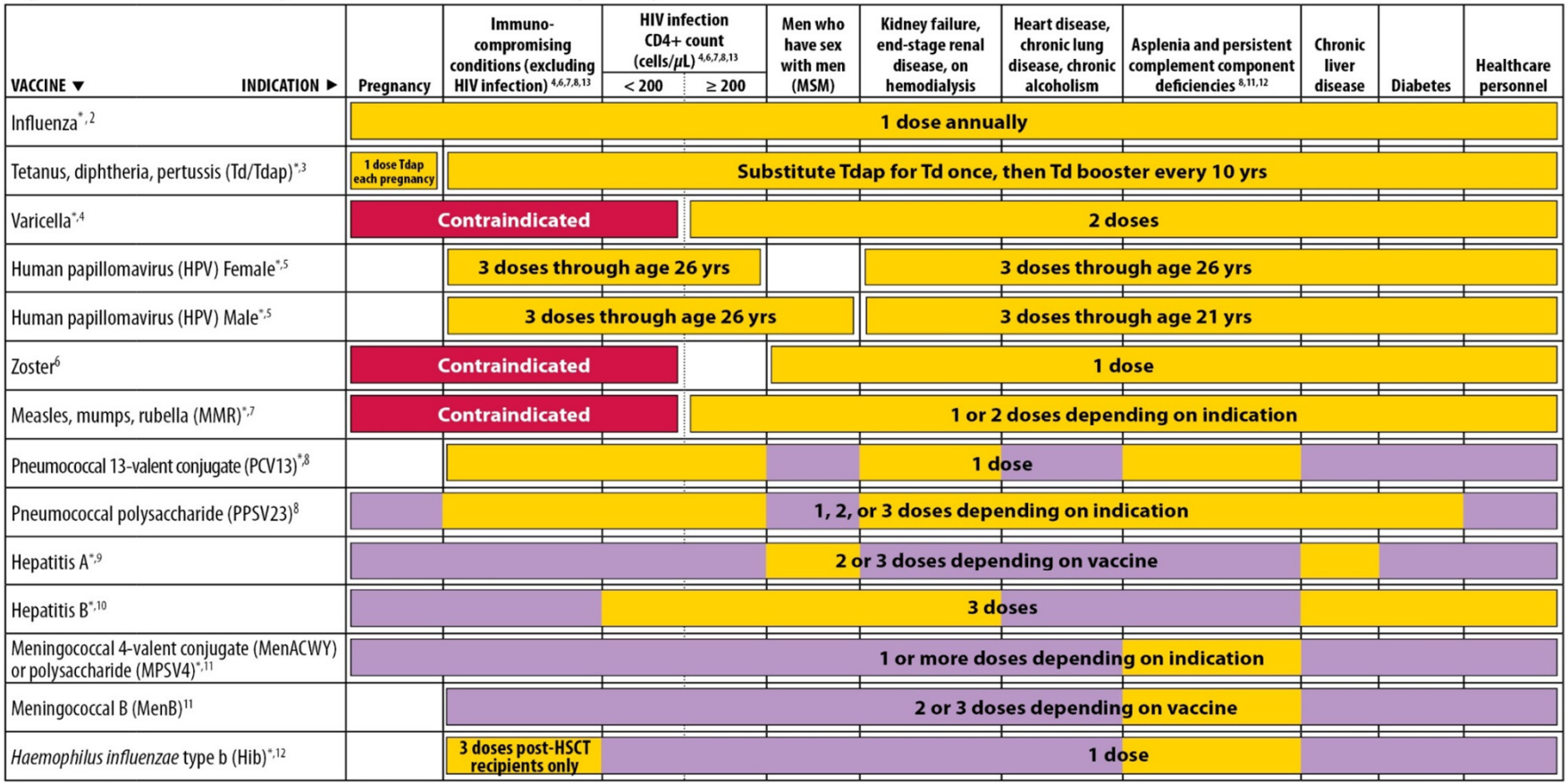
Information on how to file a Vaccine Injury Compensation Program claim is available at www.hrsa.gov/vaccinecompensation or by telephone, 800-338-2382. To file a claim for vaccine injury, contact the U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington, D.C. 20005; telephone, 202-357-6400.

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 America College of Physicians (ACP), the American College of Obstetricians and Gynecologists (ACOG) and the American College of Nurse-Midwives (ACNM).

Figure 2. Vaccines that might be indicated for adults aged 19 years or older based on medical and other indications[1]



These schedules indicate the recommended age groups and medical indications for which administration of currently licensed vaccines is commonly recommended for adults aged ≥19 years, as of February 2016. For all vaccines being recommended on the Adult Immunization Schedule: a vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Licensed combination vaccines may be used whenever any components of the combination are indicated and when the vaccine's other components are not contraindicated. For detailed recommendations on all vaccines, including those used primarily for travelers or that are issued during the year, consult the manufacturers' package inserts and the complete statements from the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/hcp/acip-recs/index.html). Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

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

Footnotes—Recommended Immunization Schedule for Adults Aged 19 Years or Older: United States, 2016

- have not received PCV13 but have received 2 doses of PPSV23: administer PCV13 at least 1 year after the most recent dose of PPSV23.
- have received PCV13 but not PPSV23: administer PPSV23 at least 8 weeks after PCV13. Administer a second dose of PPSV23 at least 5 years after the first dose of PPSV23.
- have received PCV13 and 1 dose of PPSV23: administer a second dose of PPSV23 at least 8 weeks after PCV13 and at least 5 years after the first dose of PPSV23.
- If the most recent dose of PPSV23 was administered at age <65 years, at age ≥65 years, administer a dose of PPSV23 at least 8 weeks after PCV13 and at least 5 years after the last dose of PPSV23.
- Immunocompromising conditions that are indications for pneumococcal vaccination are: congenital or acquired immunodeficiency (including B- or T-lymphocyte deficiency, complement deficiencies, and phagocytic disorders excluding chronic granulomatous disease), HIV infection, chronic renal failure, nephrotic syndrome, leukemia, lymphoma, Hodgkin disease, generalized malignancy, multiple myeloma, solid organ transplant, and iatrogenic immunosuppression (including long-term systemic corticosteroids and radiation therapy).
- Anatomical or functional asplenia that are indications for pneumococcal vaccination are: sickle cell disease and other hemoglobinopathies, congenital or acquired asplenia, splenic dysfunction, and splenectomy. Administer pneumococcal vaccines at least 2 weeks before immunosuppressive therapy or an elective splenectomy, and as soon as possible to adults who are newly diagnosed with asymptomatic or symptomatic HIV infection.

- Adults aged ≥19 years with cerebrospinal fluid leaks or cochlear implants: administer PCV13 followed by PPSV23 at least 8 weeks after PCV13; no additional dose of PPSV23 is indicated if aged <65 years. If PPSV23 was administered at age <65 years, at age ≥65 years, administer another dose of PPSV23 at least 5 years after the last dose of PPSV23.
- Adults aged 19 through 64 years with chronic heart disease (including congestive heart failure and cardiomyopathies, excluding hypertension), chronic lung disease (including chronic obstructive lung disease, emphysema, and asthma), chronic liver disease (including cirrhosis), alcoholism, or diabetes mellitus, or who smoke cigarettes: administer PPSV23. At age ≥65 years, administer PCV13 at least 1 year after PPSV23, followed by another dose of PPSV23 at least 1 year after PCV13 and at least 5 years after the last dose of PPSV23.
- Routine pneumococcal vaccination is not recommended for American Indian/Alaska Native or other adults unless they have an indication as above; however, public health authorities may consider recommending the use of pneumococcal vaccines for American Indians/Alaska Natives or other adults who live in areas with increased risk for invasive pneumococcal disease.

9. Hepatitis A vaccination

- Vaccinate any person seeking protection from hepatitis A virus (HAV) infection and persons with any of the following indications:
  - men who have sex with men;
  - persons who use injection or noninjection illicit drugs;
  - persons working with HAV-infected primates or with HAV in a research laboratory setting;
  - persons with chronic liver disease and persons who receive clotting factor concentrates;
  - persons traveling to or working in countries that have high or intermediate endemicity of hepatitis A (see footnote 1); and
  - unvaccinated persons who anticipate close personal contact (e.g., household or regular babysitting) with an international adoptee during the first 60 days after arrival in the United States from a country with high or intermediate endemicity of hepatitis A (see footnote 1). The first dose of the 2-dose hepatitis A vaccine series should be administered as soon as adoption is planned, ideally 2 or more weeks before the arrival of the adoptee.
- Single-antigen vaccine formulations should be administered in a 2-dose schedule at either 0 and 6–12 months (Havrix), or 0 and 6–18 months (Vaqta). If the combined hepatitis A and hepatitis B vaccine (Twinrix) is used, administer 3 doses at 0, 1, and 6 months; alternatively, a 4-dose schedule may be used, administered on days 0, 7, and 21–30 followed by a booster dose at 12 months.

10. Hepatitis B vaccination

- Vaccinate any person seeking protection from hepatitis B virus (HBV) infection and persons with any of the following indications:
  - sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., persons with more than 1 sex partner during the previous 6 months); persons seeking evaluation or treatment for a sexually transmitted disease (STD); current or recent injection drug users; and men who have sex with men;
  - health care personnel and public safety workers who are potentially exposed to blood or other infectious body fluids;
  - persons who are aged <60 years with diabetes as soon as feasible after diagnosis; persons with diabetes who are aged ≥60 years at the discretion of the treating clinician based on the likelihood of acquiring HBV infection, including the risk posed by an increased need for assisted blood glucose monitoring in long-term care facilities, the likelihood of experiencing chronic sequelae if infected with HBV, and the likelihood of immune response to vaccination;
  - persons with end-stage renal disease (including patients receiving hemodialysis), persons with HIV infection, and persons with chronic liver disease;
  - household contacts and sex partners of hepatitis B surface antigen–positive persons, clients and staff members of institutions for persons with developmental disabilities, and international travelers to regions with high or intermediate levels of endemic HBV infection (see footnote 1); and
  - all adults in the following settings: STD treatment facilities, HIV testing and treatment facilities, facilities providing drug abuse treatment and prevention services, health care settings targeting services to injection drug users or men who have sex with men, correctional facilities, end-stage renal disease programs and facilities for chronic hemodialysis patients, and institutions and nonresidential day care facilities for persons with developmental disabilities.
- Administer missing doses to complete a 3-dose series of hepatitis B vaccine to those persons not vaccinated or not completely vaccinated. The second dose should be administered at least 1 month after the first dose; the third dose should be administered at least 2 months after the second dose (and at least 4 months after the first dose). If the combined hepatitis A and hepatitis B vaccine (Twinrix) is used, give 3 doses at 0, 1, and 6 months; alternatively, a 4-dose Twinrix schedule may be used, administered on days 0, 7, and 21–30, followed by a booster dose at 12 months.
- Adult patients receiving hemodialysis or with other immunocompromising conditions should receive 1 dose of 40 mcg/mL (Recombivax HB) administered on a 3-dose schedule at 0, 1, and 6 months or 2 doses of 20 mcg/mL (Engerix-B) administered simultaneously on a 4-dose schedule at 0, 1, 2, and 6 months.

11. Meningococcal vaccination

- General information
  - Serogroup A, C, W, and Y meningococcal vaccine is available as a conjugate (MenACWY [Menactra, Menveo]) or a polysaccharide (MPSV4 [Menomune]) vaccine.
  - Serogroup B meningococcal (MenB) vaccine is available as a 2-dose series of MenB-4C vaccine (Bexsero) administered at least 1 month apart or a 3-dose series of MenB-FHbp (Trumenba) vaccine administered at 0, 2, and 6 months; the two MenB vaccines are not interchangeable, i.e., the same MenB vaccine product must be used for all doses.
  - MenACWY vaccine is preferred for adults with serogroup A, C, W, and Y meningococcal vaccine indications who are aged ≤55 years, and for adults aged ≥56 years: 1) who were vaccinated previously with MenACWY vaccine and are recommended for revaccination or 2) for whom multiple doses of vaccine are anticipated; MPSV4 vaccine is preferred for adults aged ≥56 years who have not received MenACWY vaccine previously and who require a single dose only (e.g., persons at risk because of an outbreak).
  - Revaccination with MenACWY vaccine every 5 years is recommended for adults previously vaccinated with MenACWY or MPSV4 vaccine who remain at increased risk for infection (e.g., adults with anatomical or functional asplenia or persistent complement component deficiencies, or microbiologists who are routinely exposed to isolates of *Neisseria meningitidis*).
  - MenB vaccine is approved for use in persons aged 10 through 25 years; however, because there is no theoretical difference in safety for persons aged >25 years compared to those aged 10 through 25 years, MenB vaccine is recommended for routine use in persons aged ≥10 years who are at increased risk for serogroup B meningococcal disease.
  - There is no recommendation for MenB revaccination at this time.
  - MenB vaccine may be administered concomitantly with MenACWY vaccine but at a different anatomic site, if feasible.
  - HIV infection is not an indication for routine vaccination with MenACWY or MenB vaccine; if an HIV-infected person of any age is to be vaccinated, administer 2 doses of MenACWY vaccine at least 2 months apart.
- Adults with anatomical or functional asplenia or persistent complement component deficiencies: administer 2 doses of MenACWY vaccine at least 2 months apart and revaccinate every 5 years. Also administer a series of MenB vaccine.
- Microbiologists who are routinely exposed to isolates of *Neisseria meningitidis*: administer a single dose of MenACWY vaccine; revaccinate with MenACWY vaccine every 5 years if remain at increased risk for infection. Also administer a series of MenB vaccine.
- Persons at risk because of a meningococcal disease outbreak: if the outbreak is attributable to serogroup A, C, W, or Y, administer a single dose of MenACWY vaccine; if the outbreak is attributable to serogroup B, administer a series of MenB vaccine.
- Persons who travel to or live in countries in which meningococcal disease is hyperendemic or epidemic: administer a single dose of MenACWY vaccine and revaccinate with MenACWY vaccine every 5 years if the increased risk for infection remains (see footnote 1); MenB vaccine is not recommended because meningococcal disease in these countries is generally not caused by serogroup B.
- Military recruits: administer a single dose of MenACWY vaccine.
- First-year college students aged ≤21 years who live in residence halls: administer a single dose of MenACWY vaccine if they have not received a dose on or after their 16th birthday.
- Young adults aged 16 through 23 years (preferred age range is 16 through 18 years): may be vaccinated with a series of MenB vaccine to provide short-term protection against most strains of serogroup B meningococcal disease.

12. *Haemophilus influenzae* type b (Hib) vaccination

- One dose of Hib vaccine should be administered to persons who have anatomical or functional asplenia or sickle cell disease or are undergoing elective splenectomy if they have not previously received Hib vaccine. Hib vaccination 14 or more days before splenectomy is suggested.
- Recipients of a hematopoietic stem cell transplant (HSCT) should be vaccinated with a 3-dose regimen 6–12 months after a successful transplant, regardless of vaccination history; at least 4 weeks should separate doses.
- Hib vaccine is not recommended for adults with HIV infection since their risk for Hib infection is low.

13. Immunocompromising conditions

- Inactivated vaccines (e.g., pneumococcal, meningococcal, and inactivated influenza vaccines) generally are acceptable and live vaccines generally should be avoided in persons with immune deficiencies or immunocompromising conditions. Information on specific conditions is available at www.cdc.gov/vaccines/hcp/acip-recs/index.html.

TABLE. Contraindications and precautions to commonly used vaccines in adults [1*†]

Vaccine	Contraindications	Precautions
Influenza, inactivated (IIV)[2]	• Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine; or to a vaccine component, including egg protein	• Moderate or severe acute illness with or without fever • History of Guillain-Barré Syndrome within 6 weeks of previous influenza vaccination • Adults with egg allergy of any severity may receive RIV; adults with hives-only allergy to eggs may receive IIV with additional safety measures[2]
Influenza, recombinant (RIV)	• Severe allergic reaction (e.g., anaphylaxis) after previous dose of RIV or to a vaccine component. RIV does not contain any egg protein[2]	• Moderate or severe acute illness with or without fever • History of Guillain-Barré Syndrome within 6 weeks of previous influenza vaccination
Influenza, live attenuated (LAIV)[2,3]	• Severe allergic reaction (e.g., anaphylaxis) to any component of the vaccine, or to a previous dose of any influenza vaccine • In addition, ACIP recommends that LAIV not be used in the following populations: — pregnant women — immunosuppressed adults — adults with egg allergy of any severity — adults who have taken influenza antiviral medications (amantadine, rimantadine, zanamivir, or oseltamivir) within the previous 48 hours; avoid use of these antiviral drugs for 14 days after vaccination	• Moderate or severe acute illness with or without fever. • History of Guillain-Barré Syndrome within 6 weeks of previous influenza vaccination • Asthma in persons aged 5 years and older • Other chronic medical conditions, e.g., other chronic lung diseases, chronic cardiovascular disease (excluding isolated hypertension), diabetes, chronic renal or hepatic disease, hematologic disease, neurologic disease, and metabolic disorders
Tetanus, diphtheria, pertussis (Tdap); tetanus, diphtheria (Td)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component • For pertussis-containing vaccines: encephalopathy (e.g., coma, decreased level of consciousness, or prolonged seizures) not attributable to another identifiable cause within 7 days of administration of a previous dose of Tdap, diphtheria and tetanus toxoids and pertussis (DTP), or diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine	• Moderate or severe acute illness with or without fever • Guillain-Barré Syndrome within 6 weeks after a previous dose of tetanus toxoid-containing vaccine • History of Arthus-type hypersensitivity reactions after a previous dose of tetanus or diphtheria toxoid-containing vaccine; defer vaccination until at least 10 years have elapsed since the last tetanus toxoid-containing vaccine • For pertussis-containing vaccines: progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized
Varicella[3]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component • Known severe immunodeficiency (e.g., from hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, or long-term immunosuppressive therapy,[4] or patients with human immunodeficiency virus [HIV] infection who are severely immunocompromised) • Pregnancy	• Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)[5] • Moderate or severe acute illness with or without fever • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination; avoid use of these antiviral drugs for 14 days after vaccination
Human papillomavirus (HPV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever • Pregnancy
Zoster[3]	• Severe allergic reaction (e.g., anaphylaxis) to a vaccine component • Known severe immunodeficiency (e.g., from hematologic and solid tumors, receipt of chemotherapy, or long-term immunosuppressive therapy,4 or patients with HIV infection who are severely immunocompromised) • Pregnancy	• Moderate or severe acute illness with or without fever • Receipt of specific antivirals (i.e., acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination; avoid use of these antiviral drugs for 14 days after vaccination
Measles, mumps, rubella (MMR)[3]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component • Known severe immunodeficiency (e.g., from hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, or long-term immunosuppressive therapy,[4] or patients with HIV infection who are severely immunocompromised) • Pregnancy	• Moderate or severe acute illness with or without fever • Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)[5] • History of thrombocytopenia or thrombocytopenic purpura • Need for tuberculin skin testing[6]
Pneumococcal conjugate (PCV13)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component, including to any vaccine containing diphtheria toxoid	• Moderate or severe acute illness with or without fever
Pneumococcal polysaccharide (PPSV23)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever
Hepatitis A	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever
Hepatitis B	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever
Meningococcal, conjugate (MenACWY); meningococcal, polysaccharide (MPSV4)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever
Meningococcal serogroup B (MenB)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever
Haemophilus influenzae Type b (Hib)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever

1. Vaccine package inserts and the full ACIP recommendations for these vaccines should be consulted for additional information on vaccine-related contraindications and precautions and for more information on vaccine excipients. Events or conditions listed as precautions should be reviewed carefully. Benefits of and risks for administering a specific vaccine to a person under these circumstances should be considered. If the risk from the vaccine is believed to outweigh the benefit, the vaccine should not be administered. If the benefit of vaccination is believed to outweigh the risk, the vaccine should be administered. A contraindication is a condition in a recipient that increases the chance of a serious adverse reaction. Therefore, a vaccine should not be administered when a contraindication is present.
2. For more information on use of influenza vaccines among persons with egg allergies and a complete list of conditions that CDC considers to be reasons to avoid receiving LAIV, see CDC. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP) — United States, 2015–16 Influenza Season. *MMWR* 2015;64(30):818-25.
3. LAIV, MMR, varicella, or zoster vaccines can be administered on the same day. If not administered on the same day, live vaccines should be separated by at least 28 days.
4. Immunosuppressive steroid dose is considered to be ≥2 weeks of daily receipt of 20 mg of prednisone or the equivalent. Vaccination should be deferred for at least 1 month after discontinuation of such therapy. Providers should consult ACIP recommendations for complete information on the use of specific live vaccines among persons on immune-suppressing medications or with immune suppression because of other reasons.
5. Vaccine should be deferred for the appropriate interval if replacement immune globulin products are being administered. See CDC. General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2011;60(No. RR-2). Available at www.cdc.gov/vaccines/pubs/pinkbook/index.html.
6. Measles vaccination might suppress tuberculin reactivity temporarily. Measles-containing vaccine may be administered on the same day as tuberculin skin testing. If testing cannot be performed until after the day of MMR vaccination, the test should be postponed for at least 4 weeks after the vaccination. If an urgent need exists to skin test, do so with the understanding that reactivity might be reduced by the vaccine.

* Adapted from CDC. Table 6. Contraindications and precautions to commonly used vaccines. General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices. MMWR 2011;60(No. RR-2):40–41 and from Hamborsky J, Kroger, A, Wolfe C, eds. Appendix A. Epidemiology and prevention of vaccine preventable diseases. 13th ed. Washington, DC: Public Health Foundation, 2015. Available at www.cdc.gov/vaccines/pubs/pinkbook/index.html.

† Regarding latex allergy, consult the package insert for any vaccine administered.

CS260933-D

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

Types of vaccine provided by HAAD

Types of vaccines provided by Health Authority of Abu Dhabi:

- Adult vaccine
- Travelers vaccine
- Hajj and Umrah vaccine
- Child vaccine
- School health vaccine

هيئة الصحة - أبوظبي
HEALTH AUTHORITY - ABU DHABI

الخدمات العلاجية الخارجية
Ambulatory Healthcare Services

عائلة صحية مجتمع صحي
Healthy family. Healthy community.

Types of vaccines for adults at risk:

1. Seasonal influenza (flu)
2. Pneumococcal polysaccharide 23 valent
3. Pneumococcal Congugate 13 valent
4. Haemophilus influenza type b (Hib)
5. Hepatitis A,B
6. Measles, Mumps,Rubella (MMR)
7. Rubella
8. Meningococcal ACWY135
9. Rabies
10. Tetanus,diphtheria, pertussis (Tdap)
11. Tetanus Toxoid (TT)
12. Varicella
13. Yellow fever
14. Typhoid

HAAD, MOH, DHA adult immunization guidelines

8.1. Recommended adults immunization

Td/ Tdap Vaccine

For the adult who did not vaccinated previously a primary course of 3 dose series of tetanus and diphtheria containing vaccines; usually Td, at 0, 1 and 6-12 month.

For incompletely vaccinated (i.e., less than 3 doses) adults, administer remaining doses.

Td booster dose is required every 10 years

For adults who have not received a dose of Tdap previously, one dose of Td should be replaced by Tdap.

Vaccine	Indication	Schedule
Tetanus Toxoid (TT)	▪ Post tetanus-prone wound	Single dose as booster

Vaccine	Indication	Schedule
Varicella	▪ **All unvaccinated healthcare professionals** who have no serologic proof of immunity, prior vaccination, or history of varicella disease or herpes zoster ▪ **Contacts** of a case which are defined as people who have: → Direct face to face contact with a symptomatic patient → Shared confined space in close proximity for a prolonged period of time, such as > 1hour, with a symptomatic patient or → Direct contact with respiratory, oral, or nasal secretions from a symptomatic patient	-Two doses, 4-8 weeks apart -Provide Varicella vaccine <u>within three days</u> , maximum is <u>five days</u> after **exposure** to chickenpox case

Vaccine	Indication	Schedule
Measles mumps, rubella (MMR)	• Premarital Program in case of unavailability of Rubella vaccine • Contacts of a case	Two doses, 4 weeks apart

Vaccine	Indication	Schedule
Seasonal Influenza (Flu)	• Hajj and Umrah pilgrims • All Adults ≥ 65years • < 65 years Adults at high risk which include the following : ✓ immunocompromising conditions ✓ **Diabetes** ✓ Chronic cardiovascular disease (except hypertension) ✓ Chronic lung disease(including **Asthma**) ✓ Chronic alcoholism ✓ Asplenia (including elective splenectomy and persistent complement component deficiencies) ✓ Chronic liver disease ✓ Kidney failure ,end stage renal disease, recipients of hemodialysis ✓ chronic alcoholism, smoking	**Single dose every year**, using annual recommended vaccine formulation

Vaccine	Indication	Schedule
Haemophilus influenzae type b (Hib)	The high risk group which include the following if they have not previously received Hib vaccine • sickle cell disease • leukemia • HIV infection • who have had a splenectomy	**Single dose** if they have not previously received Hib vaccine.

Vaccine	Indication	Schedule
Hepatitis B	• IV Drug user • Household contacts of Hepatitis B • cases/chronic carries • Post exposure immunoprophylaxis • Patients with chronic liver disease • Person beginning hemodialysis • **Diabetes Mellitus** type 1 and 2 up to age of 59 Years • Contacts of a case include: • Household members • Sexual contacts • Medical staff exposed to oral or respiratory secretions	Three doses at, 0, 1,6 months

Vaccine	Indication	Schedule
Hepatitis A	•Patients with Chronic liver disease •Persons who receive clotting factor concentrates •Outbreak control Contacts of a case include : •A person living in the same household as the index case or regularly sharing food or toilet facilities with the index case during the infectious period. include extended family members who frequently visit the household and child-minders and their families. •A person who has regularly eaten food prepared by the index case during the infectious period, or who ate food prepared by the index case on a single occasion during the infectious period if there is concern about the hygiene practices of the index case or if the index case had diarrhea at the time of food preparation. •Sexual contacts •The post exposure efficacy of hepatitis A vaccine is based on its use within 14 days of first symptom onset in the index case.	**Two Doses 6-12 months** apart **The post exposure** efficacy of hepatitis A vaccine is based on its use within 14 days of first symptom onset in the index

Meningococcal ACWY135	Schedule
• **Hajj and Umrah** pilgrims • Travelers to countries in meningitis belt • Asplenia (including elective splenectomy and persistent complement component deficiencies) • Microbiologists who are routinely exposed to isolates of N. meningitidis. • Close contacts	-Meningococcal **conjugate** vaccine quadrivalent is preferred for adults with any of the preceding indications who are 55 years old and younger; **(55 & ↓)** meningococcal **polysaccharide** vaccine is preferred for adults 56 years and older **(56 7 ↑)** -**Single dose** every **3 years** for meningococcal **poly saccharide** quadrivalent -Administer **2 doses** of meningococcal **conjugate** vaccine quadrivalent at least - 2 months apart to adults with functional asplenia or persistent complement deficiencies. -Administer a single dose of meningococcal vaccine to microbiologists routinely exposed to isolates of Neisseria meningitidis, and persons who travel to countries in which meningococcal disease is hyper endemic or epidemic. -Revaccination with meningococcal conjugate **every 5** years is recommended for adults previously vaccinated with quadrivalent conjugate or polysaccharide who remain at increased risk for infection

Vaccine	Indication	Schedule
Pneumococcal polysaccharide 23 Valent	•**All Adults ≥ 65years** without a history of Pneumococcal polysaccharide 23 Valent vaccination •Adults < 65 years at high risk which include the following : immunocompromising conditions •Diabetes •Chronic Cardiovascular disease(except hypertension) •Sickle cell anemia **•Chronic lung disease include asthma** •Chronic alcoholism • Asplenia •Chronic liver disease Kidney failure ,end stage renal disease, recipients of hemodialysis	**Single dose** for persons vaccinated at or after **age 65 years** The **second dose** required **5 years** after the first dose for persons received vaccine <65 years of age for any indication

Rabies	Persons with rabies-prone animal bite • Persons in high-risk occupational groups, such as veterinarians and their staff, animal handlers, rabies researchers, and certain laboratory workers • Travelers to high risk area (traveler who likely to get in contact with domestic animals particularly dogs and other rabies vectors)	- **Pre-exposure:** 3 doses at 0, 7, and 28 days, with periodic booster at 1 and 5 years. **- Post-exposure:** Previously unvaccinated people should receive 5 doses **at 0, 3, 7, and 14 and 28 days,** category III if not previously vaccinated needs HRIG in addition to the vaccine on 0 day, for specific conditions use 4 doses schedule 2-1-1 (refer to 7.13). • Previously vaccinated people should receive two doses at 0 and 3 days

Healthcare Professionals Vaccination Recommendation

HCP Vaccination Recommendation

Vaccine	Recommendation
Hepatitis B	▪ Give three dose series (0, 1, 6 months) by intramuscular injection. ▪ Obtain anti-HBs serologic testing 1–2 months after the third dose.
Influenza	▪ Give One dose of inactivated influenza vaccine annually By intramuscular injection.
Measles, mumps, rubella (MMR)	▪ Give two doses of MMR to healthcare professionals without serologic evidence of immunity or prior vaccination, 4 weeks apart by subcutaneous injection.

HCP Vaccination Recommendation

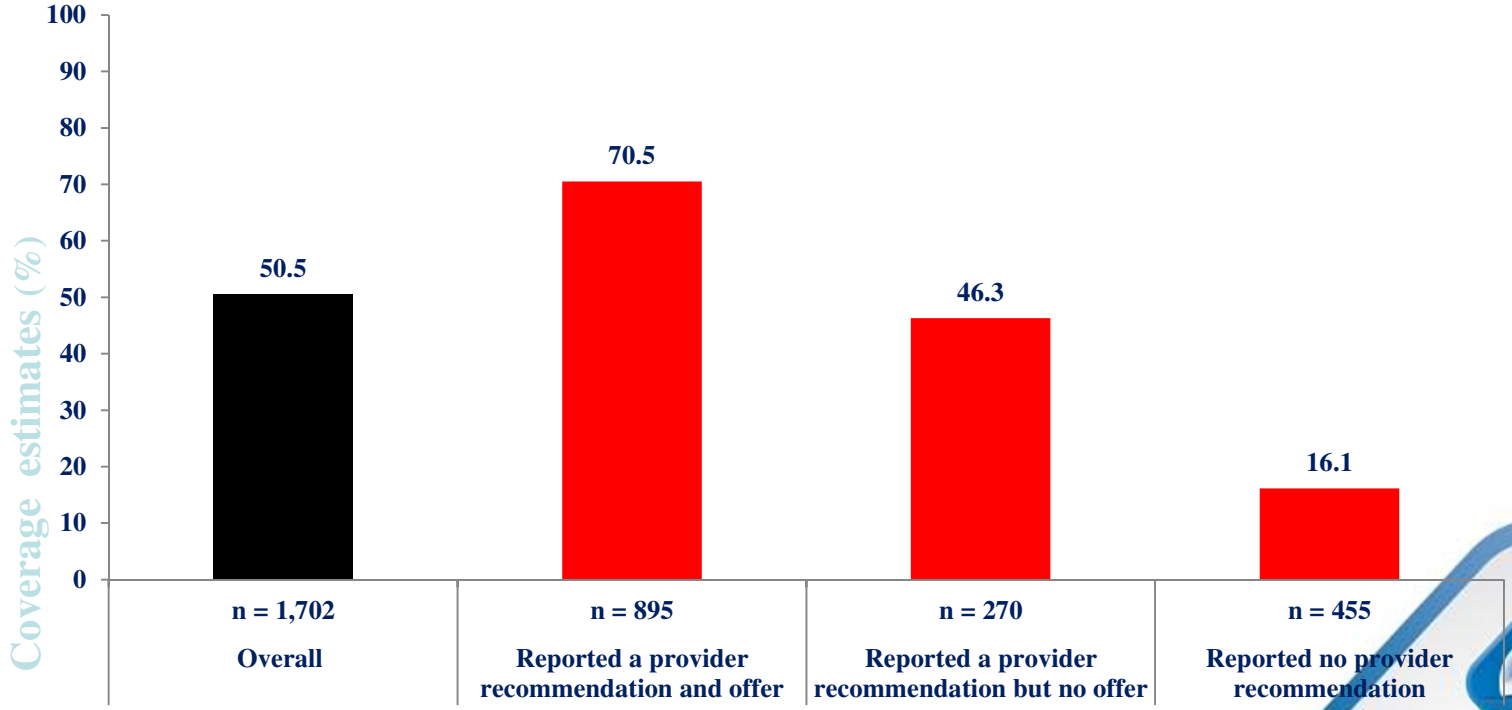
Vaccine	Recommendation
Varicella	• For healthcare professionals who have no serologic proof of immunity, prior vaccination, or history of varicella disease; give 2 doses of varicella vaccine, 4 weeks apart by subcutaneous injection.
Tetanus, Diphtheria , Pertussis (Tdap)	• Give a one-time dose of Tdap to healthcare professionals who have not received Tdap previously by intramuscular injection. ▪ Give Td boosters every 10 years thereafter.
Meningococcal	• Give one dose to microbiologists who are routinely exposed to isolates of *N. meningitidis*. ▪ Give Menactra (Meningococcal Conjugate ACYW-135)by intramuscular injection for adults who are 55 years old and younger and Mencevax (Polysaccharide Meningococcal ACYW135) by subcutaneous injection for adults 56 years and older.

Opportunities for Adult Immunization

- **Adults not aware of vaccines they need… but most patients will accept vaccines if recommended by trusted healthcare provider**
- **Healthcare providers for adults are busy and have competing priorities… but healthcare providers think immunizations are important for their patients**
- **Not all providers stock all vaccines for adults… but access to vaccines is increasing**
- **Adults frequently see multiple providers and recordkeeping is difficult… but state vaccine registries include adult immunizations**

Vaccination Coverage by Provider Recommendation and/or Offer

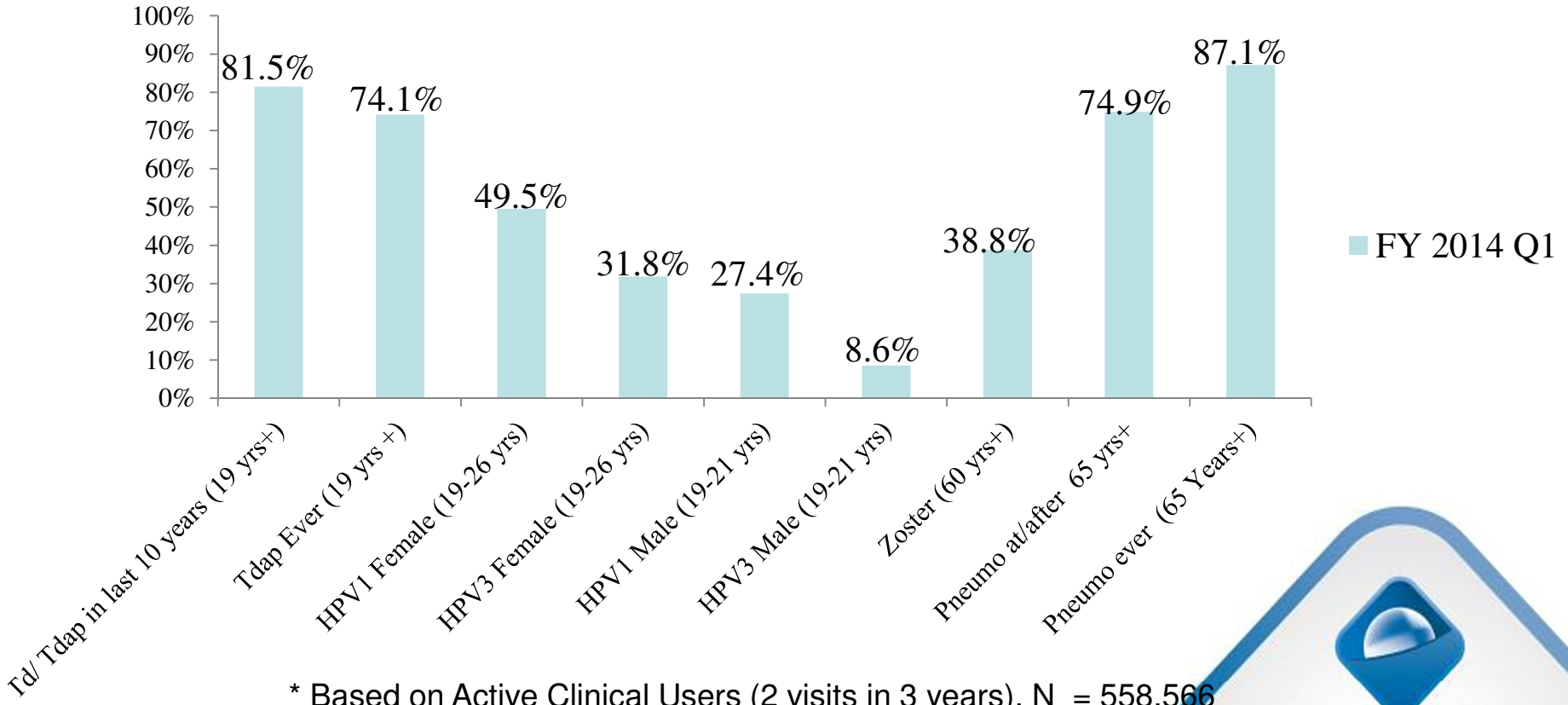
Influenza vaccination before and during pregnancy overall and by provider recommendation and offer* for influenza vaccination among women pregnant anytime between October 2012 -January 2013, Internet Panel Survey, 2012-13 Influenza Season



*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.

Indian Health Service
Leveraging Technology Data

IHS Adult Vaccination Coverage*
FY 2014 Q1 Reports 9 (through E.H.R. prompts)



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

Strategies for Health Departments to Improve Adult Immunizations

- **Determine community needs and vaccination capacity**
- **Identify and address barriers to adult vaccination**
- **Provide outreach and education to providers and the public**
- **Distribute patient and provider education materials.**
- **Develop and maintain partnerships with key stakeholders**

www.izsummitpartners.org/wp-content/uploads/2014/09/adult-tips.pdf

Intervention
Delivery

- **Bring vaccines to where people are**
- Make vaccination a front-end priority, rather than an afterthought, and appropriately delegate authority

Intervention
Implications for Practice

- Use of standing order programs for vaccination – systematic approach
  - Empower personnel to administer immunizations without a provider order
  - State Immunization Registries
- Assessment of practice level vaccination rates with feedback to staff members
- Widely accepted practice management resources
  - ICD-10 codes tied to computerized algorithm/rule for vaccine eligibility (better than broad categories of chronic diseases in normal paper standing orders)
- Implementing reminder-recall systems
  - Recall and reminder systems have resulted in increases of up to 20% in rates of vaccination against
    - Hepatitis B
    - Tetanus
    - Influenza
    - Pneumococcal disease

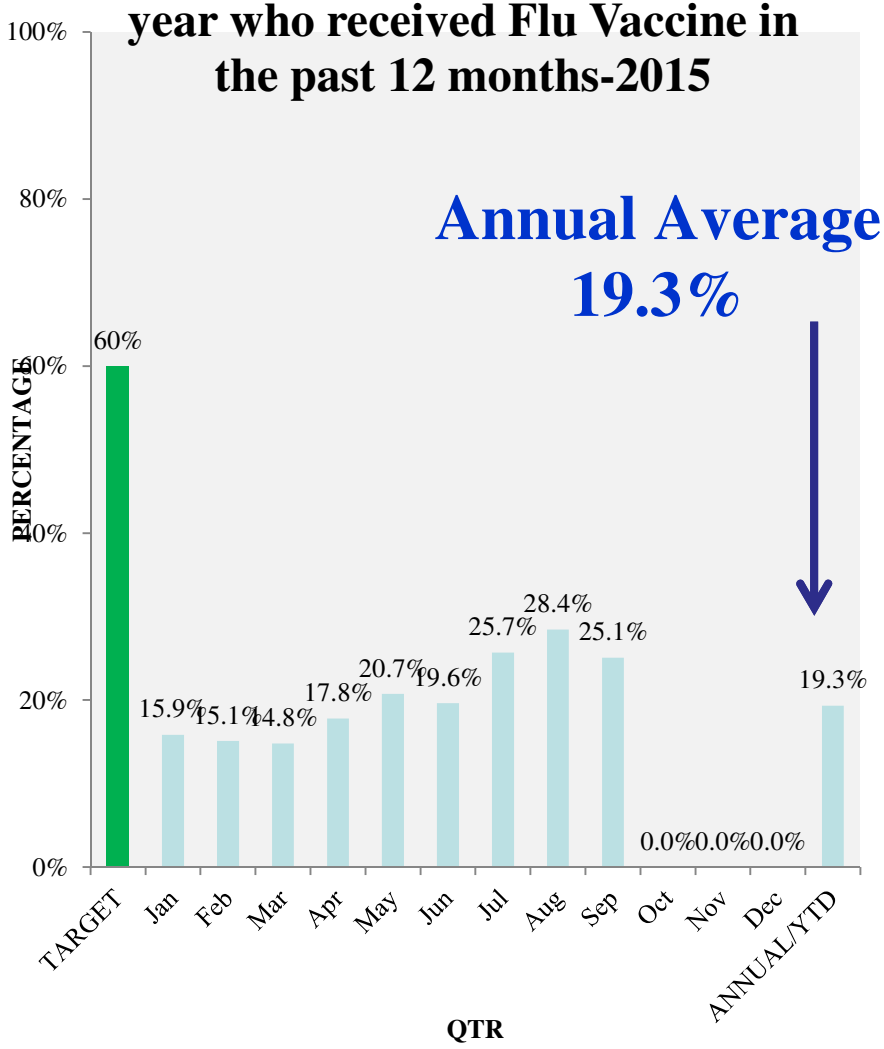
Identify and Address Barriers to Adult Immunization

- **Develop reminder/recall system**
- **Use of standing order programs for vaccination – systematic approach**
- **Audit level vaccination coverage with feedback to staff members**

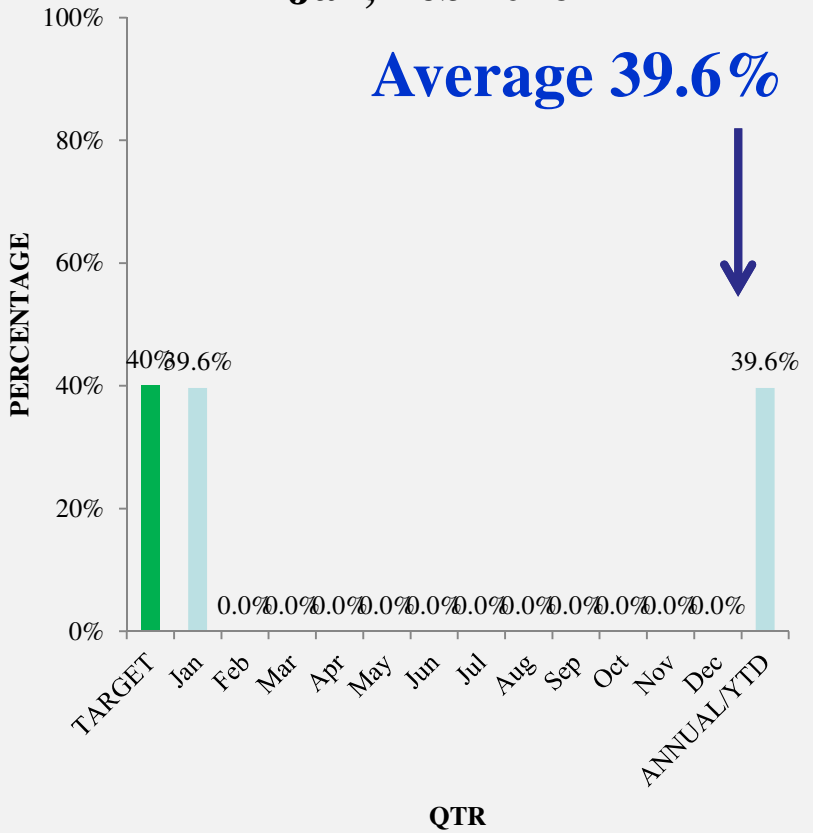
www.izsummitpartners.org/wp-content/uploads/2014/09/adult-tips.pdf


الخدمات العلاجية الخارجية
Ambulatory Healthcare Services
عائلة صحية، مجتمع صحي.
Healthy family. Healthy community.

% of patients with a least 2 diagnoses of asthma in the past year who received Flu Vaccine in the past 12 months-2015



% of patients with a least 2 diagnoses of asthma in the past year who received Flu Vaccine in Jan, Feb 2016

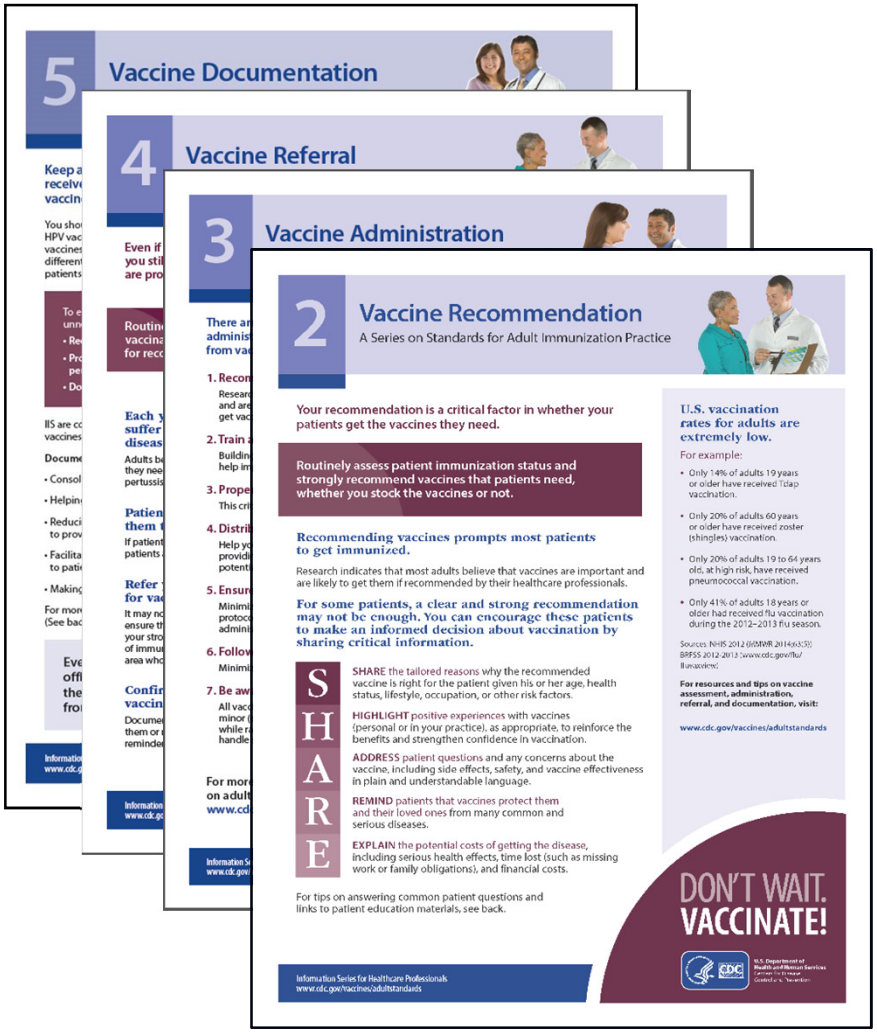


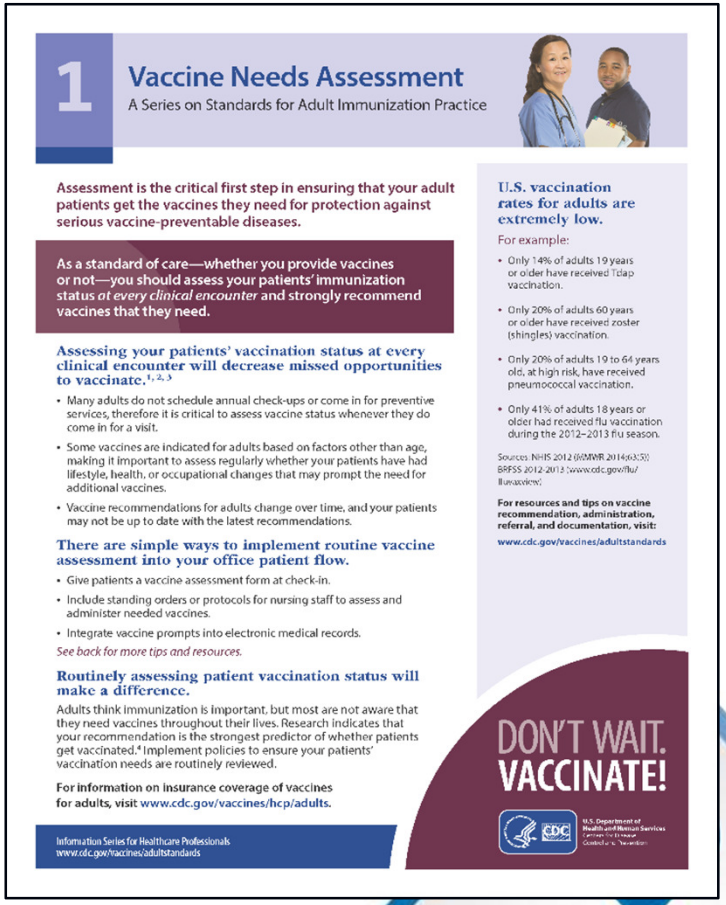
Interventions
Vaccine Education Programs

- Utilize published immunization resources

- **National Association of County & City Health Officials**
  - www.naccho.org/topics/HPDP/immunization/
- **Association of State and Territorial Health Officials**
  - www.astho.org/Programs/Immunization/
- **Association of Immunization Managers**
  - www.immunizationmanagers.org/
- **American Immunization Registry Association**
  - www.immregistries.org/
- **Centers for Disease Control and Prevention (CDC)**
  - www.cdc.gov/vaccines/hcp/adults
  - www.cdc.gov/vaccines/adults/index.html
- **Immunization Action Coalition (IAC)**
  - www.immunize.org/
- **National Foundation for Infectious Diseases (NFID)**
  - www.adultvaccination.org/
- **American College of Physicians**
  - http://immunization.acponline.org/

Series for Healthcare Providers on Implementing Standards





www.cdc.gov/vaccines/AdultStandards

Patient Education Materials - Handouts

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

Summary

Health dept. role in promoting the adult immunization

The four components of the standards are:

1. assess immunization status of all adult patients at every clinical encounter,
2. strongly recommend vaccines they need,
3. administer the needed vaccines or refer the patient to a provider who can, and
4. document vaccines received by the patient in the state vaccine registry.

Summary

- Immunization does not stop at childhood
- Prevention of infection by immunization is a lifelong process
- Health Care Practitioners need to Empower, Educate, Advocate and Recommend particularly for Adult vaccination.

YES, We have to:

- Clinicians must educate themselves on applicable adult vaccines so they can make valid recommendations to patients

References

1. **National Immunization Guidelines** - Ministry of Health, Health Authority - Abu Dhabi, Dubai Health Authority, Chapter 8, Adult Immunization (pages 81-90)
2. ***Vaccination of Adults at high rusk od infectioes diseases, Circular No. (CEO 37 / 12), July 26th 2012***
3. Christina M. Hillson, Joshua H. Barash, and Edward M. Buchanan; **Adult Vaccination;** Primary Care: Clinics in Office Practice, 2011-12-01, Volume 38, Issue 4, Pages 611-632; Copyright © © 2011 Elsevier Inc.
4. Carolyn B. Bridges, MD,1 Laura P. Hurley, MD, MPH,2,3 Walter W. Williams, MD, MPH,1; Aparna Ramakrishnan, MA, MSW,4 Anna K. Dean, MPH,1,5 Amy V. Groom, MPH1; Meeting the Challenges of Immunizing Adults; *accessed September 2015*

References

5. Jessica L. MacLeod, APRN; Adult & Gerontology Nurse Practitioner (AGNP); The Evolving World of Adult Vaccines, New Indications; VT Immunization Conference; October 28, 2011

6. Thomas G. Irons, MD, Professor of Pediatrics, The Brody School of Medicine at East Carolina University, Greenville, North Carolina; Barriers to Adult Immunizations
Getting from “No!” to “Yes!”; accessed September 2015

Resources

- National Association of County & City Health Officials
  - www.naccho.org/topics/HPDP/immunization/
- Association of State and Territorial Health Officials
  - www.astho.org/Programs/Immunization/
- Association of Immunization Managers
  - www.immunizationmanagers.org/
- American Immunization Registry Association
  - www.immregistries.org/
- Centers for Disease Control and Prevention (CDC)
  - www.cdc.gov/vaccines/hcp/adults
  - www.cdc.gov/vaccines/adults/index.html
- Immunization Action Coalition (IAC)
  - www.immunize.org/
- National Foundation for Infectious Diseases (NFID)
  - www.adultvaccination.org/
- American College of Physicians
  - http://immunization.acponline.org/

"Let's start afresh today,
and do the good things we didn't do yesterday,
let's vaccinate all our adult patients'
whenever it is indicated"

Litty Varghese

You can contact me for further assistance in vaccination

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