



Immunizations for Patients with Diabetes

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Routine Adult Immunization Recommendations

- Human Papillomavirus Vaccine (HPV)
 - Females 19-26 years
 - Males 19-21 years
- TD
 - Booster every 10 years
- Tdap
 - 1 dose
- Zoster
 - 60 years
- Influenza
 - Annually
- Pneumococcal polysaccharide, 23-valent (PPSV23, Pneumo-PS, or Pneumovax®)
 - 65 years
 - May start earlier for certain high risk populations – e.g., AI/AN in certain geographic regions
- Pneumococcal conjugate vaccine, 13-valent (PCV13 or Prevnar13®)
 - 65 years

Adult Vaccine Schedule: <http://www.cdc.gov/vaccines/schedules/easy-to-read/adult.html>

2016 Recommended Immunizations for Adults

INFORMATION FOR ADULT PATIENTS

2016 Recommended Immunizations for Adults: By Health Condition

If you have this health condition, talk to your healthcare professional about these vaccines

If you have this health condition,	Flu <i>Influenza</i>	Td/Tdap Tetanus, diphtheria, pertussis	Shingles <i>Zoster</i>	Pneumococcal		Meningococcal		MMR Measles, mumps, rubella	HPV <i>Human papillomavirus</i>		Chickenpox <i>Varicella</i>	Hepatitis A	Hepatitis B	Hib <i>Haemophilus influenzae type b</i>
				PCV13	PPSV23	MenACWY or MPSV4	MenB		for women	for men				
Pregnancy	Green	Green	Light Blue	Green	Green	Green	Green	Green	Green	Green	Light Blue	Green	Green	Green
Weakened Immune System	Green	Green	Light Blue	Green	Green	Green	Green	Light Blue	Green	Green	Light Blue	Green	Green	Green
HIV: CD4 count less than 200	Green	Green	Light Blue	Green	Green	Green	Green	Light Blue	Green	Green	Light Blue	Green	Green	Green
HIV: CD4 count 200 or greater	Green	Green	Light Blue	Green	Green	Green	Green	Green	Green	Green	Light Blue	Green	Green	Green
Kidney disease or poor kidney function	Green	Green	Light Blue	Green	Green	Green	Green	Green	Green	Green	Light Blue	Green	Green	Green
Asplenia (if you do not have a spleen or if it does not work well)	Green	Green	Light Blue	Green	Green	Green	Green	Green	Green	Green	Light Blue	Green	Green	Green
Heart disease Chronic lung disease Chronic alcoholism	Green	Green	Light Blue	Green	Green	Green	Green	Green	Green	Green	Light Blue	Green	Green	Green
Diabetes (Type 1 or Type 2)	Green	Green	Light Blue	Green	Green	Green	Green	Green	Green	Green	Light Blue	Green	Green	Green
Chronic Liver Disease	Green	Green	Light Blue	Green	Green	Green	Green	Green	Green	Green	Light Blue	Green	Green	Green

More Information:

- Green:** You should get flu vaccine every year.
- Green:** You should get a Td booster every 10 years. You also need 1 dose of Tdap vaccine. Women should get Tdap vaccine during every pregnancy.
- Light Blue:** You should get shingles vaccine if you are age 60 years or older, even if you have had shingles before.
- Green:** You should get 1 dose of PCV13 and at least 1 dose of PPSV23 depending on your age and health condition.
- Light Blue:** You should get this vaccine if you did not get it when you were a child.
- Green:** You should get HPV vaccine if you are a woman through age 26 years or a man through age 21 years and did not already complete the series.
- Light Blue:** You should get Hib vaccine if you do not have a spleen, have sickle cell disease, or received a bone marrow transplant.

For more information, call 1-800-CDC-INFO (1-800-232-4636) or visit www.cdc.gov/vaccines

Recommended For You: This vaccine is recommended for you unless your healthcare professional tells you that you cannot safely receive it or that you do not need it.

May Be Recommended For You: This vaccine is recommended for you if you have certain other risk factors due to your age, health, job, or lifestyle that are not listed here. Talk to your healthcare professional to see if you need this vaccine.

YOU SHOULD NOT GET THIS VACCINE



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

CS262412

Immunizations for those with Diabetes

- Universally recommended, but particularly important:
 - Influenza
- Recommended specifically because of diabetes:
 - Pneumococcal Polysaccharide, 23-valent (PPSV23)
 - Hepatitis B

Pneumonia and Influenza

- American Indian and Alaska Native people are almost 2 times more likely to die from pneumonia and influenza than non-Hispanic whites ¹
- Significant variation by region and age group
- During the 2009 H1N1 influenza pandemic, AI/AN people were 4 times more likely to die from influenza-related complications than other race groups ²
- Reasons for this disparity include a higher rate of chronic medical conditions, including DIABETES

1. **Pneumonia and Influenza Mortality Among American Indian and Alaska Native People, 1990–2009.**
<http://ajph.aphapublications.org/action/showMultipleAbstracts?mailPageTitle=Advanced+Search&href=%2Faction%2FdoSearch%3FAIField%3Damy%2Bgroom&AIField=amy+groom&target=default&startPage=0&doi=10.2105%2FAJPH.2013.301740>

2. **Deaths Related to 2009 Pandemic Influenza A (H1N1) Among American Indian/Alaska Natives --- 12 States, 2009**
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5848a1.htm>

Influenza Vaccine recommendations

- Influenza – annual influenza vaccine for everyone 6 months and older

**I KEEP THE CIRCLE STRONG.
I GET MY FLU VACCINE.
DO YOU?**

As Native American people, we need to keep our circle protected and strong.
It is up to **EACH AND EVERY ONE OF US** to make sure that our loved ones are protected from the dangers of the flu.
GET YOUR FLU VACCINE TODAY.
Check out cdc.gov/flu for more information.

The flu is a dangerous disease — it should never be taken lightly.	Getting a flu vaccine every year is the best way to protect yourself and your family from the flu.	Talk to your doctor or other provider about getting a flu vaccine today.
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GREAT PLAINS TRIBAL CHAIRMEN'S HEALTH BOARD
NORTHERN PLAINS TRIBAL EPIDEMIOLOGY CENTER
1770 Broad Road, Rapid City, SD 57702 • (605) 669-7211 • (605) 669-7211 • 1922 • www.gptchb.org

**ONE PROBLEM I CAN'T AFFORD TO HAVE?
THE FLU.
I GET MY FLU VACCINE.
DO YOU?**

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Influenza Vaccine Recommendations: <http://www.cdc.gov/mmwr/volumes/65/rr/rr6505a1.htm>

Posters: <http://nptec.gptchb.org/public-health-resources/national-vaccination-project/>

Pneumococcal Vaccines

- Pneumococcal Polysaccharide, 23-valent
 - PPSV23, Pneumo-PS, or Pneumovax[®]
- Pneumococcal Conjugate, 13-valent
 - PCV13 or Prevnar13[®]

Pneumococcal Vaccine Recommendations:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5934a3.htm>



PCV13 for Adults

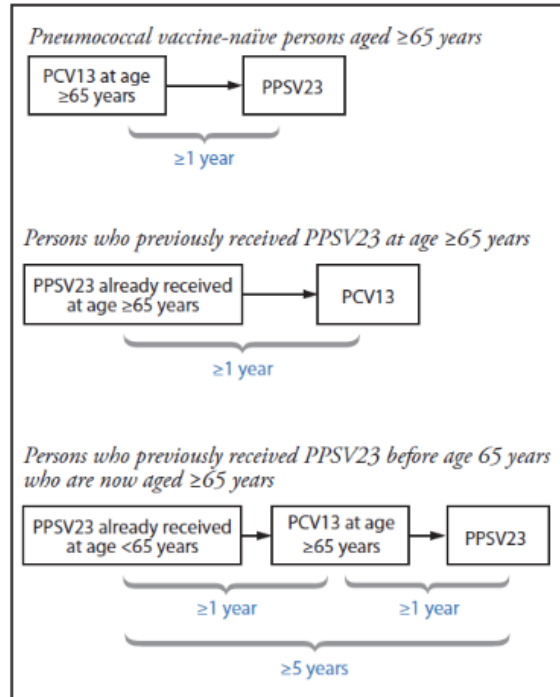
- PCV13 is recommended for all adults 65 years and older (***New in 2014***)
- The interval between PCV13 and PPSV23 is 1 year

PCV13 recommendations for adults:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6434a4.htm>

Recommended Intervals for Sequential Use of PCV13 and PPSV23

BOX. Recommended intervals for sequential use of PCV13 and PPSV23 for immunocompetent adults aged ≥ 65 years — Advisory Committee on Immunization Practices, United States



Abbreviations: PCV13 = 13-valent pneumococcal conjugate vaccine; PPSV23 = 23-valent pneumococcal polysaccharide vaccine.

Notes: For adults aged ≥ 65 years with immunocompromising conditions, functional or anatomic asplenia, cerebrospinal fluid leaks, or cochlear implants, the recommended interval between PCV13 followed by PPSV23 is ≥ 8 weeks. For those for who previously received PPSV23 when aged < 65 years and for whom an additional dose of PPSV23 is indicated when aged ≥ 65 years, this subsequent PPSV23 dose should be given ≥ 1 year after PCV13 and ≥ 5 years after the most recent dose of PPSV23.

Alternate Text: The above box outlines the Advisory Committee on Immunization Practices recommended intervals for sequential use of 13-valent pneumococcal conjugate vaccine and 23-valent pneumococcal polysaccharide vaccine for immunocompetent adults aged ≥ 65 years in the United States.

Excerpt from PCV13 recommendations for adults:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6434a4.htm>

PCV13 for Adults < 65 years

- PCV13 is recommended for adults < 65 years with immune-compromising conditions
- These include:
 - Cerebrospinal fluid leak
 - Cochlear implant
 - Sickle cell disease/other hemaglobinopathy
 - Congenital or acquired asplenia
 - Congenital or acquired immunodeficiency
 - HIV
 - Chronic renal failure
 - Nephrotic Syndrome
 - Leukemia
 - Lymphoma
 - Hodgkin's Disease
 - Generalized malignancy
 - Iatrogenic immunosuppression
 - Solid organ transplant
 - Multiple myeloma
- Diabetes is NOT considered an immune-compromising condition for this vaccine

PCV13 recommendations for adults:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6434a4.htm>

PPSV23 for Adults

- Routine: One dose at 65 years and older
 - PCV13 should be received first
- High Risk: < 65 years with high risk conditions
 - Includes diabetes
 - PPSV23 should be administered at time of diagnosis
- Patients who receive PPSV23 before 65 years of age should receive one booster dose at 65 years of age, at least 5 years after last dose

Pneumococcal Vaccine Recommendations:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5934a3.htm>

Risk Factors for PPSV23

Condition	ICD9	ICD10
HIV Infection	042, 042.0-043.9 (old codes), 044.9 (old code), 079.53, V08	B20, B52, B97.35, Z21
Diabetes	250.00-250.93	E08.2*, E09.2*, E10.*-E13.*
Chronic alcoholism	303.90, 303.91	F10.20, F10.220-F10.29)
Congestive Heart Failure	428.0-428.9, 429.2	I50.1, I50.20, I50.22-I50.30, I50.32-I50.40, I50.42-I50.9
Emphysema	492.0-492.8	J43.*
Asthma	493.00-493.91	J45.21-J45.902
Bronchiectasis, CLD, COPD	494.-496.	J44.*, J47.*)
Pneumoconioses	501.-505.	J60-J64, J66.8-J67.6, J67.8-J67.9
Chronic Liver Disease	571.0-571.9	K70.11-K70.41, K73.0-K74.5, K74.69, K75.81
Nephrotic Syndrome	581.0-581.9	N02.*, N04.*, N08
Renal Failure	585.6, 585.9	N18.6-N19
Injury to spleen	865.00-865.19	
Transplant	996.80-996.89	T86.00-T86.819, T86.83*, T86.850-T86.899, Z48.21-Z48.280, Z48.290, Z94.0-Z94.4, Z94.6, Z94.81-Z94.84, Z95.3, Z95.4
Kidney Transplant	V42.0-V42.89	
Chemotherapy	V58.1	Z51.11, Z51.12
Chemotherapy follow-up	V67.2	Z08

PCV13 for Children

- Routine: All children < 5 years of age
 - 4 doses: 2,4,6, 12-15 months
 - Number of doses depends on age of receipt
 - Healthy children 2-5 years months with no PCV13 receive 1 dose
 - High risk* children 2-5 years who receive incomplete PCV13 series need 1 or 2 doses depending on prior doses
- * chronic heart disease (particularly cyanotic congenital heart disease and cardiac failure); chronic lung disease (including asthma if treated with high-dose oral corticosteroid therapy); **diabetes mellitus**; cerebrospinal fluid leak; cochlear implant; sickle cell disease and other hemoglobinopathies; anatomic or functional asplenia; HIV infection; chronic renal failure; nephrotic syndrome; diseases associated with treatment with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas, and Hodgkin disease; solid organ transplantation; or congenital immunodeficiency:
- PCV13 for children 6-18 years for highest risk only
 - Anatomic asplenia
 - Immuno-compromising conditions (e.g. HIV)
 - Cochlear implant
 - CSF Leak

Childhood Schedule: <http://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-combined-schedule-bw.pdf>

PPSV23 for Children

- No routine use of PPSV23 in children
- High risk* children 2 years and older should receive a dose of PPSV23
 - *Sickle cell, asplenia, chronic cardiac, pulmonary or renal disease, **diabetes**, CSF leaks, HIV, immunosuppression, transplant, cochlear implant
- PPSV23 should be given after all recommended pneumococcal conjugate 13-valent (PCV13) recommended doses
- Give PPSV23 at least 8 weeks after last dose of PCV13
- No re-vaccination for children with diabetes
 - Receive additional dose at 65 years of age

Childhood Schedule: <http://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-combined-schedule-bw.pdf>

Hepatitis B in Patients with Diabetes

- Hepatitis B virus (HBV) causes acute and chronic infection of the liver
- Outbreaks in long term care facilities related to adults with diabetes receiving assistance with glucose monitoring
- Risk of acute hepatitis b infection 2.1 times higher among adults with diabetes vs. those without
- Higher seroprevalence of antibody to hepatitis B core antigen (indicative of past or present HBV infection) among adults with diabetes compared with those without diabetes

Hepatitis B recommendations for people with diabetes:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6050a4.htm>

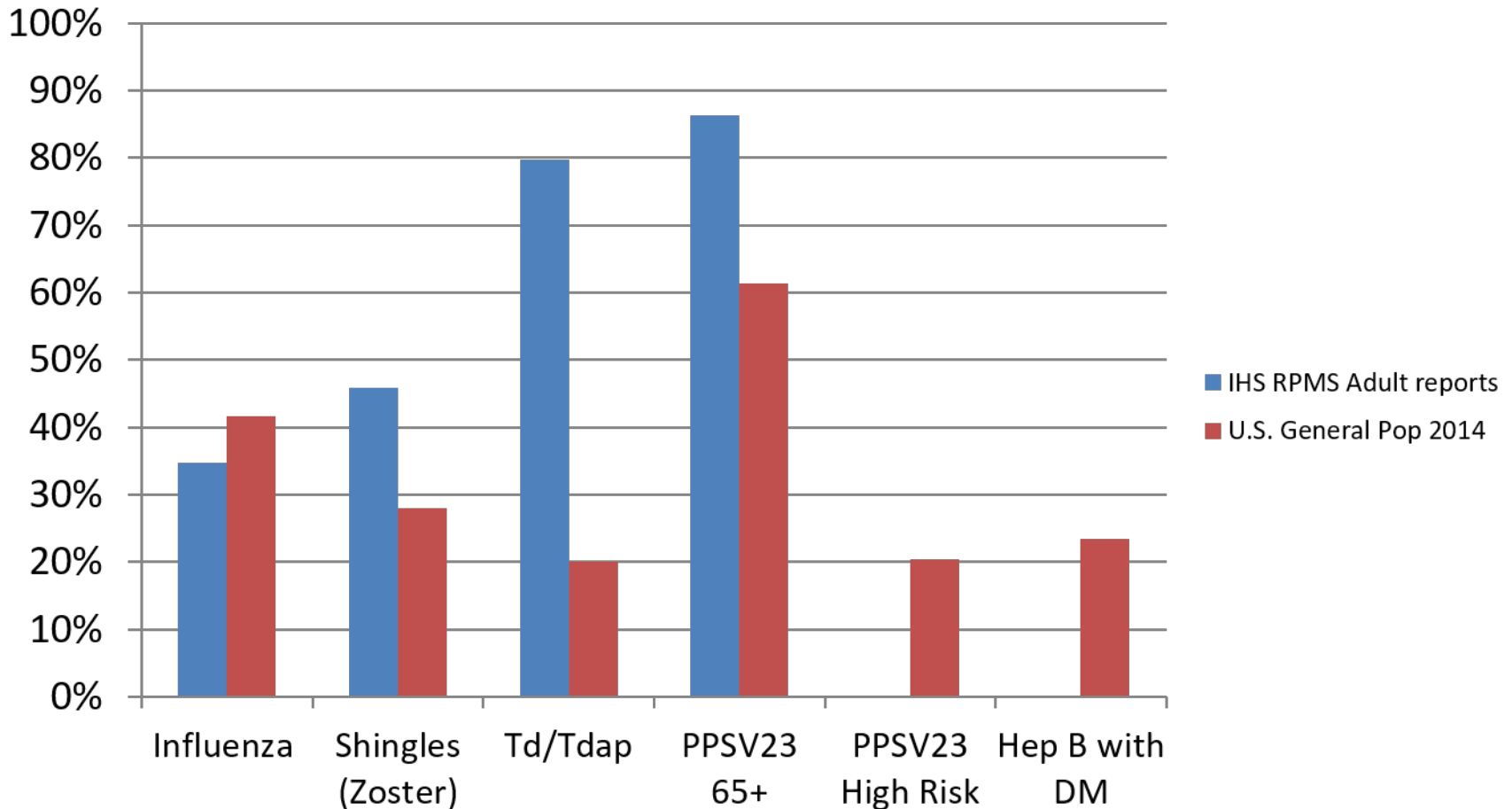
Hepatitis B Vaccine Recommendation (2011)

- Hepatitis B vaccination should be administered to unvaccinated adults with diabetes mellitus aged 19 through 59 years
- Hepatitis B vaccination may be administered at the discretion of the treating clinician to unvaccinated adults with diabetes mellitus who are aged ≥ 60 years

Hepatitis B recommendations for people with diabetes:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6050a4.htm>

2014 Vaccine Coverage

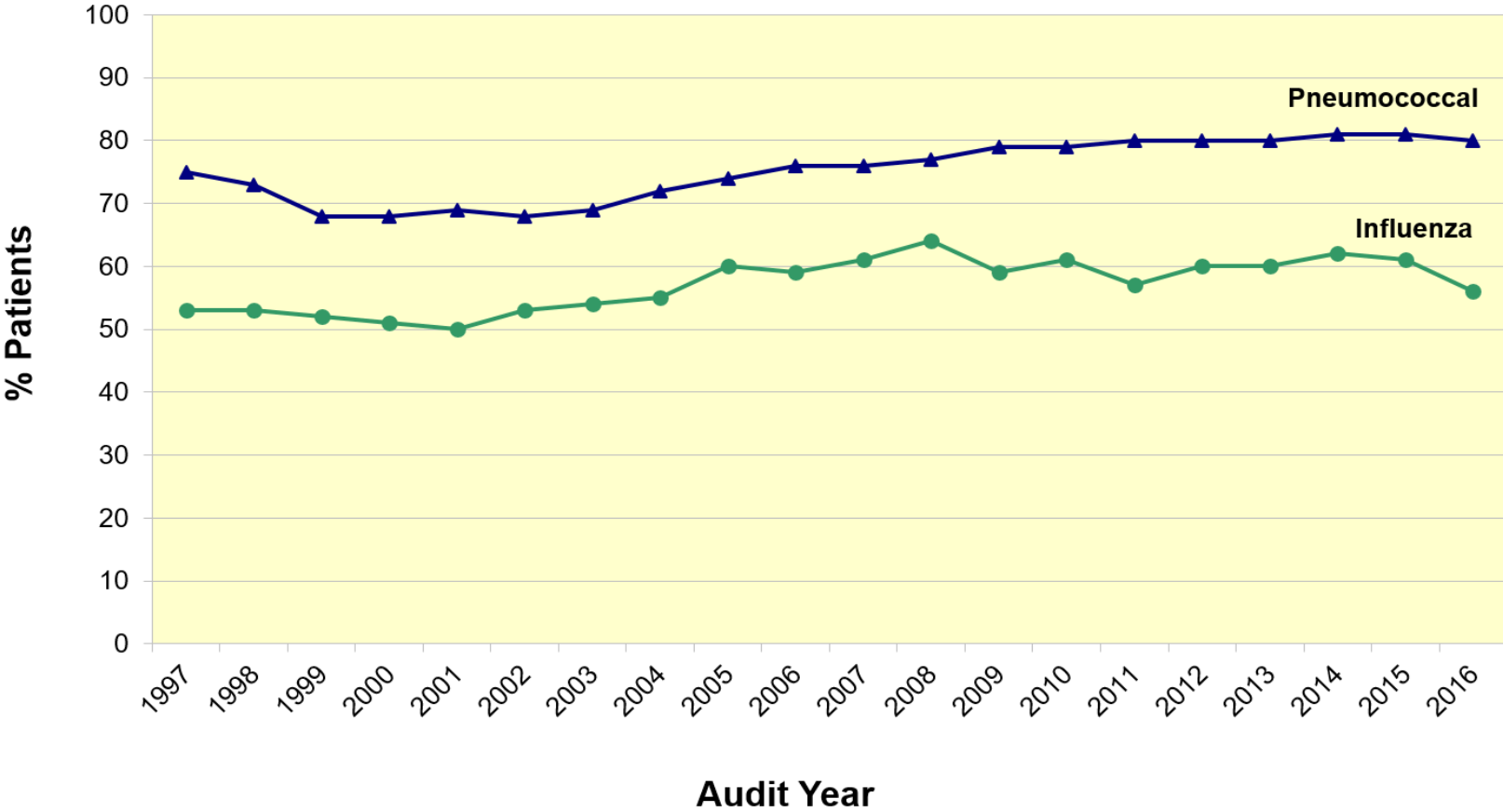


U.S. Data: CDC MMWR. <http://www.cdc.gov/mmwr/volumes/65/ss/ss6501a1.htm>

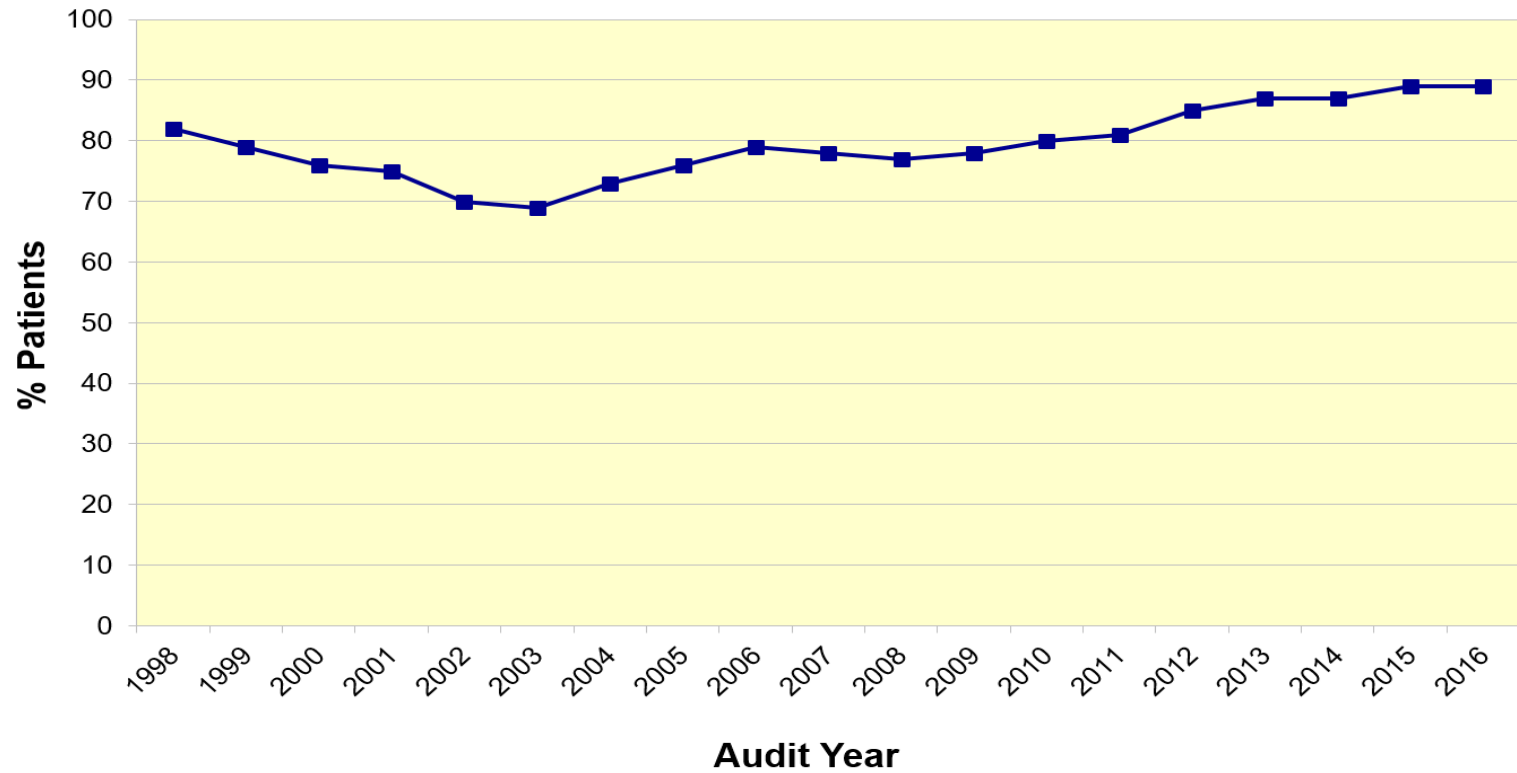
IHS Data: Immunization Coverage reports. https://www.ihs.gov/epi/index.cfm?module=epi_vaccine_reports

Data sources may not be directly comparable

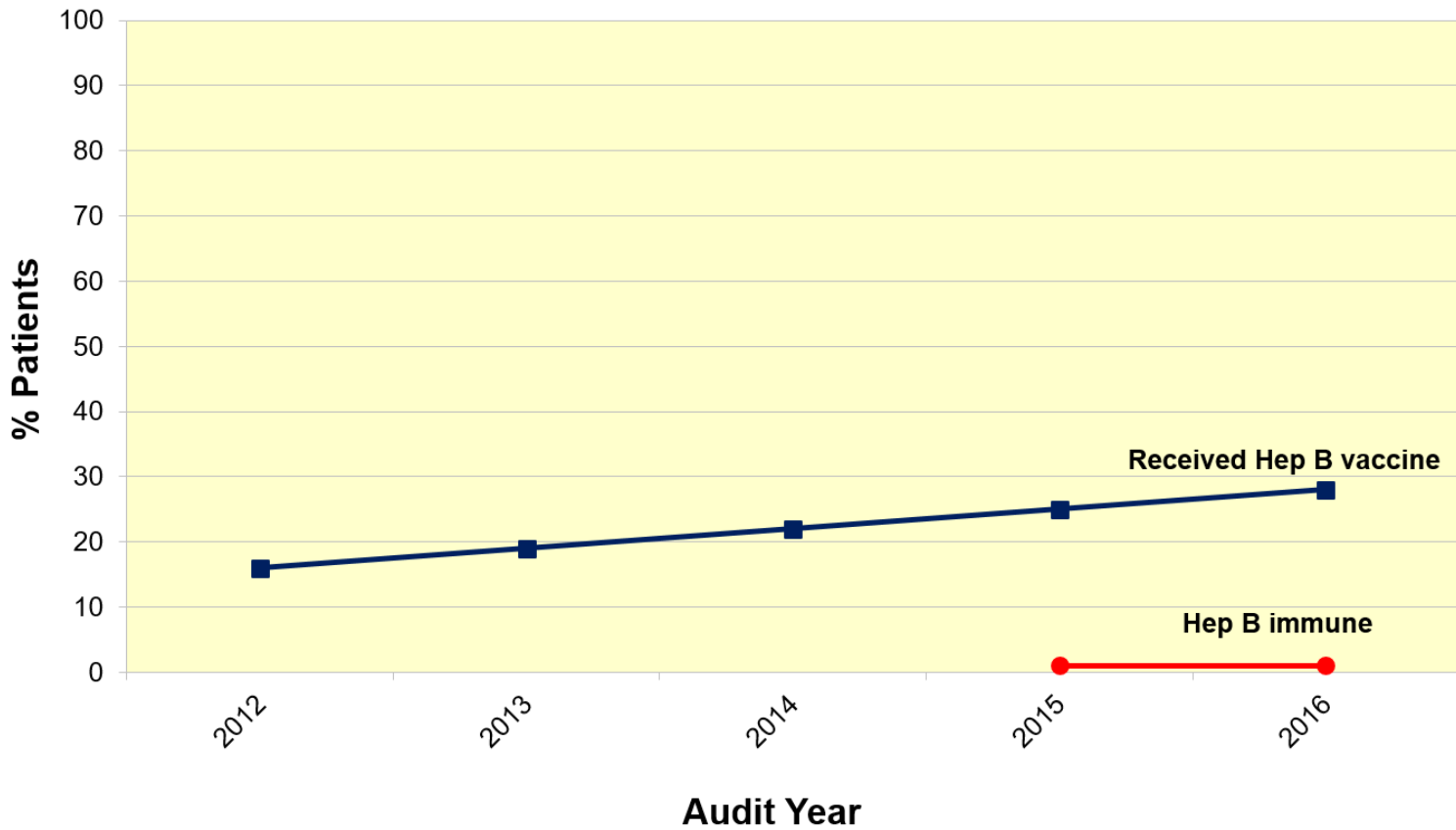
Immunizations 1997-2016



Td/Tdap in Past 10 Years 1998-2016



Hepatitis B Vaccine 2012-2016





**SO WHAT CAN WE DO TO MAKE SURE
OUR PATIENTS' ARE VACCINATED?**

EHR/RPMS Tools

- Clinical Decision Support for Immunizations
 - Shows which vaccines patients are due for
 - Takes into account minimum intervals and ages
 - All routine, AGE-BASED recommendations
- Optional Reminders – Must be turned on
 - PPSV23 for high risk
 - ***Hepatitis B for adults 19-59 years with Diabetes***

RPMS Immunization Package

- Lists and Letters in the RPMS Immunization package
 - Only available in the roll and scroll environment (NOT EHR)
 - Can be used to generate lists of patients who received or are due for specific vaccines for reminder/recall efforts
 - Can be used in conjunction with QMAN

Summary of Tools and Resources

- Clinical Decision Support/Reminders in EHR
 - PPSV23 and Hep B for patients with diabetes – must be turned on in the Immunization Package
- RPMS Immunization package
 - List and Letters to identify patients due for vaccines
 - Send reminder letters
- QMAN
 - Develop a template to identify patients with diabetes
 - Can use in the Immunization Package to identify vaccine needs for patients with diabetes

Resources

- CDC vaccine recommendations
 - <http://www.cdc.gov/vaccines/hcp/acip-recs/index.html>
- IHS RPMS Immunization Package Resources
 - http://www.ihs.gov/epi/index.cfm?module=epi_vaccine_resources
- IHS Immunization Program
 - Amy.Groom@ihs.gov