AETC AIDS Education & Training Center Program Southeast

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Immunizations to Consider in Adult HIV Patients

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Disclosures

- The speaker does not have any financial relationships with commercial entities to disclose.
- The speaker will not discuss any off-label use or investigational product during the program.

This slide set has been peer-reviewed to ensure that there are no conflicts of interest represented in the presentation.

Objectives

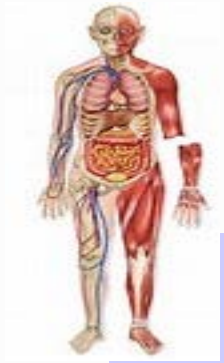
- Discuss the current immunization recommendations by the CDC Advisory Committee on Immunization Practices (ACIP) for adult HIV patients
- Discuss upcoming changes in the immunization schedule
- Review data supporting the use of meningococcal and pneumococcal vaccines
- Examine the use of Herpes zoster vaccine in HIV patients
- Describe Medicare and Medicaid coverage of immunizations

Vaccines: issues to consider

- Prevention of mortality and morbidity
- Vaccine schedule
- Injected, spray, oral
- Live attenuated, inactivated
- Immune response/CD4
- Costs, insurance

The compromised host

- Defects in cell mediated immunity
- B cell dysfunction
- Suboptimal humoral immune response



Immune Response

	Humoral-Mediated Immunity	Cell-Mediated Immunity
Mechanism	Antibody-mediated	Cell-mediated
Cell Type	B Lymphocytes	T Lymphocytes
Mode of action	Antibodies circulating in serum	Direct cell-to-cell contact or secreted soluble products (e.g. cytokines)
Purpose	Primary defense against extracellular pathogens: extracellular bacteria, circulating virus	Primary defense against intracellular pathogens: viruses and fungi, intracellular bacteria, (also tumor antigens, and graft rejection)

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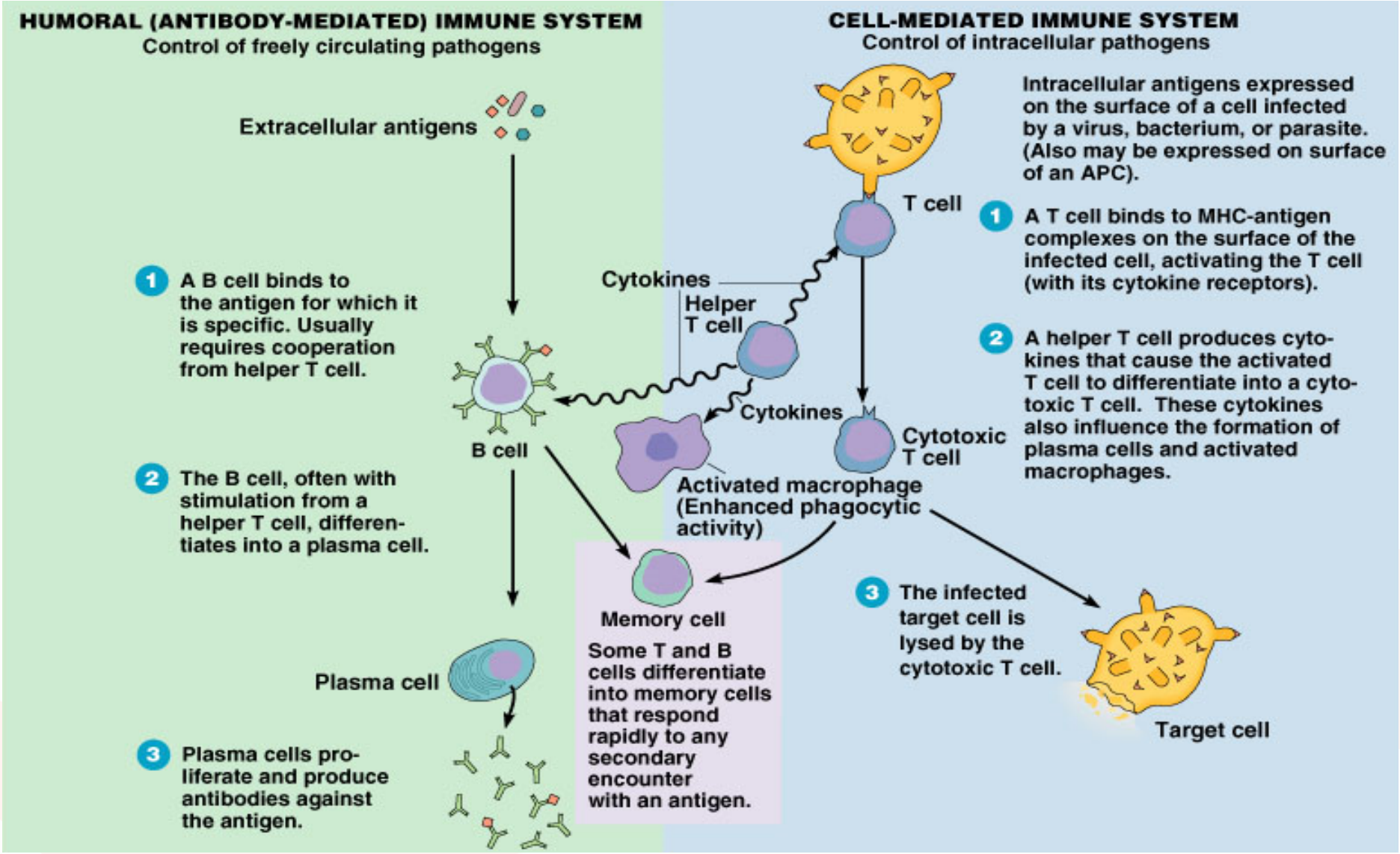


http://classes.midlandstech.edu/carterp/Courses/bio225/chap17/17-19_Duality_1.jpg

Classification of Vaccines

- Live attenuated
  - viral
  - bacterial
- Inactivated

Inactivated Vaccines

- Whole
  - viruses
  - bacteria
- Fractional
  - protein-based
    - toxoid
    - subunit
  - polysaccharide-based
    - pure
    - conjugate

https://www.cdc.gov/vaccines/pubs/pinkbook/downloads/prinvac.pdf

Vaccine Types

Live, attenuated vaccines (LAV):
Contains a weakened but live form of a disease-causing microbe that can trigger an immune response. The attenuated (weakened) microbe typically does not cause the disease.

Inactivated vaccines:
Made from microbes that have been killed with chemicals, heat, or radiation. There is no risk that an inactivated vaccine can cause disease from infection.

Inactivated Polysaccharide Vaccines: pure and conjugate

Pure Polysaccharide:

Subunit vaccine composed of chains of sugar molecules that make up the surface capsule of certain bacteria

Conjugate Polysaccharide:

Polysaccharide is chemically combined with a protein molecule (antigen/toxoid) to increase potency

Polysaccharide Vaccines

Pure polysaccharide

- pneumococcal
- meningococcal
- *Salmonella* Typhi (Vi)

Conjugate polysaccharide

- *Haemophilus influenzae* type b (Hib)
- pneumococcal
- meningococcal

https://www.cdc.gov/vaccines/pubs/pinkbook/downloads/prinvac.pdf

Live Vaccines

Bacteria	Viruses
Tuberculosis (BCG)	Oral Polio Vaccine (OPV)
	Measles
	Yellow Fever
	Varicella/Herpes Zoster
	~~Live attenuated flu vaccine (LAIV)~~

CDC Recommended Immunizations for Adult HIV Patients

- Hepatitis B
- Influenza
- Pneumococcal
- Tetanus, diphtheria, and pertussis (Tdap)
- Human papillomavirus (HPV)
- (Meningococcal)

HIV: Contraindicated if CD4 <200

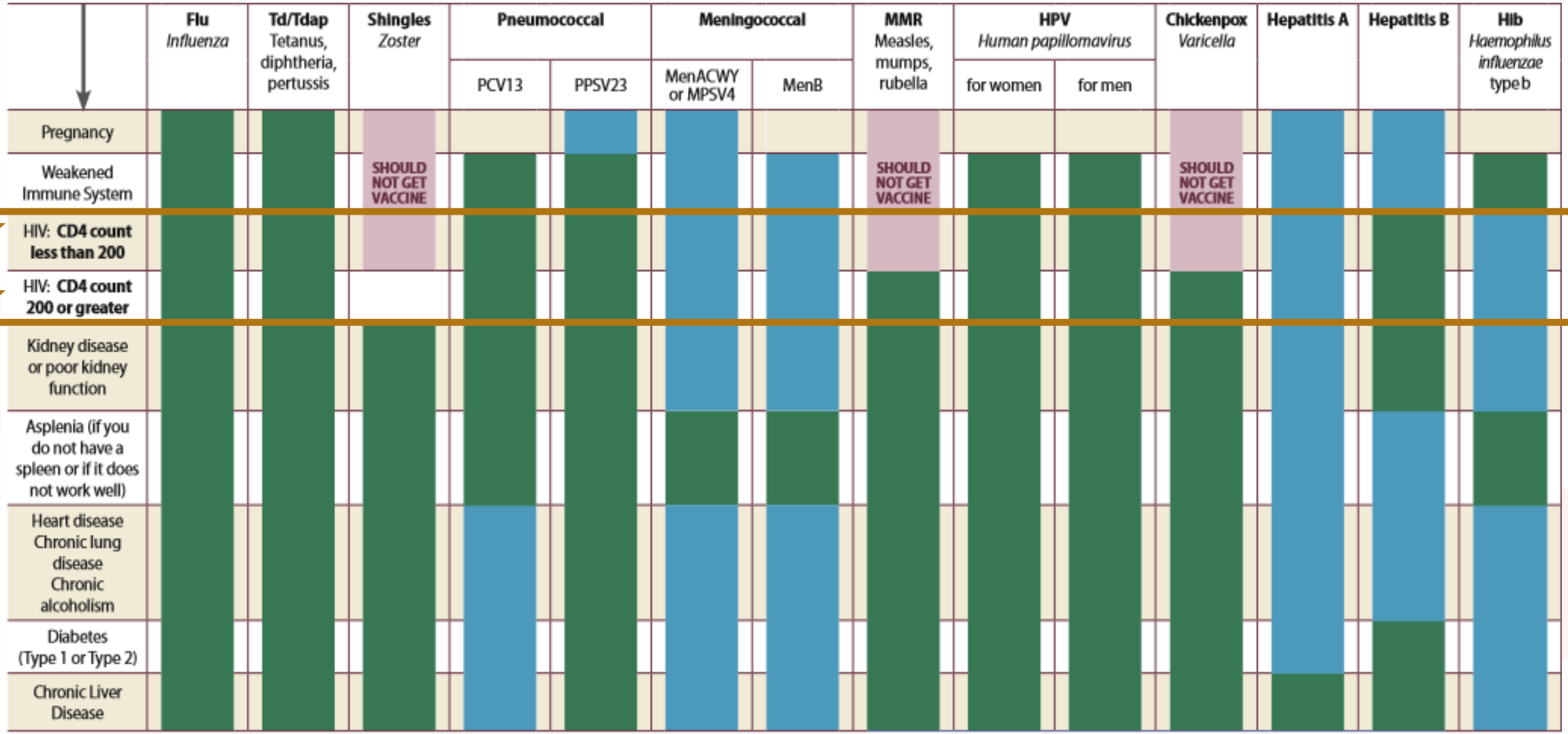
- Varicella
- Zoster
- Measles, Mumps, Rubella (MMR)

CDC 2016: Recommended Adult Immunization schedule

Indication ▶ / Vaccine ▼	Pregnancy	Immuno-compromising conditions (excluding HIV infection)[4,6,7,8,13]	HIV infection CD4+ count (cells/μL)[4,6,7,8,13] <200	HIV infection CD4+ count (cells/μL)[4,6,7,8,13] ≥200	Men who have sex with men (MSM)	Kidney failure, end-stage renal disease, on hemodialysis	Heart disease, chronic lung disease, chronic alcoholism	Asplenia and persistent complement component deficiencies[8,11,12]	Chronic liver disease	Diabetes	Healthcare personnel
Influenza[2,*]	1 dose annually										
Td/Tdap[3,*]	1 dose Tdap each pregnancy	Substitute Tdap for Td once, then Td booster every 10 yrs									
Varicella[4,*]	Contraindicated			2 doses							
HPV Female[5,*]		3 doses through age 26 yrs				3 doses through age 26 yrs					
HPV Male[5,*]		3 doses through age 26 yrs				3 doses through age 21 yrs					
Zoster[6]	Contraindicated				1 dose						
MMR[7,*]	Contraindicated			1 or 2 doses depending on indication							
PCV13[8,*]					1 dose						
PPSV23[8]					1, 2, or 3 doses depending on indication						
Hepatitis A[9,*]					2 or 3 doses depending on vaccine						
Hepatitis B[10,*]					3 doses						
MenACWY or MPSV4[11,*]	1 or more doses depending on indication										
MenB[11]		2 or 3 doses depending on vaccine									
Hib[12,*]		3 doses post-HSCT recipients only			1 dose						

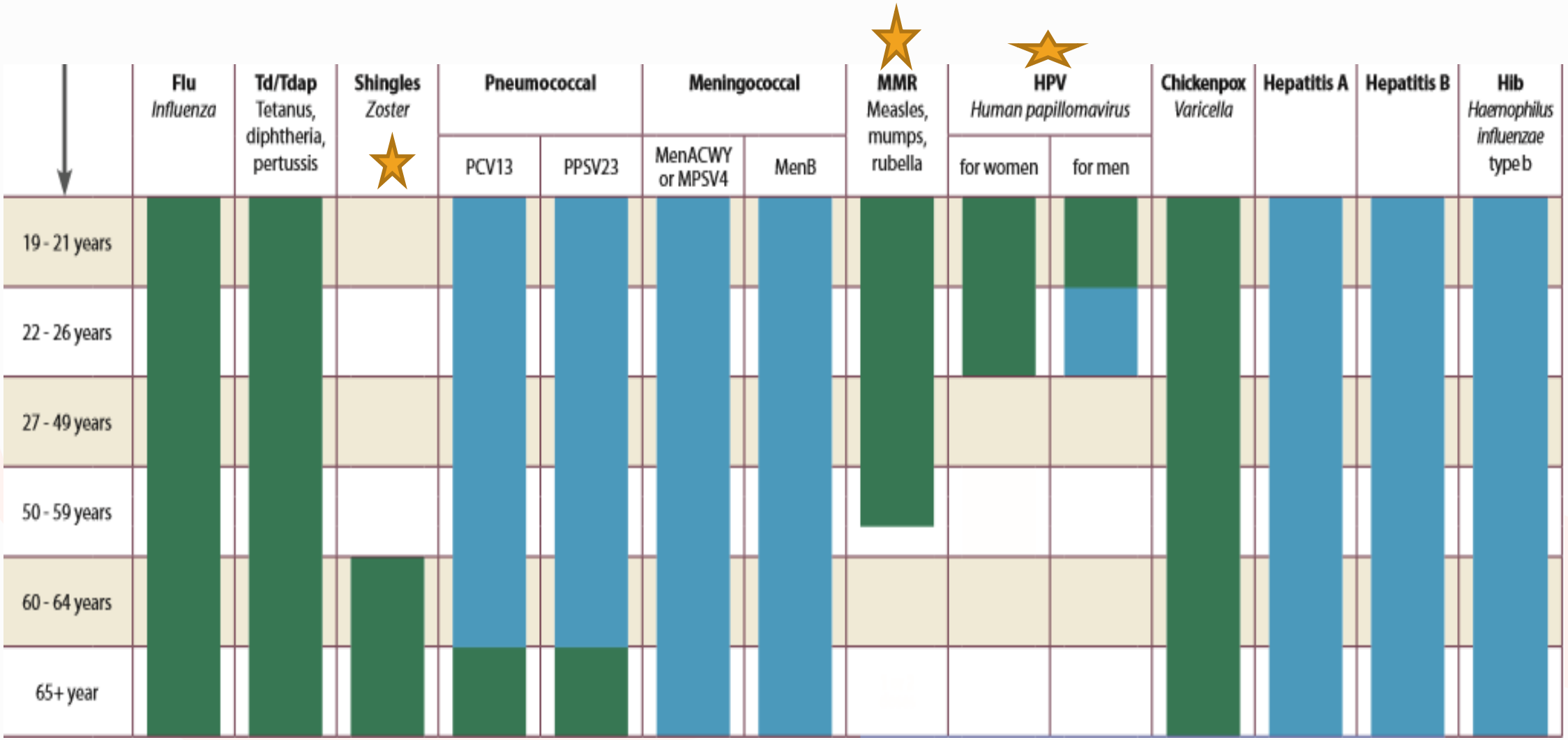
http://www.immunize.org/shop/views/adultsched_pg2.pdf

CDC: 2016 Recommended Immunizations for Adults: By Health Condition



https://www.cdc.gov/vaccines/schedules/downloads/adult/adult-schedule-easy-read.pdf

CDC: 2016 Recommended Immunizations for Adults: By Age



https://www.cdc.gov/vaccines/schedules/downloads/adult/adult-schedule-easy-read.pdf

2017: Schedule Updates

- *Schedule will contain more information on adults with immune-compromising medical conditions
- Age groups 27 to 49 and 50 to 59 years combined into one block.
- Column for MSM has been relocated to alert healthcare providers to look at high-risk populations

2017 Updates

- Varicella and zoster vaccinations: details added for at-risk populations (healthcare workers, HIV).
- HPV vaccination: details added on vaccinating adults with immunocompromising conditions and the MSM population.
- Incorporated June 2016 recommendation for routine vaccination of all HIV-infected adults with a two-dose primary ACWY meningococcal series with revaccination every 5 years.

Meningococcal update

- Five serogroups of meningococcus bacteria (A, B, C, W, Y)
- In the USA: serogroups B, C, and Y most common
- In HIV patients: serogroups A,C, W, Y most common
- HIV infection confers an additional 5- to 24-fold risk of meningococcal disease compared to uninfected persons
- Lower CD4 and higher viral load increase risk
- Different vaccines depending on age, risk factors

https://www.cdc.gov/mmwr/volumes/65/wr/mm6543a3.htm

Available Vaccines

1) **Meningococcal conjugate vaccine:**

★- MenACWY (Menactra® or Menveo®): quadrivalent (A, C, W, Y)

- Hib-MenCY-TT (MenHibrix®): bivalent (C, Y), *H.influenzae* (type B)

2) Meningococcal polysaccharide vaccines:

- MPSV4 (Menomune®): quadrivalent (A, C, W,Y)

Serogroup B meningococcal vaccine

- MenB (Bexsero® or Trumenba®): monovalent (B)

CDC 2016: Recommended Adult Immunization schedule

Indication ▶ / Vaccine ▼	Pregnancy	Immuno-compromising conditions (excluding HIV infection)[4,6,7,8,13]	HIV infection CD4+ count (cells/μL)[4,6,7,8,13]		Men who have sex with men (MSM)	Kidney failure, end-stage renal disease, on hemodialysis	Heart disease, chronic lung disease, chronic alcoholism	Asplenia and persistent complement component deficiencies[8,11,12]	Chronic liver disease	Diabetes	Healthcare personnel
			<200	≥200							
Influenza[2,*]	1 dose annually										
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http://www.immunize.org/shop/views/adultsched_pg2.pdf

Footnote: 2016

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.

http://www.immunize.org/shop/views/adultsched_pg2.pdf

Morbidity and Mortality Weekly Report (*MMWR*)

CDC > MMWR

Recommendations for Use of Meningococcal Conjugate Vaccines in HIV-Infected Persons — A Immunization Practices, 2016

Weekly / November 4, 2016 / 65(43);1189–1194

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View suggested citation

At its June 2016 meeting, the Advisory Committee on Immunization Practices (ACIP) recommended routine use of meningococcal conjugate vaccine (serogroups A, C, W, and Y; including MenACWY-D [Menactra, Sanofi Pasteur] or MenACWY-CRM [Menveo, GlaxoSmithKline]) for persons aged ≥2 months with human immunodeficiency virus (HIV) infection. ACIP has previously recommended routine vaccination of persons aged ≥2 months who have certain medical conditions that increase risk for meningococcal disease (*1*), including persons who have persistent (e.g., genetic) deficiencies in the complement pathway (e.g., C3, properdin, Factor D, Factor H, or C5–C9); persons receiving eculizumab (Soliris, Alexion

www.cdc.gov/

https://www.cdc.gov/mmwr/volumes/65/wr/mm6543a3.htm

Updated Recommendations:

- June 22, 2016: ACIP recommends use of meningococcal conjugate vaccine amongst HIV patients >2 months
- Two doses 8 weeks apart, with booster every 5 years until age 70
- Evaluated meningococcal disease epidemiology against cost effectiveness of a vaccination schedule
- Based on immunogenicity data from two studies

https://www.cdc.gov/mmwr/volumes/65/wr/mm6543a3.htm

The study

- Open label trial: 324 HIV infected individuals (11-24 yrs) received one dose at entry
- After 24 weeks, based on CD4% >15%, randomized to receive another dose
- Those with CD4% <15% all received a second dose

https://www.cdc.gov/mmwr/volumes/65/wr/mm6543a3.htm

- Measured antibodies against each serogroup at weeks 4, 24, 28, 72 (predefined titer 1:128)
- Response based on CD4% (serogroup C)

	4 weeks	28 weeks	72 weeks
CD4 >15% (1 dose)	65%	31%	21%
CD4 >15% (2 doses)	59%	64%	35%
CD4 <15% (2 doses)	22%	22%	6%

https://www.cdc.gov/mmwr/volumes/65/wr/mm6543a3.htm

Safety

- Adverse events assessed for 6 weeks after each dose; inversely related to entry CD4%
- 5% reported a serious adverse event (AE)- one AE judged to be related to MenACWY

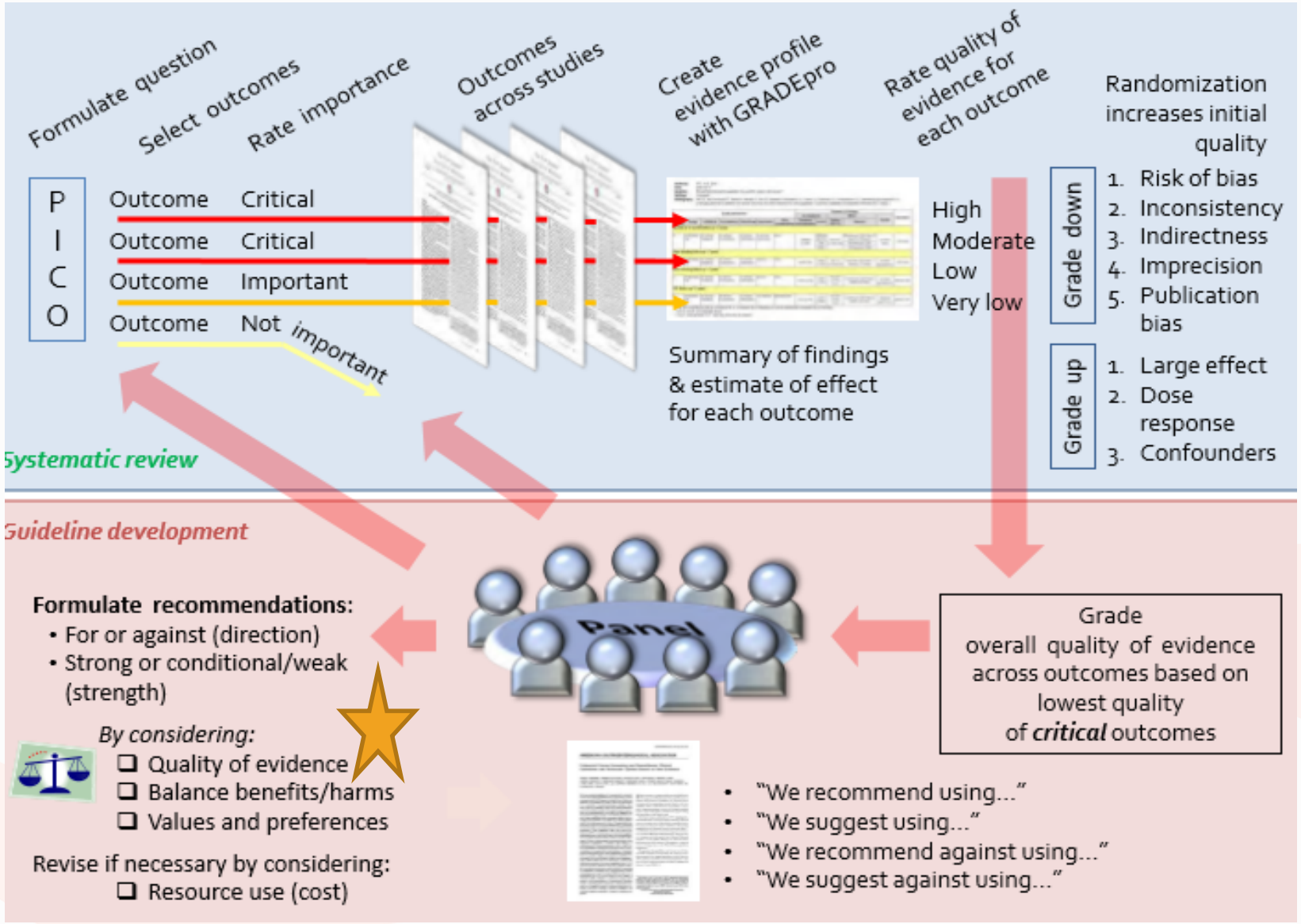
Summary of evidence for meningococcal conjugate vaccination of HIV-infected persons aged ≥2 months using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE)* framework — United States

Harms	Grade
Serious adverse events (after any dose)	4

https://www.cdc.gov/mmwr/volumes/65/wr/mm6543a3.htm

GRADE

- **Grading of Recommendations, Assessment, Development and Evaluations (GRADE)**
- CDC vaccine recommendations are developed using this evidence-based method
- A systematic, explicit, transparent approach to making judgements about quality of evidence and strength of recommendations
- Widely seen as the most effective method of linking evidence-quality evaluations to clinical recommendations



https://www.cdc.gov/vaccines/acip/recs/grade/downloads/guide-dev-grade.pdf

- MenACWY can be given with PCV13
- No data for the use of MPSV4 in HIV patients
- Pregnancy should not preclude vaccination with MenACWY
- Compared with no vaccination, approximately 122 cases and 23 deaths can be prevented
- 385 quality-adjusted life years (QALYs) saved at mean cost of $732,000 per QALY

https://www.cdc.gov/mmwr/volumes/65/wr/mm6543a3.htm

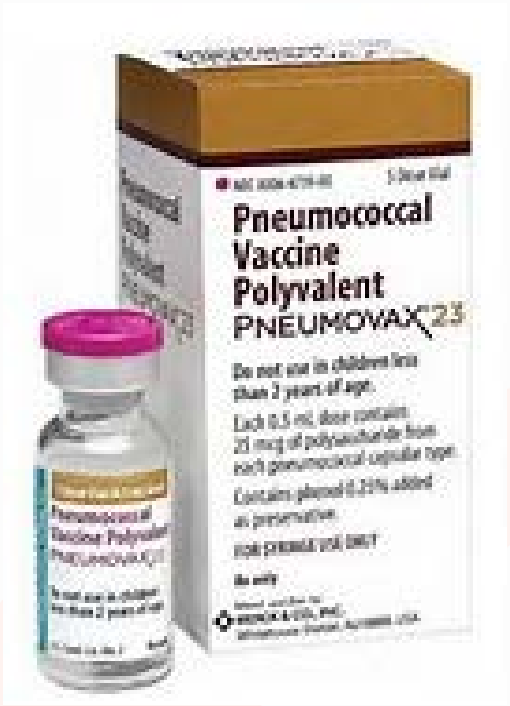
Pneumococcal vaccine

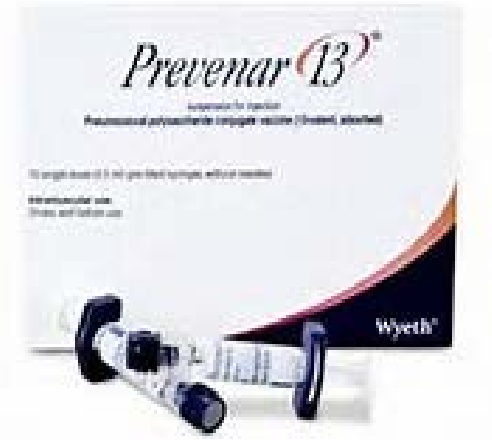
Invasive pneumococcal disease remains a source of significant morbidity and mortality amongst HIV-infected individuals

Incidence of bacterial pneumonia is higher in HIV-infected individuals than in those who are not HIV infected

Recurrent pneumonia (2 or more episodes within a 1-year period) is an AIDS-defining condition

Rates of pneumococcal bacteremia remains 35-fold higher than in age-matched HIV-uninfected persons





https://aidsinfo.nih.gov/guidelines/html/4/adult-and-adolescent-oi-prevention-and-treatment-guidelines/327/bacterial-respiratory

Pneumococcal vaccinations

- **Pneumococcal polysaccharide vaccine**

-PPSV23

Pneumovax 23®

- **13-valent pneumococcal conjugate vaccine**

-PCV13

Prevnar 13®

-PCV13 and PPSV23 are covered by Medicare Part B

Current Recommendations

- Those who have never received any pneumococcal vaccine should receive a single dose of PCV13 regardless of CD4 count (**AI**)
- Those with CD4 ≥200 cells/mm^3 should then receive a dose of PPV23 at least 8 weeks later (**AII**)
- Those with CD4 <200 cells/mm^3 can receive PPSV23 eight weeks after PCV13 (**CIII**), however, it may be preferable to defer until CD4 increases to >200 cells/mm^3 (**BIII)**

https://aidsinfo.nih.gov/guidelines/html/4/adult-and-adolescent-oi-prevention-and-treatment-guidelines/327/bacterial-respiratory

Pneumococcal Vaccination schedule

8 weeks	5 years	>65 years
PCV13 → → →	PPSV23 → → → PPSV23 → →	PPSV23

1 year

PPSV23 → → → PCV13

ACIP study analysis:
(PCV13, PPSV23)

- Evidence of benefits, harms, values and preferences, and cost-effectiveness were reviewed in accordance with GRADE methods
- Both vaccines were evaluated using data for HIV-infected adults
- Studies with 7-valent pneumococcal conjugate vaccine (PCV7) used as a proxy when no PCV13 studies were available
- Randomized controlled trials (RCT), direct observations studies
- PCV13 (RCTs), PPSV23 (1 RCT and 9 observational studies with conflicting data)

https://www.cdc.gov/vaccines/acip/recs/grade/pneumo-immuno-adults.html

Outcomes Reviewed

- Prevention of death
- Invasive pneumococcal disease (IPD)
- Pneumococcal pneumonia
- Hospitalizations due to pneumococcal disease
- Vaccine-induced immunogenicity
- Adverse events

https://www.cdc.gov/vaccines/acip/recs/grade/pneumo-immuno-adults.html

PCV13

Table 1. Benefits: 13-valent Pneumococcal Conjugate Vaccine in immunocompromised adults

Outcome	No. subjects (# studies)	Incidence in unvaccinated (cases/100,000)	Incidence in vaccinated unvaccinated (cases/100,000)	Vaccine efficacy (95% CI)	unvaccinated (cases/100,000)[d]	Number needed to vaccinate
Invasive Pneumococcal Disease[a]	496 (1 RCT, HIV+ adults, Malawi)[2]	64[c]	17[d]	74% (30, 90)[b]	47[d]	2128[d]

https://www.cdc.gov/vaccines/acip/recs/grade/pneumo-immuno-adults.html

PCV13

Table 5. Considerations for Formulating Recommendations: 13-valent Pneumococcal Conjugate Vaccine in immunocompromised adults

Key factors	Comments
Evidence type for benefits and harms	Indirectness & lack of evidence for 3 of 4 critical disease outcomes
Balance between benefits and harms	Benefits outweigh harms. Very high burden of disease in immunocompromised adults
Value	ACIP pneumococcal work group consensus regarding the importance of preventing critical pneumococcal outcomes
Cost-effectiveness	Uncertainty regarding costs/benefits relative to PPSV23

https://www.cdc.gov/vaccines/acip/recs/grade/pneumo-immuno-adults.html

PPSV23

Table 7. Summary of Evidence: 23-valent Pneumococcal Polysaccharide Vaccine in immunocompromised adults

Comparison	Outcome	Study design (# studies)	Findings	Evidence type	Overall Evidence type [a]
PPSV23 vs. Placebo	Death	RCT (1)	Inconclusive data on efficacy against mortality	3	3/4
PPSV23 vs. Placebo or No vaccination	IPD[b]	RCT (1) Observational (6)	Negative efficacy among highly immunosuppressed adults; effectiveness against all IPD 49% (34%, 61%) from observational studies	3/4	3/4
PPSV23 vs. Placebo or No vaccination	All-cause pneumonia	RCT (1) Observational (5)	Negative efficacy among highly immunosuppressed adults; effectiveness of 31% (27%, 36%) from observational studies	3/4	3/4
PPSV23	Systemic adverse events	Post-licensure surveillance	PPSV23 appears safe for use among adults with HIV	3	3/4

https://www.cdc.gov/vaccines/acip/recs/grade/pneumo-immuno-adults.html

PPSV23

Table 8. Considerations for Formulating Recommendations: 23-valent Pneumococcal Polysaccharide Vaccine in immunocompromised adults

Key factors	Comments
Evidence type for benefits and harms	Inconsistent evidence for all-cause pneumonia; limited data from RCT not generalizable to the US HIV+ population
Balance between benefits and harms	Some uncertainty about benefits. Vaccine appears to be safe in this population
Value	ACIP pneumococcal work group consensus regarding the importance of preventing critical pneumococcal outcomes
Cost-effectiveness	Cost-effectiveness in the general adult population demonstrated; uncertainty around the assumptions utilized in cost-effectiveness analysis

Summary: Benefits are likely greater than harms. High values were placed on prevention of the morbidity and mortality of pneumococcal infection among immunocompromised adults.(*recommendation category B; evidence type 3/4*)

https://www.cdc.gov/vaccines/acip/recs/grade/pneumo-immuno-adults.html

ACIP Conclusions

- Half of IPD in immunocompromised adults caused by serotypes included in PCV13 immunization; an additional 21% caused by serotypes included in PPSV23 immunization
- Antibody response is non-inferior or superior when PCV13 is given before PPSV23 compared to PPSV23 administration before PCV13
- Compared to giving PPSV23 first as an initial dose, there is a significant increase in antibody (non-inferior to superior response) when PPSV23 is given eight weeks after PCV13

https://www.cdc.gov/vaccines/acip/recs/grade/pneumo-immuno-adults.html

Final Recommendations

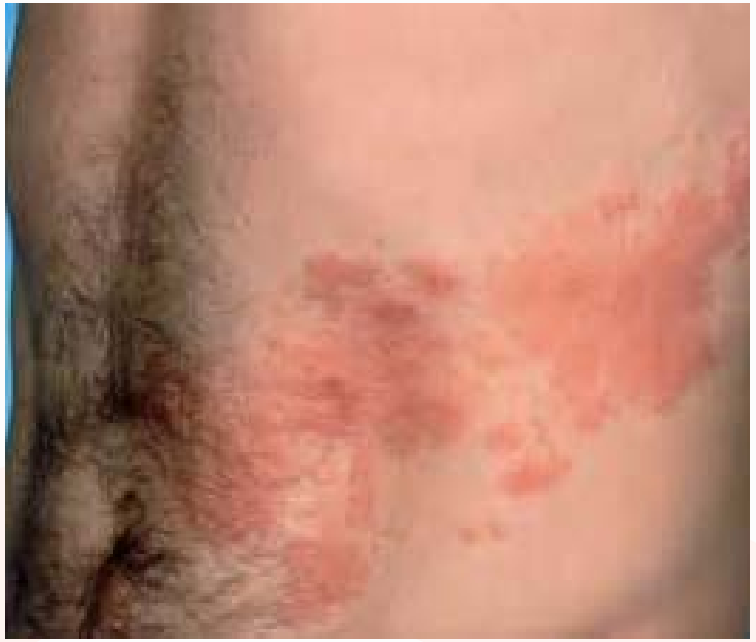
- For adults previously immunized with PPSV23, waiting at least 1 year after PPSV23 before giving a dose of PCV13 may provide a better immune response (expert opinion)
- GRADE (Grading of Recommendations, Assessment, Development and Evaluation) process led to the conclusion that both PCV13 and PPSV23 are effective in this group & that benefits likely outweigh harms

https://www.cdc.gov/vaccines/acip/recs/grade/pneumo-immuno-adults.html

Zoster

Risk of varicella reactivation as herpes zoster is increased in persons over age 50

Those with HIV have up to a 10-fold higher risk compared with HIV-uninfected persons, even with effective use of ART



Zoster Vaccine (Zostavax®)

- Approved by the FDA (May, 2006) for those >50 yrs
- Recommended by CDC (single dose) for those >60 yrs
- Reduces incidence of shingles by around 51%
- Reduces severity and duration of pain by around 67%
- ACIP guidelines do not require documented history of primary varicella/zoster, nor evidence of varicella antibody prior to vaccination

https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6333a3.htm

Herpes Zoster vaccine safe and effective in HIV positive people

1 April 2012. Related: Conference reports, Vaccines and microbicides, CROI 19 (Retrovirus) 2012.

Simon Collins, HIV i-Base

Encouraging results were presented from the ACTG A5247 study on the use of two doses of a live varicella zoster virus (VZV) vaccine (Zostavax, Merck) in almost 400 HIV positive people who were VZV positive or who had herpes zoster (HZ)/shingles outbreak at least one year before study entry, and who were virally suppressed on stable ART. [1]

The incidence and severity of HZ and post herpatic neuralgia (PHN) is higher in HIV positive people and early use of early acyclovir treatment is not always effective. As susceptibility to HZ increases with reduced age-related immune function, a protective vaccine response already demonstrated in HIV negative people > 60 years [2] would be particularly important for HIV positive people.

http://i-base.info/htb/16280

ACTG A5247: CROI 2012

- Two doses of Zostavax given to 395 HIV positive patients
- Randomized 3:1 to active or placebo arms
- Stratified by CD4 count: 200-349 vs >350
- Median age 49
- 75% were VZV positive, 33% had a shingles outbreak one year prior to study entry
- All were virally suppressed on ART

https://www.poz.com/article/hiv-zostavax-shingles-22067-3905

The Study

- Vaccinations: Day 0 and at week 6
- Immune responses evaluated at weeks 2, 6, 8, 12, and 24
- Primary endpoints were:1) Safety 2) efficacy (change in VZV titer at 6 weeks)

https://www.poz.com/article/hiv-zostavax-shingles-22067-3905

Study Outcomes

- No significant differences between active and placebo groups regarding safety
- Mean fold-rise in VZV antibody titer increased by 1.75 ZV vs 1.09 placebo from baseline to week 6 ($p<0.001$)
- This remained similar at week 12 (indicating no change from the second dose)
- Patients with higher CD4 count (>350) had higher antibody titer over time ($p=0.024$)

https://www.poz.com/article/hiv-zostavax-shingles-22067-3905

Safety

- Injection site reactions more frequent in the active group (42% vs 12 %, p<0.01).
- VZV-like rashes seen in 3 active and 2 placebo patients (PCR showing negative or non-vaccine-strain results).

https://www.poz.com/article/hiv-zostavax-shingles-22067-3905

- Study not conducted long enough to determine whether Zostavax actually reduces the risk of outbreaks compared with placebo.

HIV and Zostavax®

- No specific recommendations for HIV-infected patients
- Live attenuated vaccine → contraindicated with CD4 <200 (potency is 14x that of varicella vaccine)
- For HIV infected patients who do not have a history of primary varicella/evidence of antibody protection, consider vaccinating with varicella vaccine
- Consider for HIV infected patients with CD4 >200, with evidence of varicella immunity

Acyclovir vs Zostavax®

Preventing Recurrence

The efficacy of long-term antiviral prophylaxis to prevent herpes zoster recurrences in HIV-seropositive persons has not been evaluated and is not routinely recommended.

An attenuated virus vaccine for prevention of herpes zoster is FDA-approved for use in immunocompetent persons aged ≥50 years, but is recommended for use beginning at age 60 years by the Advisory Committee on Immunization Practices (ACIP). The zoster vaccine is contraindicated in persons with CD4 cell counts <200 cells/µL.

https://aidsinfo.nih.gov/guidelines/html/4/adult-and-adolescent-oi-prevention-and-treatment-guidelines/341/vzv

Unanswered Questions

Assuming a CD4 >200:

- Should Zostavax® be given to all HIV patients?
- Just those over 60?
- Just those over 50?
- Those with viral suppression only?
- Over a certain CD4 threshold ie CD4 >200 vs >350?
- Zostavax® only above a certain number of recurrent episodes?

Immunizations and Insurance

Medicare

Part B

-Influenza vaccine

-PCV13, PPSV23 (second dose 11 months apart)

-Hepatitis B (medium-high risk)

Part D

-all other commercially available vaccines (not covered by Part B)

Part D

- Starting in 2008 all Part D plan formularies must contain all commercially available vaccines
- The negotiated price for a Part D vaccine includes: vaccine ingredient cost, dispensing fee, sales tax, vaccine administration fee
- Part D plans have the discretion to implement either a single vaccine administration fee for all vaccines or multiple administration fees

https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/SE0727.pdf

Part D

- Beneficiary pays the physician and then submits a claim to his or her Part D plan for reimbursement **up to the plan's allowable charge**.
- In the absence of communication with the plan prior to vaccine administration, the amount the physician charges may be different from the plan's allowable charge, and a differential may remain that **the beneficiary will be responsible for paying.**

https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/SE0727.pdf

Part D: more information on CMS website

Variance in provider type, and product administration → Providers/Patients should contact Part D plans regarding specific vaccine fees

http://www.cms.gov/Medicare/Prescription-DrugCoverage/PrescriptionDrugCovGenIn/index.html

Medicaid

- Vaccination services for adults are optional. States determine policy surrounding:

-Which (if any) vaccines to cover

-Enrollee copayment

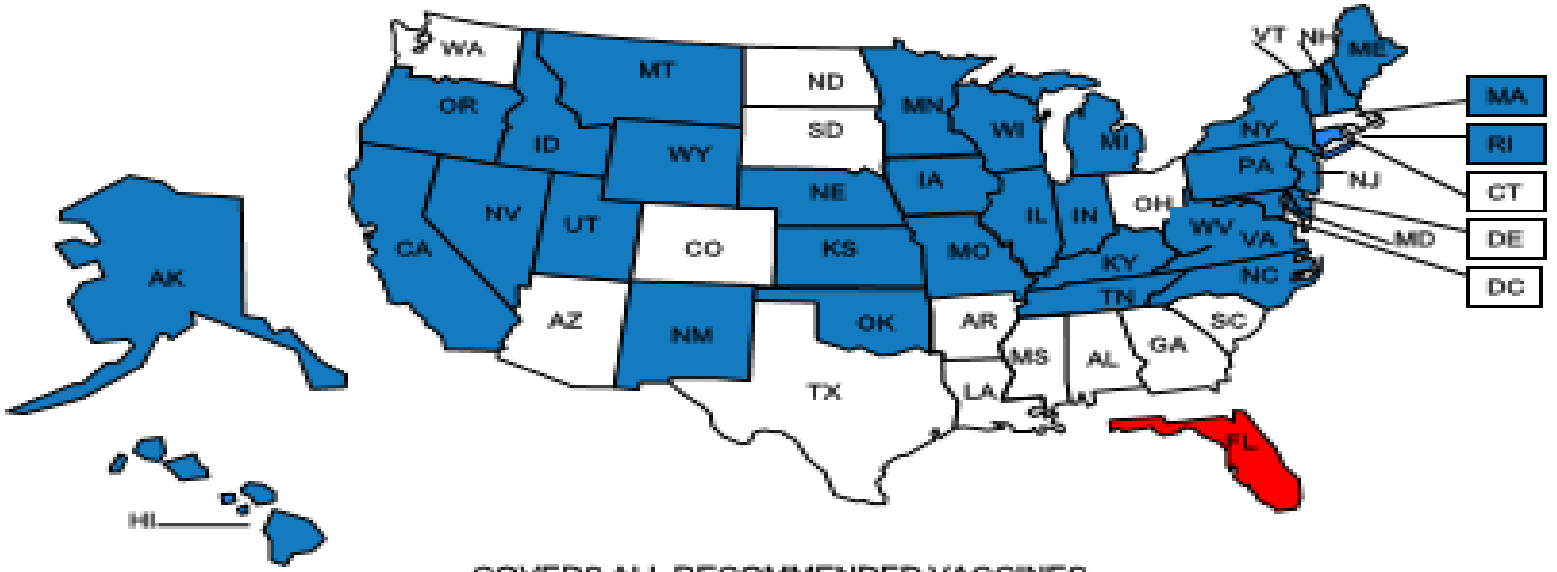
-Provider reimbursement

-Settings where vaccines may be administered

*All programs except Florida cover at least one vaccine

https://www.izsummitpartners.org/content/uploads/2016/05/2b-1-Stewart-Medicaid-Adult-Vax-Coverage-and-Reimbursement.pdf

States Covering All ACIP Recommended Vaccines 2012 (n=36)



COVERS ALL RECOMMENDED VACCINES
Alaska, California, Connecticut, Delaware, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Utah, Vermont, Virginia, West Virginia, Wisconsin, Wyoming

State does not cover any vaccines in 2012

10

https://www.izsummitpartners.org/content/uploads/2016/05/2b-1-Stewart-Medicaid-Adult-Vax-Coverage-and-Reimbursement.pdf

VACCINE	SUMMARY OF MEDICAID COVERAGE BY VACCINE 2012
FLU	1 state does not cover (Florida) • **Most frequently covered vaccine.** Most states cover intramuscular preservative & preservative-free
PNEUMO	3 states do not cover (Florida, Georgia, S. Dakota)
TD/TDAP	4 states do not cover TD (Florida, Georgia, Mississippi, S. Carolina) 5 states do not cover TDAP (DC, Florida, Louisiana, Mississippi, S. Carolina)
HEP. A	4 states do not cover (Alabama, Florida, Louisiana, Mississippi)
HEP. B	2 states do not cover (Florida, Louisiana) • **Second-most frequently covered vaccine = intramuscular 90746**
MMR	5 states do not cover (Florida, Georgia, Louisiana, Mississippi, S. Carolina)
MENING	4 states do not cover (Florida, Louisiana, Mississippi, Texas)
HPV	7 states do not cover (Alabama, Arizona, Arkansas, Florida, N. Dakota, S. Carolina, S. Dakota) • 42/51 states cover quadrivalent 90649. 32/51 states cover bivalent 90650. Recommended in 2007
VARICELLA	8 states do not cover (Arkansas, Florida, Georgia, Louisiana, Mississippi, N. Dakota, S. Carolina, Texas) • **Second least frequently covered vaccine**
ZOSTER	11 states do not cover (Arkansas, Colorado, DC, Florida, Louisiana, Mississippi, N. Dakota, Ohio, S. Carolina, Texas, Washington) • **Least frequently covered vaccine. Recommended in 2008**

https://www.izsummitpartners.org/content/uploads/2016/05/2b-1-Stewart-Medicaid-Adult-Vax-Coverage-and-Reimbursement.pdf

2016 Medicaid

- Certain vaccines may be available if supplemental insurance is obtained

Resources

- https://www.cdc.gov/vaccines/acip/recs/grade/pneumo-immuno-adults.html
- http://hivinsite.ucsf.edu/InSite?page=kb-03-01-08#S4.2X
- https://aidsinfo.nih.gov/education-materials/fact-sheets/21/57/hiv-and-immunizations
- http://www.hivguidelines.org/clinical-guidelines/hiv-prevention/prevention-of-secondary-disease-preventive-medicine/immunizations/
- http://publichealth.gwu.edu/departments/healthpolicy/DHP_Publications/pub_uploads/dhpPublication_5F6FC614-5056-9D20-3D48DB884F5C18C8.pdfm

Questions?