

# Preventative Care 101

Michael Hiebert D.O. AAHIVS  
Oklahoma State University  
Clinical Assistant Professor of Medicine

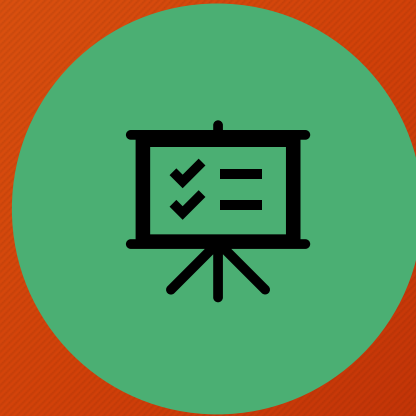
# Disclosures

- None

# Objectives



REVIEW UPDATES ON VACCINATION  
GUIDELINES



DISCUSS THE GUIDELINES FOR PREP  
INCLUDING OPTIMAL CANDIDATES  
AND MONITORING PARAMETERS



REVIEW CURRENT CANCER  
SCREENING GUIDELINES AND  
UPDATES

# Vaccines

- No kids

# Influenza

How do they know what to vaccinate against before “flu season” actually begins?

- It is based off previous years strains

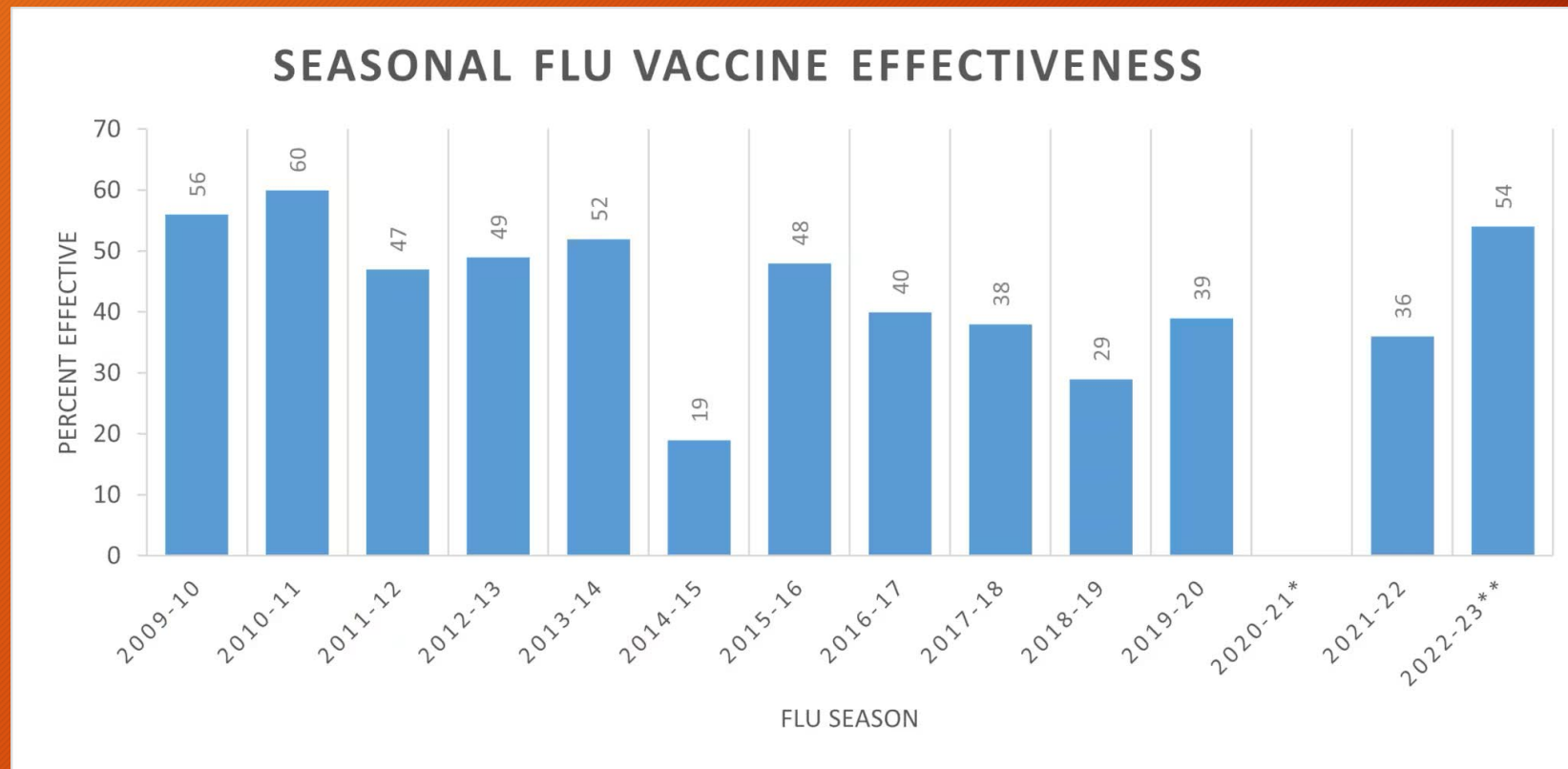
When to vaccinate and when to wait.

- Do not vaccinate in July or August as immunity wanes with time.
- Vaccinate by the end of October

How do the vaccines work?

- Sterilizing immunity: antibodies to antigens on the surface of pathogens (prior to replication)
- Protective immunity: Stopping virus replication after it has infected host causing only mild symptoms

# Influenza



# Influenza

- What's the difference in vaccine formulations?
  - Inactivated
    - Killed virus
  - Recombinant
    - Derived from vectors in insects (eggless)
  - Live-attenuated
    - Works by infecting and replicating in the cells of the nasopharynx creating specific antibody production leading to immunity (hopefully)
    - Not for immunocompromised and not with other live vaccines

# Influenza CDC Recommendation

## <65 years old

- Live attenuated (ages 2-49 years)
- Inactivated (6 months-64 years)
- Recombinant (18 years and older)

## >65 years old

- High dose (Fluzone)
- Recombinant (Flublok)
- Adjuvant (Fluad)



# Pneumococcal

- Vaccinate adults 65 years or older
  - No history of vaccination
    - One dose of PCV 15 then PPSV23 at least 1 year later
    - One dose of PCV 20
  - Previously treated with PCV 7
    - Same as above
  - Previously given PCV 13
    - One dose of PCV 20 or PPSV 23 at least 1 year after
  - Previously given PPSV 23
    - One dose of PCV 15 or one dose of PCV 20 after most recent PPSV 23 vaccination
- Ages 19-64 with certain underlying medical conditions
  - Alcoholism, CKD, immunodeficiencies/immunosuppression, chronic heart/liver/lung disease, cigarette smokers, diabetes, HIV, "generalized malignancy", nephrotic syndrome, hemoglobinopathies



# Pneumococcal

- Contraindications to vaccination
  - Anaphylaxis to previous dose or vaccine component
  - Severe reaction to diphtheria-toxoid containing vaccine
- Benefits of vaccination
  - Saccharides from 20 variants of *S. pneumoniae*
  - PCV 20 showed comparable antibody induction to PCV 13 which demonstrated 45% efficacy against non-bacteremic pneumococcal pneumonia and 75% efficacy against invasive pneumococcal disease

# COVID-19

- Recommended for 19 years and older
  - Unvaccinated
    - One dose of updated COVID vaccine from Pfizer or Moderna
    - Two dose series of Novavax
  - Previously vaccinated
    - One dose of any updated COVID 19 vaccine (2023-2024)
- Contraindications and precautions
  - Contraindicated in patients with severe allergic reaction to previous mRNA COVID 19 vaccine
  - Myocarditis/pericarditis within 3 weeks of vaccination
  - MIS-A



# RSV

Recommended pregnant patients 32-36 weeks gestation from September-January

- One dose (Abryvso)

Shared decision-making adults >60 years or older

- One dose (Abryvso or Arexvy)

# Shingles

Age 50 or older

- 2 dose series of recombinant zoster vaccine/Shingrix 2-6 months apart
- Now recommended for immunocompromised patients

”I’ve already had shingles.  
Do I still need the vaccine?”

- Decreases risk of repeat episodes and post herpetic neuralgia

Contraindications

- Severe allergy to any component of this vaccine
- Acute herpes zoster episode

Repeat vaccination?

- No recommendation

# Meningococcal (ACWY)

Recommended 2 doses conjugate vaccine at least 8 weeks apart

- First year college students in residential housing or military recruits who have not been vaccinated previously
- Asplenia, HIV infection, complement deficiency, or taking complement inhibitors
- Travel to countries hyperendemic meningococcal disease or microbiologists working with *N. meningitidis*
- Outbreak

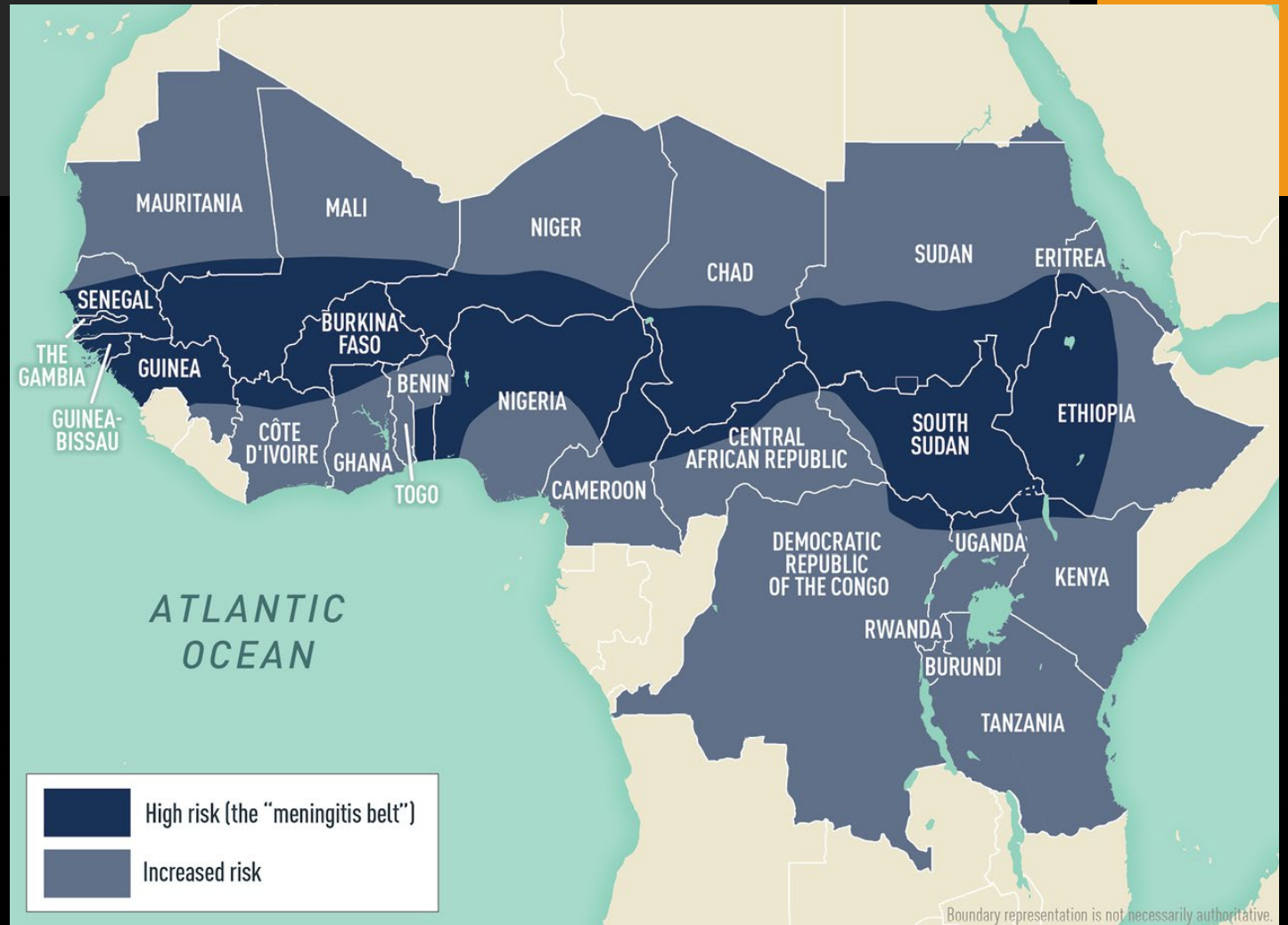
Revaccination

- Booster dose every 5 years for those who remain at increased risk

Vaccine efficacy

- >92% of vaccinated individuals will mount a serologic response

# ”Meningitis Belt”



# Meningococcal B

Shared decision-making ages 16-23 receive 2 dose series of recombinant vaccine (either MenB-4C or MenB-FHbp)

## Special situations

- Military recruits
- Complement deficiency/inhibitor
- Microbiologists exposed to N meningitidis

Booster at 1 year and revaccinate every 2-3 years if risk remains

## Additional benefits

- Decrease incidence of gonorrhoea by 31% in New Zealand study



# HPV

## 9 valent vaccination to all persons <26 years of age

- 2 dose vaccine if initiated <15 year of age or 3 dose series if initiated >15 years of age

## Shared decision-making ages 27-45

- Immunocompromised including HIV infection

## Community eradication

- Australia implemented vaccination program
- Decrease genital warts cases by 93%

# Monkeypox

- JYNNEOS (live attenuated)
  - 2 dose intradermal injection at least 28 days apart
- Any person at risk regardless of age
  - New STI
  - >1 sex partner
  - Activity at commercial sex venue
  - Sex at a large public event where m. pox transmission is high
  - Sex partners of the above or anyone anticipating above activity

# Cancer Screening



# Colon Cancer

## Screen

Screen adults  
aged 45-49  
(grade B)

## Screen

Screen all adults  
ages 50-75  
(grade A)

## Screen

Screen selected  
adults ages 76-85  
(grade C)

# Colon Cancer Screening Methods

- High sensitivity FOBT yearly
- FIT yearly
- S-DNA FIT every 1-3 years
- Direct visualization
  - Colonoscopy every 10 years
  - CT colonography every 5 years
  - Flex sigmoidoscopy every 5 years
  - Flex sigmoidoscopy every 10 years with FIT yearly

# Breast Cancer

- USPSTF
  - Biennial screening ages 50-74
  - Can consider screening ages 40-49 in certain populations
- American Cancer Society
  - Ages 40-44 - option to start screening yearly
  - Ages 45-54 - Yearly mammograms
  - Ages 55 and older - Option between yearly and biennial screening

# BRCAs Screening

USPSTF recommends assessing personal and family history of breast, ovarian, peritoneal, or tubal malignancy in combination with brief assessment tool

- Ontario Family History Assessment Tool
- Manchester Scoring System
- Referral Screening Tool
- Pedigree Assessment Tool
- Seven Question Family History Screening
- International Breast Cancer Intervention Study Model

It recommends against routine screening

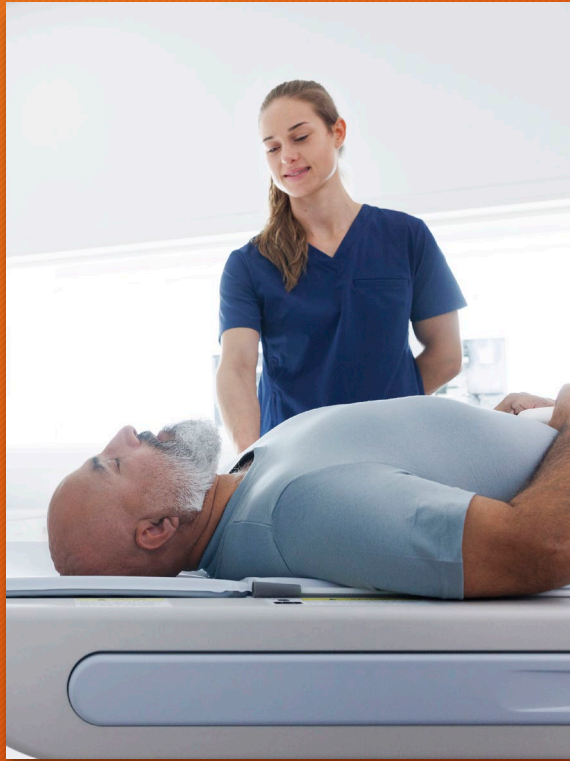
# Cervical Cancer

- 21-29 screening every 3 years with cervical cytology alone
- 30-65 screening every 3 years with cervical cytology alone or every 5 years with high-risk HPV testing.
- What if they've had a hysterectomy?
  - USPSTF recommends against screening for cervical cancer if the cervix was removed during hysterectomy and does not have a history of high grade precancerous lesion





# Lung Cancer



- Annual LDCT ages 50-80 who have a 20 pack-year smoking history who have smoked within the last 15 years
  - Example:  $\frac{1}{2}$  ppd x 40 yrs = 20 pack years and currently smoking ->criteria met
  - 1 ppd x 10 years = 10 pack years ->criteria NOT met
  - 1 ppd x 30 years = 30 pack years and quit 20 years ago ->criteria NOT met
- What about vaping and marijuana?
- Shared decision making

# Prostate Cancer

**Ages 55-69  
individualized  
screening PSA**

**Ages 70+  
recommend  
against  
screening**

# Skin Cancer

- Not currently enough data to support routine visual screening in adolescents and adults

# Intimate Partner Violence

- Screen women of reproductive age and provide or refer women who screen positive
  - HARK (Humiliation Afraid Rape Kick)
  - HITS (Hurt Insult Threaten Scream)
  - E-HITS
  - PVS (Partner Violence Screen)
  - WAST (Women Abuse Screening Tool)

# PrEP

- Decreases risk of HIV transmission in drug users by >70% and HIV from intercourse by >95%
- It is recommended for all persons at least 35 kg at risk for HIV acquisition
  - A sexual partner with HIV
  - STI in the last 6 months
  - History of inconsistent condom use with partners of unknown HIV status
  - Persons who inject drugs
  - Partner of persons who inject drugs



# PrEP

- Medication options
  - Truvada (tenofovir disoproxil fumarate/emtricitabine)
    - Two nucleoside reverse transcriptase inhibitors
    - Recommended for cisgender and transgender males and females
  - Descovy (tenofovir alafenamide/emtricitabine)
    - Recommended for transgender females and cisgender males
  - Apretude (cabotegravir)
    - Integrase inhibitor
    - Recommended for transgender and cisgender males and females

# PrEP

- Monitoring
  - CBC, CMP, HIV viral load, HIV 4<sup>th</sup> generation screen, and syphilis testing
- For anal receptive intercourse - 1 week
- For vaginal receptive intercourse - 3 weeks



# Summary

- Vaccinate your patients (if they let you)
- Adhere to cancer screening guidelines as above
- Don't be afraid to give PrEP



# Resources

- Adjuvanted flu vaccine. Centers for Disease Control and Prevention. August 25, 2022. Accessed January 2024. <https://www.cdc.gov/flu/prevent/adjuvant.htm>.
- Adult immunization schedule notes. Centers for Disease Control and Prevention. December 6, 2023. Accessed January 2024. <https://www.cdc.gov/vaccines/schedules/hcp/imz/adult-schedule-notes.html#appendix-PPSV23>.
- Anand S, Liang PS. A Practical Overview of the Stool DNA Test for Colorectal Cancer Screening. *Clinical and Translational Gastroenterology*. 2022; Publish Ahead of Print. doi:<https://doi.org/10.14309/ctg.0000000000000464>
- CDC. PrEP Effectiveness. [www.cdc.gov](https://www.cdc.gov/hiv/basics/prep/prep-effectiveness.html). Published November 3, 2020. <https://www.cdc.gov/hiv/basics/prep/prep-effectiveness.html>
- Colorectal cancer: Screening. Recommendation: Colorectal Cancer: Screening | United States Preventive Services Taskforce. May 18, 2021. Accessed January 2024. <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/colorectal-cancer-screening#tab1>.
- Crosignani P, De Stefani A, Fara GM, et al. Towards the eradication of HPV infection through universal specific vaccination. *BMC Public Health*. 2013;13(1). doi:<https://doi.org/10.1186/1471-2458-13-642>
- Doubeni CA, Jensen CD, Fedewa SA, et al. Fecal Immunochemical Test (FIT) for Colon Cancer Screening: Variable Performance with Ambient Temperature. *Journal of the American Board of Family Medicine : JABFM*. 2016;29(6):672-681. doi:<https://doi.org/10.3122/jabfm.2016.06.160060>

# Resources

- European Centre for Disease Prevention and Control. Interim analysis of COVID-19 vaccine effectiveness against hospitalisation and death using electronic health records in six European countries. Stockholm: ECDC; 2023
- Herpes Zoster Shingrix Vaccine Recommendations | CDC. [www.cdc.gov](https://www.cdc.gov/vaccines/vpd/shingles/hcp/shingrix/recommendations.html#:~:text=CDC%20recommends%20Shingrix%20(recombinant%20zoster). Published May 6, 2022. [https://www.cdc.gov/vaccines/vpd/shingles/hcp/shingrix/recommendations.html#:~:text=CDC%20recommends%20Shingrix%20\(recombinant%20zoster](https://www.cdc.gov/vaccines/vpd/shingles/hcp/shingrix/recommendations.html#:~:text=CDC%20recommends%20Shingrix%20(recombinant%20zoster)
- How influenza (flu) vaccines are made. Centers for Disease Control and Prevention. November 3, 2022. Accessed January 2024. <https://www.cdc.gov/flu/prevent/how-fluvaccine-made.htm>.
- Mbaeyi SA. Meningococcal Vaccination: Recommendations of the Advisory Committee on Immunization Practices, United States, 2020. *MMWR Recommendations and Reports*. 2020;69. doi:<https://doi.org/10.15585/mmwr.rr6909a1>
- MF59. MF59 - an overview | ScienceDirect Topics. 2023. Accessed January 2024. <https://www.sciencedirect.com/topics/immunology-and-microbiology/mf59>.
- Qeffinger KC, Fontham ETH, Etzioni R, et al. Breast Cancer Screening for Women at Average Risk. *JAMA*. 2015;314(15):1599. doi:<https://doi.org/10.1001/jama.2015.12783>
- Recommendation: Prevention of Human Immunodeficiency Virus (HIV) Infection: Preexposure Prophylaxis | United States Preventive Services Taskforce. [www.uspreventiveservicestaskforce.org](http://www.uspreventiveservicestaskforce.org). <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/prevention-of-human-immunodeficiency-virus-hiv-infection-pre-exposure-prophylaxis>
- Robison SG, Leman RF. Association of Group B Meningococcal Vaccine Receipt With Reduced Gonorrhea Incidence Among University Students. *JAMA Network Open*. 2023;6(8):e2331742. doi:<https://doi.org/10.1001/jamanetworkopen.2023.31742>
- Vaccine effectiveness: How well do flu vaccines work? Centers for Disease Control and Prevention. February 8, 2023. Accessed January 2024. <https://www.cdc.gov/flu/vaccines-work/vaccineeffect.htm>.
- You Jeong Kim, Chang Nam Lee, Mi So Lee, et al. Recurrence Rate of Herpes Zoster and Its Risk Factors: a Population-based Cohort Study. 2019;34(2). doi:<https://doi.org/10.3346/jkms.2019.34.e1>