New USPSTF and Vaccine Recommendations: Let’s Talk!

PRESENTED BY: DOUGLAS BOWER, MD

BACKGROUND

- Preventive Health is a significant daily task for most family practitioners
- 2015 – Developed “Preventive Health” session
  - TBL format for M3 Family Medicine clerkship students
- 2016 Prep, American Board of Family Medicine (SAM) (KSA)
- The Affordable Care Act

The Affordable Care Act mandates that persons with private health plans receive coverage without copayment or coinsurance for preventive services that have a USPSTF “A” or “B” recommendation.

- There are 54 USPSTF A and B Recommendations

https://www.uspreventiveservicestaskforce.org/Page/Name/uspstf-a-and-b-recommendations/

OBJECTIVES

At the end of this presentation the participants will be able to:

1. Describe the four principles for applying health promotion/preventive guidelines in clinical care
2. Define characteristics of useful screening tests
3. Find and apply current evidence-based guidelines for immunizations for all ages, including recent updates
4. Find and apply current evidence-based Health Promotion recommendations, including recent updates

A. Cancer screening
B. Other screening

IMMUNIZATIONS TOPICS

- Tdap
- Pneumovax® and Prevnar 13®
- Meningococcal
- Zoster
- Influenza
- Hepatitis A
- HPV
- Hepatitis B/Hib

CANCER SCREENING TOPICS (CHANGES △)

- Breast (△ 2016)
- Colon (△ 2016)
- Cervical (△ 2012)
- Lung (△, 2013)
- Prostate (△ 2012)
- Screening in older patients
HEMOPROPHYLAXIS / COUNSELING / OTHER SCREENING TOPICS (CHANGES △)

- Hepatitis C (△ 2016)
- Aspirin (△ 2016)
- Lipids / Statins / Cardiovascular (△ 2016)
- AAA (△ 2014)
- STI
  - HIV △ 2013
  - Chlamydia/GC △ 2014
  - Syphilis △ 2016
- TB

FOUR PRINCIPLES FOR APPLYING HEALTH PROMOTION / PREVENTION GUIDELINES IN PRACTICE

- Evidence-Based
- Individualized
- Opportunistic
- Prioritized

RISE MNEMONIC

One approach to help students remember Preventive Health considerations in practice:

- Risks (age, sex, family history)
- Immunizations
- Screening
- Education Counseling

CHARACTERISTICS OF USEFUL SCREENING TESTS

- There must also be an intervention that can be made during the asymptomatic period that will prevent morbidity/mortality (improve outcome).
  - Over-diagnosis concern (e.g. prostate, breast)
- An effective screening test must be for a disease with high enough prevalence that the screening is worthwhile.
- Sufficient sensitivity / specificity
- Be cost effective
- Acceptable to the patient

OVER DIAGNOSIS

- Over Diagnosis = Pseudo-disease
  - Example is a patient having cancer detected, but the cancer is one that would never have become clinically relevant.
    - The patient would live just as long without ever having the cancer diagnosis
  - Issues
    - It is impossible to measure over-diagnosis
    - Debate about precise magnitude of the problem
    - With over diagnosis comes subsequent over-treatment
  - Over estimates of screening benefit
    - Lead-time bias (PSA screening)
    - Length-time bias (newer technology for breast)

FIND AND APPLY CURRENT EVIDENCE-BASED GUIDELINES

- Immunizations (CDC/ACIP)
- Health Promotion; Screening and Education Counseling (USPSTF/Other)
FINDING AND APPLYING IMMUNIZATION RECOMMENDATIONS: APPS AND WEBSITES

Free access to recommended child and adult immunization schedules, tables and footnotes on your tablet or smartphone.

Websites:
- Centers for Disease Control and Prevention: www.cdc.gov/vaccines/hcp/
- Immunization schedules updated annually in February: www.cdc.gov/vaccines/schedules/hcp/
- Vaccine recommendations of the Advisory Committee on Immunization Practices updated every four months: www.cdc.gov/vaccines/hcp/acip-recs/

FINDING AND APPLYING CURRENT PREVENTIVE GUIDELINES: APPS AND WEBSITES

The ePSS is an application designed to help primary care clinicians identify clinical preventive services that are appropriate for their patients. Use the tool to search and browse U.S. Preventive Services Task Force (USPSTF) recommendations on the web or on your PDA or mobile device.

Websites:
- https://www.uspreventiveservicestaskforce.org/

USPSTF GRADE DEFINITIONS AFTER JULY 2012

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<tr>
<th>Grade</th>
<th>Definition</th>
<th>Implications for Practice</th>
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| A     | The evidence is unconvincing (e.g., evidence is limited, weak, non-existent). The committee cannot provide a recommendation. | Other clinicians may provide the service.
| B     | The USPSTF recommends the therapy. The evidence is sufficient to recommend the therapy, but the evidence may not be conclusive. | Other clinicians may provide the therapy.
| C     | The USPSTF recommends the therapy. The evidence is sufficient to recommend the therapy. | Other clinicians may provide the therapy.
| D     | The USPSTF recommends the therapy. The evidence is insufficient to recommend the therapy. | Consider providing the therapy for select patients, taking into account individual characteristics and clinical context.
| I     | The committee concludes that the evidence is insufficient to either recommend the therapy or to provide a recommendation. | The evidence is insufficient to either recommend the therapy or to provide a recommendation.

EVIDENCE-BASED: USPSTF GRADES

- Level A and B recommendations have sufficient evidence to recommend.
- Level C selectively recommends based on professional judgement and individual patient preferences.
- Level D recommendations against, should not be used, as harms outweigh the benefits.
- Level recommendations have insufficient evidence and clinical considerations should be made: balance of benefits and harms cannot be determined.
- The USPSTF recognizes that clinical decisions involve more considerations than evidence alone.
  - Understand evidence, but individualize / shared decision making to the specific patient.

LEVELS OF CERTAINTY REGARDING NET BENEFIT

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IMMUNIZATIONS TOPICS

- Tdap
- Pneumovax® and Prevnar 13®
- Meningococcal
- Zoster
- Influenza
- Hepatitis A
- HPV
- Hepatitis B/Hib
Tdap

- Give every pregnancy.
  - In the 27-36 week window yields more passive immunity for the baby.
  - Earlier is better.
  - Consider pairing Tdap with glucose tolerance testing.
  - Pregnancy doses are for the baby, not the mom. Passive immunity and risk of infant death from pertussis both taper off over the first few to several months of the infant’s life.
- Only one as an adult age 19 and above (10 year adult booster would be with the Td)

PNEUMOVAX® AND PREVNAR 13®

- Pneumococcal 13-Valent Conjugate (PCV13) at age 65 and Pneumococcal 23-Valent Polysaccharide (PPSV23) at age 66.
- Pneumococcal 23-Valent Polysaccharide (PPSV23) once, 19-64 years for all current smokers, alcoholics, diabetics, and patients with chronic heart, lung, and liver disease (but not just hypertension).

MENINGOCOCCAL

- MenACWY (Menactra®): at 11-12 and 16-18 years old. Do not forget the 2nd dose before college.
- MenB: Explain to 16-18 years old that invasive meningococcal disease is rare and vaccination may protect against most, but not all, strains for a short time
  - MenB-FHbp (Factor H binding protein = Trumenba®) is now 2, not 3 doses, in non-outbreak situations
  - MenB-4C (4 component - Bexsero®) is 2 doses in all situations
  - The MenB series must be completed with the same brand. If your health system only carries one brand, then patients who got a different brand elsewhere will be starting the series from scratch.

ZOSTER

- Current vaccine prevents about half of zoster diagnoses and about two-thirds of post herpetic neuralgia cases
- New vaccine should be available within the next year or two. It’s effectiveness may be much higher, perhaps in the 90s, but with two doses and more local pain.

INFLUENZA △ 2016

- Advisory Committee on Immunization Practices in June 2016 recommended to not use live attenuated Influenza Vaccine (FluMist®) during the 2016-2017 season.
  - H1N1 effectiveness decreased with addition of second B strain and changes from trivalent to quadrivalent three seasons ago.
  - H3N2 and B strains’ effectiveness is still acceptable.
  - FluMist® still licensed by FDA and being used in Canada, United Kingdom, and elsewhere.

HEPATITIS A

Routine Hepatitis A for children.
Give 2 doses spaced 6-18 months apart to all children at age 1 year (12–23 months).
HPV

- Get the first dose in before the 15th birthday in order to potentially reduce the number of doses from 3 to 2.
- Certain immunocompromised kids need 3 doses even if started before 15th birthday.
- Consider starting all children at age 9 instead of 11-12. The immunity might be better if given early. CDC recommendations and FDA licensure allow this. Early timing gives more opportunities to complete the series.

Hepatitis B and Hib

- Footnote changes:
  - Administer Hep B within 24 hours of birth
  - Infants of Hep B surface antigen-positive mothers should be tested at 9 and 12 months of age
  - Children age 9 to 59 months need only 1 catch-up dose for Hib

Cancer Screening

- Breast △ 2016
- Colon △ 2016
- Cervical △ 2012
- Lung △ 2013
- Prostate △ 2012
- Cancer screening in older patients

Leading Causes of Death in the US

- “B” – Biennial screening mammogram age 50-74
- Population considered (screening assumes):
  - Asymptomatic, age 40 and older
  - No pre-existing breast cancer or previous diagnosed high risk lesion
  - No known genetic mutation (BRACA1 or BRACA2) or other familial breast cancer syndrome
- Mammography screening proven to decrease mortality from breast cancer
- Digital mammography has essentially replaced film mammography
USPSTF – BREAST CANCER SCREENING 2016: AGE 40-49 = “C”

- “C” – Decision to start screening should be an individual one
- “C” suggests moderate certainty of a small net benefit
- For women 40-49, biennial screening provides the best overall balance of benefit and harms.
- Covered: was “B” recommendation in 2002

USPSTF – BREAST CANCER SCREENING 2016: AGE ≥ 75 = “I”

- “I” No recommendation – insufficient evidence

USPSTF – BREAST CANCER SCREENING 2016: SCREENING METHODS

- “I” primary screening with Digital Breast Tomosynthesis (DBT) = “3D”
  - USPSTF concern is over diagnosis
- “I” adjunctive screening with breast US, MRI, DBT or other methods in women who have dense breasts.
- USPSTF recommends continued research on emerging technologies

DIGITAL BREAST TOMOSYNTHESIS (DBT) = 3D MAMMOGRAPHY

- 3D or DBT – FDA approved in 2011
- Literature and suggests 3D mammography was superior to 2D digital mammogram in detection of cancer
- 3D mammography more effective for “dense breasts”

Breast Density

- Breast density only determined by baseline mammography
- Some states (19 as of July 2016) require women to be told that they have dense breasts at mammogram
- Dense breasts – increased cancer risks

MAMMOGRAPHY SCREENING METHODS

- Should women “choose” 3D versus 2D?
- How should a physician advise their patient on 3D?
- Consider recommending for those women with dense breasts
The New Recommendations:

- Women with an average risk of breast cancer – most women – should begin yearly mammograms at age 45.
- Women should be able to start the screening as early as age 40, if they want to. It's a good idea to start talking to your health care provider at age 40 about when you should begin screening.
- At age 55, women should have mammograms every other year – though women who want to keep having yearly mammograms should be able to do so.
- Regular mammograms should continue for as long as a woman is in good health.
- Breast exams, either from a medical provider or self-exams, are no longer recommended.
- The guidelines are for women at average risk for breast cancer. Women at high risk – because of family history, a breast condition, or another reason – need to begin screening earlier and/or more often. Talk to your medical provider to be sure.

USPSTF Colon Cancer Screening 2016

- “A” Men and women age 50-75 should be screened
- Population: For asymptomatic adults 50 and older with average risk
  - No Inflammatory Bowel Disease, familial polyposis, previous adenomatous polyp or colon cancer
- One in 3 persons diagnosed with colon cancer will die 5 years after diagnosis

USPSTF Colon Cancer Screening Strategies 2016

- Guaiac Based Fecal Occult Blood Test (gFOBT) yearly
- Fecal Immunochemical Test (FIT) yearly
- Stool DNA Test (sDNA) every 1-3 years
- Flexible Sigmoidoscopy (SIG) every 5 years
- SIG every 10 years with annual gFBOT or FIT
- Colonoscopy every 10 years
- Computed Tomographic Colonography (CTC) every 5 years

USPSTF Final Recommendation Statement: Breast Cancer Screening - 2016

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USPSTF Colon Cancer Screening 2016

- The USPSTF does not recommend using one test over another (pros/cons for each); need shared decision making
- Any type of “acceptable” screening is better than no screening
- Not all types of testing are available everywhere
- Increase screening rates

Colorectal Cancer Occurrence

Trends in Colorectal Cancer Incidence and Death Rates by Sex, US, 1930 - 2010

Note: Data are shown for the period 1930-2010 because data were collected for earlier periods. Data in the mortality surveillance reports of the National Cancer Institute (NCI) using the International Classification of Diseases (ICD) coding system for mortality vary over time. Reporting of the International Classification of Diseases for Oncology, 3rd edition (ICD-O-3) coding systems shifted from 2003 to 2010. The data were abstracted by the Surveillance, Epidemiology, and End Results (SEER) Program, National Cancer Institute, National Cancer Institute, National Center for Health Statistics, Centers for Disease Control and Prevention, National Cancer Institute, Surveillance Research Program, 2014.
**NEWER COLON CANCER SCREENING TESTS**

- April 13, 2016 – FDA approved SEPT9 blood-based screening tests
- April 3, 2014 – Multitarget Stool DNA Testing
  - sDNA detected significantly more cancers than FIT but had more false positives. (Higher sensitivity, lower specificity)
- Cologuard® > sDNA. FDA approved August, 2014

**USPSTF COLON CANCER SCREENING 2016**

- "C": Selective screening age 76-85
- "D": Adults > 85 years
- "I": CTC and sDNA

**USPSTF CERVICAL CANCER SCREENING 2012**

- Under age 21: No screening
- 21-29: Pap smears (cytology) alone, begins (regardless of sexual activity) and repeat every 3 years
- 30-65: Pap smears (cytology) every 3 years; or, cytology with HPV (co-testing) every 5 years – preferred
- Above age 65: Stop screening if 3 regular pap results and 2 consecutive negative HPV results in the past 10 years
- After hysterectomy: No screening

**“PAP APP”**

- American Society for Colposcopy and Cervical Pathology
- Both screening and abnormal PAP management

**LUNG CANCER SCREENING (DECEMBER 2013)**

- Annual Low-Dose Computed Tomography (LDCT)
  - Smoked more than 30 pack-years
  - Continue to smoke, or quit within past 15 years
  - Age 55-77 years old
- Considerations for annual LDCT Screening:
  - Consider benefits versus harms
  - Counseling and shared decision making; increase surgical risk with HF, severe COPD, poor functional status
  - For every 10 lung cancer deaths there are 3 deaths due to invasive testing / surgical treatments
- Stop if:
  - Quit smoking more than 15 years ago
  - Develops heart problem (decrease life expectancy or not willing to be “treated”)

**USPSTF PROSTATE CANCER SCREENING 2012**

- "D": USPSTF recommends against “routine use of PSA to screen for prostate cancer”
- Population for screening:
  - Regardless of age
  - No risk factors, no symptoms
- Risks: Age, African American, Family History, Agent Orange, known BRAC gene mutation
EARLY DETECTION OF PROSTATE CANCER: AUA 2013

- Does not make distinction between early detection and screening for prostate cancer
- “C” No screening < age 40
- “C” No screening age 40-54, at average risk
- “B” Shared decision making, age 55-69 (every 2 years)
- “C” Stop screening age 70, or life expectancy less than 10-15 years

CANCER SCREENING IN OLDER PATIENTS

Choosing Wisely Campaign

- Cancer is second leading cause of death on persons > 65 years
- Individualized
- Weighing benefits and harms in relation to patient’s values and preferences
- Life expectancy < 10 years – Stop colon, breast screening and prostate testing
- Life expectancy > 10 years continued breast and colon
  1. Colon – Stop age 75 or life expectancy < 10 years (assuming no risk factors or personal history of colon cancer)
  2. Cervical – Stop age 65 (assuming adequate screening and not high risk)
  3. Breast – Stop age 75

CHEMOPROPHYLAXIS / COUNSELING / OTHER SCREENING

- Hepatitis C (Δ 2016)
- Aspirin (Δ 2016)
- Lipids / Statins / Cardiovascular (Δ 2016)
- AAA (Δ 2014)
- STI
  - HIV Δ 2013
  - Chlamydia/GC Δ 2014
  - Syphilis Δ 2016
- TB

USPSTF HEPATITIS C VIRUS (HCV) 2013

- HCV prevalence in US is 1.6%; ¾ in patients born 1945-65.
- “B” – screen for HCV in persons at high risk (especially drug use); also blood products before 1992; unregulated tattoos
- “B” – Offer 1-time screening for HCV in adults born 1945-1965
- Since 2011: Antiviral treatment prevents long-term health complications of HCV infection (cirrhosis, liver failure, hepatic cell carcinoma)
- SVR (sustained virologic response) improved clinical outcomes

ASPIRIN: USPSTF 2016

- New “B” Use low-dose aspirin to prevent CV disease and colorectal cancer if:
  - Age 50-59
  - 10% or greater CV risk
  - Not at high risk for bleeding
  - Life expectancy of > 10 years
  - Willing to take Low-Dose ASA for 10 years
- New “C”
  - Age 60-69 and 10% or greater CV risk; individual
- New “I”
  - Age 70 and older, younger than 50

ASPIRIN

- Need to address benefits and harms of aspirin

- Previously
  - Men, age 45 to 79 to prevent myocardial infarction
  - Women age 55 to 79 to prevent stroke
  - Younger people at risk for CHD
  - Stop age 79
USPSTF LIPIDS/STATINS 2016 & ACC/AHA 2013

- Rx based on patients’ risk of ASCVD event – not lipid levels

- Primary prevention (no previous ASCVD event)
  - Use Pooled Cohort Equation (cvriskcalculator.com); may overestimate risk
  - USPSTF Rx statins if ≥ 10% ASCVD risk*
  - ACC/AHA Rx statins if ≥ 7.5% ASCVD risk*

- Secondary prevention (ASCVD event) — high intensity statins

* With one or more ASCVD risk: LDL – C ≥ 190, HDL ≤ 40, diabetes, smoking

AAA

- 2005 1-time ultrasound screening for AAA in men, age 65 – 75, who have ever smoked
- Repair AAA ≥ 5.5 cm, decreases AAA related mortality

HIV SCREENING 2013

- “A”, HIV screening men or women at increased risk
  - Pregnancy
  - Age 15-65 (younger and older, if at increased risk)
  - Risks: men, active injection drug users, those who have acquired or requested testing, unprotected sex
- HIV is treatable – Don’t forget PrEP (Pre-exposure prophylaxis)
- “C” if not at increased risk

STI: USPSTF 2013-2016 COMBINED

- “A”: Screen sexually active, non-pregnant women, at an increased risk for chlamydia, GC, HIV and Syphilis
  - High risk sexual behavior
  - Sexually active and age < 25 (including adolescents) ——> GC / Chlamydia
- “A”: Screen all pregnant women for Hep B, HIV and Syphilis; additionally — all pregnant women for Chlamydia/GC if at increased risk
- “A”: Screen sexually active men at increased risk for HIV and Syphilis
- “A”: Do not screen women and men who are NOT at increased risk for STI
- “D” Herpes Simplex: Treating asymptomatic does not improve long-term outcomes.
- Know your population demographics for STI

TB

- Interferon-Gamma Release Assay (IGRA)
- QuantiFERON®-TB Gold is an IGRA proven to be reliable in screening for latent TB
CONCLUSION

- Guidelines Change: USPSTF, CDC/ACIP, other
- Real-world clinical application of preventive guidelines can be challenging
  - 4 principles: evidence-based, individualized, opportunistic, prioritized
- Family physician's role is pivotal
  - Physicians know their patients, so are able to individualize, prioritize and be opportunistic