ICSI Institute for Clinical Systems Improvement

ICSI has endorsed with qualifications the United States Preventive Services Task Force (USPSTF) recommendations for adults. These recommendations have been reviewed by the 2014 ICSI Preventive Services work group, utilizing the ICSI Endorsement Process: C. Bass, D. Brink, S. Diem, A. Gravely, L. Harvey, M. Maciosek, L. Milteer, P. Rothe, L. Solberg, and J. Wilkinson. Additional work group information, including the members declared conflicts of interest.

Each screening topic listed below includes the benefits and potential harms of all relevant recommendations, as well as links to the original USPSTF material and any implementation tools that apply.

For certain recommendations, the ICSI work group has added qualifications. These are denoted with an *.

The United States Preventive Services Task Force (USPSTF) is not a sponsor of, affiliated with nor does it endorse ICSI or the ICSI Preventive Services work group. The USPSTF has not reviewed ICSI's process for endorsement of guidelines. The following ICSI endorsement and conclusions are solely the consensus of the ICSI Preventive Services work group using the ICSI Endorsement Process.

The ICSI Preventive Services work group recognizes that health care systems may need to initially focus their efforts on the reliable delivery of selected high-value preventive services. By doing so, limited resources may be directed to those services that produce the largest health impacts with favorable cost effectiveness.

Text in blue in this document indicates a linked corresponding topic.

The USPSTF assigns each of its recommendations a Grade of Recommendation and a Level of Certainty. The ICSI Preventive Services work group feels it is also necessary to indicate which preventive services *must*, *should* or *could* be recommended to patients, and which services *should not* be recommended. The work group has categorized the USPSTF screening topics into the following levels:

Level I: Preventive services for which clinicians and health systems *must* assess the need. These services *must* be recommended to each patient, as they have the highest value and are worthy of attention at every opportunity.
Alcohol Misuse: Screening and Behavioral Counseling Interventions in Primary Care
Aspirin for the Prevention of Cardiovascular Disease: Preventive Medication
Blood Pressure in Adults (Hypertension): Screening
Breast Cancer: Screening*
Cervical Cancer: Screening
Chlamydial and Gonorrhea: Screening
Colorectal Cancer: Screening*

Lipid Disorders in Adults (Cholesterol, Dyslipidemia): Screening
Tobacco Use in Adults and Pregnant Women: Counseling and Interventions
Level II: Preventive services for which clinicians and care systems *should* assess the need. These services *should* be recommended to each patient as they have value but less than those in Level I.
Abdominal Aortic Aneurysm: Screening
Depression in Adults: Screening
Folic Acid to Prevent Neural Tube Defects Preventive Medication
Hepatitis C: Screening
Human Immunodeficiency Virus (HIV) Infection: Screening
Intimate Partner Violence Screening, and Elderly and Vulnerable Adult Abuse Screening
Lung Cancer: Screening*
Obesity in Adults: Screening and Management
Osteoporosis: Screening*
Level III: Preventive services that clinicians and care systems *could* provide to patients, but only after careful consideration of the costs and benefits. Providing these services is left to the judgment of individual care systems, clinicians and their patients.
Cognitive Impairment in Older Adults: Screening
Drug Use, Illicit: Screening
Hearing Loss in Older Adults: Screening
Impaired Visual Activity in Older Adults: Screening
Prostate Cancer: Screening
Sexually Transmitted Infections: Behavioral Counseling
Skin Cancer: Screening
Thyroid Dysfunction: Screening
Vitamin D and Calcium to Prevent Fractures: Preventive Medication
Level IV: Preventive services that are not supported by evidence and *should not* be recommended.
Carotid Artery Stenosis: Screening
Chronic Obstructive Pulmonary Disease (COPD): Screening
Coronary Heart Disease: Screening with Electrocardiography
Ovarian Cancer: Screening

Level I Services: Preventive services for which clinicians and health systems *must* assess the need. These services *must* be recommended to each patient, as they have the highest value and are worthy of attention at every opportunity.

Topic: Alcohol Misuse: Screening and Behavioral Counseling Interventions in Primary Care

The USPSTF recommendations are fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"Clinicians screen adults ages 18 years or older for alcohol misuse and provide persons engages in risky or hazardous drinking with brief behavioral counseling interventions to reduce alcohol misuse."** 2. **"The current evidence is insufficient to assess the balance of benefits and harms of screening and behavioral counseling interventions in primary care settings to reduce alcohol misuse in adolescents."** (USPSTF Last Revised 2013)	Grade of Recommendation: 1. B 2. I Statement
"Benefits: The USPSTF found adequate evidence that brief behavioral counseling interventions are effective in reducing heavy drinking episodes in adults engaging in risky or hazardous drinking. These interventions also reduce weekly alcohol consumption rates and increase adherence to recommended drinking limits. Direct evidence about the effectiveness of brief behavioral counseling interventions in pregnant women engaging in alcohol use is more limited. However, studies in the general adult population show that such interventions reduce alcohol consumption and increase adherence to recommended drinking limits among women of childbearing age. The USPSTF found insufficient evidence of the effect of screening for alcohol misuse and brief behavioral counseling interventions on outcomes in adolescents. **Harms:** There are minimal data to assess the magnitude of harms of screening for alcohol misuse or of consequent brief behavioral counseling interventions in any population. However, no studies have identified direct evidence of harms. Thus, given the non-invasive nature of the screening process and behavioral counseling interventions, the related harms are probably small to none. **Benefits-Harms Assessment:** The USPSTF concludes with moderate certainty that there is a moderate net benefit to screening for alcohol misuse and brief behavioral counseling interventions in the primary care setting for adults ages 18 years or older. The evidence on screening for alcohol misuse and brief behavioral counseling interventions in the primary care setting for adolescents is insufficient, and the balance of benefits and harms cannot be determined."	
Relevant Resources: **http://www.uspreventiveservicestaskforce.org/uspstf12/alcmisuse/alcmisusefinalrs.htm**	
Implementation Tools and Strategies: **Screening and Behavioral Counseling Interventions to Reduce Alcohol Misuse**	

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Topic: Aspirin for the Prevention of Cardiovascular Disease: Preventive Medication

The USPSTF recommendations are fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"Aspirin use for men ages 45 to 79 years when the potential benefit of a reduction in myocardial infarction outweighs the potential harm of an increase in gastrointestinal hemorrhage."** 2. **"Aspirin use for women ages 55 to 79 years when the potential benefit of a reduction in ischemic stroke outweighs the potential harm of an increase in gastrointestinal hemorrhage."** 3. **"The current evidence is insufficient to assess the balance of benefits and harms of the use of aspirin for cardiovascular disease prevention in men and women age 80 years or older."** 4. **"Against the use of aspirin for stroke prevention in women younger than age 55 years and for myocardial infarction prevention in men younger than age 45 years."** (USPSTF Last Revised 2009 – Update in Progress)	Grade of Recommendation: 1. A 2. A 3. I Statement 4. D
"Benefits: The USPSTF found good evidence that aspirin decreases the incidence of myocardial infarction in men and ischemic strokes in women. **Harms:** The USPSTF found good evidence that aspirin increases the incidence of gastrointestinal bleeding and fair evidence that aspirin increases the incidence of hemorrhagic strokes. **Benefits-Harms Assessment**: The USPSTF concludes that, for men age 45 to 79 years whose benefit due to a reduction in myocardial infarctions exceeds the harm because of an increase in gastrointestinal bleeding, there is high certainty that the net benefit is substantial. The USPSTF concludes that, for women age 55 to 79 years whose benefit due to a reduction in ischemic stroke exceeds the harm because of gastrointestinal bleeding, there is high certainty that the net benefit is substantial. The USPSTF concludes that, for men and women 80 years or older, the evidence is insufficient to assess the balance of benefits and harms. The USPSTF concludes that, for men 44 years or younger and women 54 years or younger, the potential benefits of reducing myocardial infarction in men or ischemic stroke in women are small, and there is moderate certainty that the benefits do not outweigh harms."	
Relevant Resources: **http://www.uspreventiveservicestaskforce.org/uspstf/uspsasmi.htm**	

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Topic: Blood Pressure in Adults (Hypertension): Screening

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"Screening for high blood pressure in adults age 18 years and older."** (USPSTF Last Revised 2007 – Update in Progress)	Grade of Recommendation: 1. A
"Benefits: The USPSTF found good evidence that treatment of high blood pressure in adults substantially decreases the incidence of cardiovascular events. **Harms:** The USPSTF found good evidence that screening and treatment for high blood pressure causes few major harms. **Benefits-Harms Assessment**: The USPSTF concludes that there is high certainty that the net benefit of screening for high blood pressure in adults is substantial."	
Relevant Resources: **http://www.uspreventiveservicestaskforce.org/uspstf/uspshype.htm**	
ICSI Supplemental Information: For additional resources refer to the ICSI **Diagnosis and Management of Hypertension** document.	

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Topic: Breast Cancer: Screening

The USPSTF recommendations are endorsed by the ICSI Preventive Services work group with qualifications:	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"Biennial screening mammography for women ages 50 to 74 years."** 2. **"The decision to start regular, biennial screening mammography before the age of 50 years should be an individual one and take patient context into account, including the patient's values regarding specific benefits and harms."** 3. **"That the current evidence is insufficient to assess the additional benefits and harms of screening mammography in women age 75 years or older."** 4. **"Against teaching breast self-examination (BSE)."** 5. **"That the current evidence is insufficient to assess the additional benefits and harms of clinical breast examination (CBE) beyond screening mammography in women age 40 years or older."** 6. **"That the current evidence is insufficient to assess the additional benefits and harms of either digital mammography or magnetic resonance imaging (MRI) instead of film mammography as screening modalities for breast cancer."** (USPSTF Last Revised 2009 – Update in Progress)	Grade of Recommendation: 1. B 2. C 3. I Statement 4. D 5. I Statement 6. I Statement
"Benefits: There is convincing evidence that screening with film mammography reduces breast cancer mortality, with a greater absolute reduction for women ages 50 to 74 years than for women ages 40 to 49 years. The strongest evidence for the greatest benefit is among women ages 60 to 69 years. Among women age 75 years or older, evidence of benefits of mammography is lacking. Adequate evidence suggests that teaching BSE does not reduce breast cancer mortality. The evidence for additional effects of CBE beyond mammography on breast cancer mortality is inadequate. The evidence for benefits of digital mammography and MRI of the breast, as a substitute for film mammography, is also lacking.	

Harms:
The harms resulting from screening for breast cancer include psychological harms, unnecessary imaging tests and biopsies in women without cancer, and inconvenience due to false-positive screening results. Furthermore, one must also consider the harms associated with treatment of cancer that would not become clinically apparent during a woman's lifetime (over-diagnosis), as well as the harms of unnecessary earlier treatment of breast cancer that would have become clinically apparent but would not have shortened a woman's life. Radiation exposure (from radiologic tests), although a minor concern, is also a consideration.

Adequate evidence suggests that the overall harms associated with mammography are moderate for every age group considered, although the main components of the harms shift over time. Although false-positive test results, over-diagnosis and unnecessary earlier treatment are problems for all age groups, false-positive results are more common for women ages 40 to 49 years, whereas over-diagnosis is a greater concern for women in the older age groups.

There is adequate evidence that teaching BSE is associated with harms that are at least small. There is inadequate evidence concerning harms of CBE.

Benefits-Harms Assessment:
For biennial screening mammography in women ages 40 to 49 years, there is moderate certainty that the net benefit is small. Although the USPSTF recognizes that the benefit of screening seems equivalent for women ages 40 to 49 years and 50 to 59 years, the incidence of breast cancer and the consequences differ. The USPSTF emphasizes the adverse consequences for most women – who will not develop breast cancer – and therefore use the number needed to screen to save one life as its metric. By this metric, the USPSTF concludes that there is moderate evidence that the net benefit is small for women ages 40 to 49 years.

For biennial screening mammography in women ages 50 to 74 years, there is moderate certainty that the net benefit is moderate.

For screening mammography in women 75 years or older, evidence is lacking, and the balance of benefits and harms cannot be determined.

For the teaching of BSE, there is moderate certainty that the harms outweigh the benefits.

For CBE as a supplement to mammography, evidence is lacking, and the balance of benefits and harms cannot be determined.

For digital mammography and MRI as a replacement for mammography, the evidence is lacking, and the balance of benefits and harms cannot be determined."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/uspstf09/breastcancer/brcanrs.htm

ICSI Preventive Service Work Group Qualifications:
Counseling messages for effective shared decision-making: All women over age 40 should routinely be given the opportunity to receive information about breast cancer screening and informed decision-making. The decision regarding age of initiation and frequency of screening should be made after helping women understand potential benefits, harms and limitations of mammography. This decision should also take into account the patient's age, risk stratification (http://www.cancer.gov/bcrisktool), personal values, concerns and individual circumstances *(Mandelblatt, 2009 [Low Quality Evidence]; Nelson, 2009 [Systematic Review])*.

Various patient decision aids are available and can be useful tools; for example, this Web site provides an interactive screening mammography decision aid created by the University of Sydney: **http://www.mammogram.med.usyd.edu.au/.**

Implementation Tools and Strategies
Medications for the Risk Reduction of Primary Breast Cancer in Women
Risk Assessment, Genetic Counseling and Genetic Testing for BRCA-related Cancer in Women

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Topic: Cervical Cancer: Screening

The USPSTF recommendations are fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"Screening for cervical cancer in women ages 21 to 65 years with cytology (Pap smear) every 3 years or, for women ages 30 to 65 years who want to lengthen the screening interval, screening with a combination of cytology and human papillomavirus (HPV) testing every 5 years. See the Clinical Considerations for discussion of cytology method, HPV testing and screening interval."** 2. **"Against screening for cervical cancer in women younger than age 21 years."** 3. **"Against screening for cervical cancer in women older than age 65 years who have had adequate prior screening and are not otherwise at high risk for cervical cancer. See the Clinical Considerations for discussion of adequacy of prior screening and risk factors."** 4. **"Against screening for cervical cancer in women who have had a hysterectomy with removal of the cervix and who do not have a history of a high-grade precancerous lesion (e.g., cervical intraepithelial neoplasia [CIN] grade 2 or 3) or cervical cancer."** 5. **"Against screening for cervical cancer with HPV testing, alone or in combination with cytology, in women younger than age 30 years."** (USPSTF Last Revised 2012)	Grade of Recommendation: 1. A 2. D 3. D 4. D 5. D

"Benefits:

Women Ages 21 to 65 Years

There is convincing evidence that screening women ages 21 to 65 years with cytology every three years substantially reduces cervical cancer incidence and mortality. Among women ages 30 to 65 years, there is adequate evidence that screening with a combination of cytology and HPV testing (co-testing) every five years provides benefits similar to those seen with cytology screening alone every three years.

Among women younger than age 30 years, there is adequate evidence that screening with HPV testing (alone or in combination with cytology) confers little to no benefit.

Women Younger Than Age 21 Years

There is adequate evidence that screening women younger than age 21 years (regardless of sexual history) does not reduce cervical cancer incidence and mortality compared with beginning screening at age 21 years.

Women Older Than Age 65 Years

There is adequate evidence that screening women older than age 65 years who have had adequate prior screening and are not otherwise at high risk provides little to no benefits.

Women After Hysterectomy

There is convincing evidence that continued screening after hysterectomy with removal of the cervix for indications other than a high-grade precancerous lesion or cervical cancer provides no benefits.

Harms:

Screening with cervical cytology or HPV testing can lead to harm, and the harms of screening can take many forms. Abnormal test results can lead to more frequent testing and invasive diagnostic procedures, such as colposcopy and cervical biopsy. Evidence from randomized, controlled trials and observational studies indicates that harms from these diagnostic procedures include vaginal bleeding, pain, infection and failure to diagnose (due to inadequate sampling). Abnormal screening test results are also associated with mild psychological harms; short-term increases in anxiety, distress, and concern about health have been reported with cytology and HPV testing.

Harms of Treatment of Screening – Detected Disease

The harms of treatment include risks from the treatment procedure itself and the potential downstream consequences of treatment. Summary evidence from observational studies indicates that some treatments for precancerous lesions (such as cold-knife conization and loop excision) are associated with adverse pregnancy outcomes, such as preterm delivery, that can lead to low birth weight in infants and perinatal death. Evidence is convincing that many precancerous cervical lesions will regress and that other lesions are so indolent and slow growing that they will not become clinically important over a woman's lifetime; identification and treatment of these lesions constitute over-diagnosis. It is difficult to estimate the precise magnitude of over-diagnosis associated with any screening or treatment strategy, but it is of concern because it confers no benefit and leads to unnecessary surveillance, diagnostic tests and treatments with the associated harms.

Women Ages 21 to 65 Years
There is adequate evidence that the harms of screening for cervical cancer with cytology alone or in combination with HPV testing in women age 30 to 65 years are moderate. Positive screening results are more common with strategies that include HPV testing than with strategies that use cytology alone. Therefore, the likelihood of prolonged surveillance and overtreatment may increase with strategies that incorporate HPV testing. Cervical treatments may increase the risk for adverse pregnancy outcomes (for example, cervical insufficiency and preterm delivery) in women who have not yet completed childbearing.

Women Younger Than Age 30 Years
There is adequate evidence that the harms of HPV testing (alone or in combination with cytology) in women younger than age 30 years are moderate.

Women Younger Than Age 21 Years
There is adequate evidence that the harms of screening in women younger than age 21 years are moderate.

Women Older Than Age 65 Years
There is adequate evidence that the harms of screening in women older than age 65 years who have had adequate prior screening and are not otherwise at high risk are at least small.

Women After Hysterectomy
There is adequate evidence that screening after hysterectomy among women who do not have a history of a high-grade precancerous lesion or cervical cancer is associated with harms.

Benefits-Harms Assessment:
For women younger than age 21 years, regardless of sexual history, there is moderate certainty that the harms of screening outweigh the benefits.

Assessment of Risk:
It is well established that HPV infection is associated with nearly all cases of cervical cancer. Other factors that put a woman at increased risk for cervical cancer include HIV infection, a compromised immune system, in utero exposure to diethylstilbestrol, and previous treatment of a high-grade precancerous lesion or cervical cancer.

Women who have had a hysterectomy with removal of the cervix and who do not have a history of a high-grade precancerous lesion or cervical cancer are not at risk for cervical cancer and should not be screened. Women who had their cervix removed during surgery for ovarian or endometrial cancers are not at high risk for cervical cancer and would not benefit from screening. Clinicians should confirm through review of surgical records or direct examination that the cervix was removed."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/uspstf/uspscerv.htm

Implementation Tools and Strategies:
Screening for Cervical Cancer

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Topic: Chlamydial and Gonorrhea: Screening (Updated September 2014)

The USPSTF recommendations are fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"Screening for chlamydia in sexually active women age 24 years and younger and in older women who are at increased risk for infection."** 2. **"Screening for gonorrhea in sexually active women age 24 years and younger and in older women who are at increased risk for infection."** 3. **"The current evidence is insufficient to assess the balance of benefits and harms of screening for chlamydia and gonorrhea in men."** (USPSTF Updated September 2014)	Grade of Recommendation: 1. B 2. B 3. I Statement

"Benefits:
The USPSTF found adequate direct evidence that screening reduces complications of chlamydial infection in women who are at increased risk, with a moderate magnitude of benefit.

The USPSTF found adequate evidence that screening for gonorrhea results in a moderate magnitude of benefit based on the large proportion of cases that are asymptomatic, the effectiveness of antibiotic treatment to reduce infections, and the high morbidity associated with untreated infections.

The USPSTF found inadequate evidence that screening for chlamydia and gonorrhea reduces complications of infection and transmission or acquisition of either disease or HIV in men. The magnitude of benefit is unknown.

Harms:
The USPSTF found adequate evidence that the harms of screening for chlamydia and gonorrhea are small to none.

Assessment:
The USPSTF concludes with moderate certainty that screening for chlamydia is associated with moderate net benefit in all sexually active women aged 24 years or younger and in older women who are at increased risk for infection.

The USPSTF concludes with moderate certainty that screening for gonorrhea is associated with moderate net benefit in all sexually active women aged 24 years or younger and in older women who are at increased risk for infection.

The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for chlamydia and gonorrhea in men.

Assessment of Risk:
Prevalence of chlamydial infection varies widely among patient populations. African-American and Hispanic women have a higher prevalence of infection than the general population in many communities and settings. Among men and women, increased prevalence rates are also found in incarcerated populations, military recruits, and patients at public sexually transmitted infection clinics."

Relevant Resources:
Chylamdia and Gonorrhea Screening

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Topic: Colorectal Cancer: Screening

The USPSTF recommendations are endorsed by the ICSI Preventive Services work group with qualifications:	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"Screening for colorectal cancer using fecal occult blood testing, sigmoidoscopy or colonoscopy in adults beginning at age 50 years and continuing until age 75 years. The risks and benefits of these screening methods vary."** 2. **"Against routine screening for colorectal cancer in adults ages 76 to 85 years. There may be considerations that support colorectal cancer screening in an individual patient."** 3. **"Against screening for colorectal cancer in adults older than age 85 years."** 4. **"The evidence is insufficient to assess the benefits and harms of computed tomographic colonography and fecal DNA testing as screening modalities for colorectal cancer."** (USPSTF Last Revised 2008 – Update in Progress)	Grade of Recommendation: 1. A 2. C 3. D 4. I Statement

"Benefits:
There is convincing evidence that screening with any of the three recommended tests reduces colorectal cancer mortality in adults ages 50 to 75 years. Follow-up of positive screening test results requires colonoscopy regardless of the screening test used. Because of the harms of colonoscopy described below, the chief benefit of less invasive screening tests is that they may reduce the number of colonoscopies required and their attendant risks.
There is adequate evidence that the benefits of detection and early intervention decline after age 75 years. The lead time between the detection and treatment of colorectal neoplasia and a mortality benefit is substantial, and competing causes of mortality make it progressively less likely that this benefit will be realized with advancing age.

Harms:
The primary established harms of colorectal cancer screening are due to the use of invasive procedures initially or in the evaluation sequence. Harms may arise from the preparation the patient undergoes to have the procedure, the sedation used during the procedure, and the procedure itself.

Colonoscopy
Evidence is adequate to estimate the harms of colonoscopy. In the United States, perforation of the colon occurs in an estimated 3.8 per 10,000 procedures. Serious complications – defined as deaths attributable to colonoscopy or adverse events requiring hospital admission, including perforation, major bleeding, diverticulitis, severe abdominal pain, and cardiovascular events – are significantly more common, occurring in an estimated 25 per 10,000 procedures.

Flexible Sigmoidoscopy
Evidence is adequate that serious complications occur in approximately 3.4 per 10,000 procedures.

Fecal Tests
Evidence about the harms of fecal tests is lacking (inadequate), but the USPSTF assesses them to be no greater than small.

CT Colonography
Computed tomographic colonography images more than the colon. Up to 16% of people having their first CT colonography are found to have extracolonic abnormalities that require further testing. Evidence is inadequate to assess the clinical consequences of identifying these abnormalities, but there is potential for both benefit and harm. Potential harms arise from additional diagnostic testing and procedures for lesions found incidentally, which may have no clinical significance. This additional testing also has the potential to burden the patient and adversely impact the health system.
The risks for perforation associated with screening CT colonography in research settings are estimated to be 0 to 6 per 10,000 CT colonography studies. However, these estimates may be higher than what can be expected in screened populations because the studies included symptomatic populations.
Radiation exposure resulting from CT colonography is reported to be 10 mSv per examination. The harms of radiation at this dose are not certain, but the linear no-threshold model predicts that one additional individual per 1,000 would develop cancer in his or her lifetime at this level of exposure. The lifetime cumulative radiation risk from the use of CT colonography to screen for colorectal cancer should be considered in the context of the growing cumulative radiation exposure from the use of other diagnostic and screening tests that involve radiation exposure. On the other hand, improvements in CT colonography technology and practice are lowering this radiation dose.

Benefits-Harms Assessment:
The USPSTF concludes that, for fecal occult blood testing, flexible sigmoidoscopy and colonoscopy to screen for colorectal cancer, there is high certainty that the net benefit is substantial for adults ages 50 to 75 years. Go to **Clinical Considerations** for a comparison of the regimens for each of these tests.
The USPSTF concludes that, for adults ages 76 to 85 years, there is moderate certainty that the net benefits of screening are small.

The USPSTF concludes that, for adults older than age 85 years, there is moderate certainty that the benefits of screening do not outweigh the harms.
The USPSTF concludes that there is insufficient evidence to assess the sensitivity and specificity of fecal DNA testing for colorectal neoplasia, and that therefore the balance of benefits and harms cannot be determined for this test.
The USPSTF concludes that, for CT colonography, evidence to assess the harms related to extracolonic findings is insufficient, and the balance of benefits and harms cannot be determined."

ICSI Work Group Qualifications:

1) If available, FIT is preferred over guaiac-based fecal occult blood testing. The fecal immunochemical testing does not require dietary modification for patients as with the guaiac-based test and does not yield false-negative results in the presence of high-dose vitamin C supplementation. It is more specific for lower gastrointestinal bleeding and is therefore preferred over gFOBT as a screening test (*Allison, 2007)*.
2) CT colonography is a colorectal screening option approved by the American Cancer Society for average-risk individuals *(Levin, 2008)*. It is less invasive and does not require procedural sedation but currently has limited availability, is not covered by most payers, and has trouble identifying flat and depressed polyps as well as polyps of less than 5mm in size. It may be an option for colorectal cancer screening in the following clinical situations: after incomplete screening or diagnostic colonoscopy, for anticoagulated patients who cannot safely discontinue anticoagulation therapy.
3) African Americans or American Indians/Alaska Natives should be screened beginning at age 45 years *(Perdue, 2008; Agrawal, 2005)*
4) Several patient populations are at increased risk and may benefit from screening/surveillance at an earlier age or more frequent interval.
    a) Patients with one first-degree relative with either colorectal cancer or adenomatous polyps diagnosed before age 60 years should be evaluated with colonoscopy every five years beginning at age 40 or 10 years before the age of the youngest case in the immediate family.
    b) Patients with two or more first-degree relatives diagnosed at any age with colorectal cancer or adenomatous polyps should be evaluated with colonoscopy every five years beginning at age 40 or 10 years before the age of the youngest case in the immediate family.
    c) Patients with inflammatory bowel disease, chronic ulcerative colitis and Crohn's disease should be evaluated with colonoscopy every one to two years starting eight years after the onset of pancolitis or 12-15 years after the onset of left-sided colitis.
    d) Patients with genetic diagnosis of familial adenomatous polyposis (FAP) or suspected FAP without genetic testing evidence should be evaluated with annual flexible sigmoidoscopy beginning at age 10 to 12 years and should receive genetic counseling.
    e) Patients with genetic or clinical diagnosis of hereditary non-polyposis colorectal cancer should be evaluated with colonoscopy every one to two years beginning at ages 20 to 25 years or 10 years before the age of the youngest case in the immediate family.

In late 2014, the U.S. Food and Drug Administration has approved Cologuard, a screening test using a stool sample, that detects the presence of red blood cells and DNA mutations that may indicate the presence of certain kinds of abnormal growths that may be colon cancer or precursors to cancer. The Centers for Medicare and Medicaid Services has also found that the of evidence of effectiveness of Cologuard is sufficient to cover this test as option for colorectal cancer screening for asymptomatic, average risk beneficiaries.

Relevant Resources:

http://www.uspreventiveservicestaskforce.org/uspstf/uspscolo.htm
FDA Cologuard Approval Statement
CMS Proposed Coverage Decision

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Topic: Lipid Disorders in Adults (Cholesterol, Dyslipidemia): Screening

The USPSTF recommendations are fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
Men 1. **"Screening men age 35 years and older for lipid disorders."** 2. **"Screening men ages 20 to 35 years for lipid disorders if they are at increased risk for coronary heart disease."** **Women at increased risk** 3. **"Screening women age 45 years and older for lipid disorders if they are at increased risk for coronary heart disease."** 4. **"Screening women ages 20 to 45 years for lipid disorders if they are at increased risk for coronary heart disease."** **Young men and all women not at increased risk** 5. **"No recommendation for or against routine screening for lipid disorders in men ages 20 to 35 years or women age 20 years and older who are not at increased risk for coronary heart disease."** (USPSTF Last Revised 2008 – Update in Progress)	Grade of Recommendation: 1. A 2. B 3. A 4. B 5. C

"Benefits:
There is good evidence that lipid-lowering drug therapy substantially decreases the incidence of coronary heart disease in persons with abnormal lipids. The absolute benefits of lipid-lowering treatment depend on a person's underlying risk for coronary heart disease. Men over the age of 35 and women over the age of 45 who are at increased risk will realize a substantial benefit from treatment; younger adults with multiple risk factors for coronary disease, including dyslipidemia, will realize a moderate benefit from treatment; and younger men and women without risk factors for coronary heart disease will realize a small benefit from treatment, as seen in the risk reduction in 10-year CHD event rate.

Harms:
There is good evidence that the harms from screening and treatment are small and include possible labeling and the adverse effects associated with lipid-lowering therapy (e.g., rhabdomyolysis).

Benefits-Harms Assessment:
The USPSTF concludes that the benefits of screening for and treating lipid disorders in all men age 35 years and older and women age 45 years and older at increased risk for coronary heart disease substantially outweigh the potential harms.

The USPSTF concludes that the benefits of screening for and treating lipid disorders in young adults at increased risk for coronary heart disease moderately outweigh the potential harms.

The USPSTF concludes that the net benefits of screening for lipid disorders in young adults not at increased risk for coronary heart disease are not sufficient to make a general recommendation.

Assessment of Risk:
Increased risk, for the purposes of this recommendation, is defined by the presence of any one of the risk factors listed below. The greatest risk for CHD is conferred by a combination of multiple listed factors. While the USPSTF did not use a specific numerical risk to bound this recommendation, the framework used by the USPSTF in making these recommendations relies on a 10-year risk of cardiovascular events:

- Diabetes.
- Previous personal history of CHD or non-coronary atherosclerosis (e.g., abdominal aortic aneurysm, peripheral artery disease, carotid artery stenosis).
- A family history of cardiovascular disease before age 50 years in male relatives or age 60 years in female relatives.
- Tobacco use.
- Hypertension.
- Obesity (BMI ≥ 30)."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/uspstf08/lipid/lipidrs.htm

ICSI Supplemental Information:
For additional resources refer to the ICSI **Lipid Management in Adults** document.

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Topic: Tobacco Use in Adults and Pregnant Women: Counseling and Interventions

The USPSTF recommendations are fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"The USPSTF recommends that clinicians ask all adults about tobacco use and provide tobacco cessation interventions for those who use tobacco products."** 2. **"The USPSTF recommends that clinicians ask all pregnant women about tobacco use and provide augmented, pregnancy-tailored counseling for those who smoke."** (USPSTF Last Revised 2009 – Update in Progress)	Grade of Recommendation: 1. A 2. A

"Benefits:
In non-pregnant adults, the USPSTF found convincing evidence that smoking cessation interventions, including brief behavioral counseling sessions (< 10 minutes) and pharmacotherapy delivered in primary care settings, are effective in increasing the proportion of smokers who successfully quit and remain abstinent for one year. Although less effective than longer interventions, even minimal interventions (< 3 minutes) have been found to increase quit rates. Go to the **Clinical Considerations** section for a discussion of complementary services to which primary care clinicians may refer patients.

The USPSTF found convincing evidence that smoking cessation decreases the risk for heart disease, stroke and lung disease.

In pregnant women, the USPSTF found convincing evidence that smoking cessation-counseling sessions, augmented with messages and self-help materials tailored for pregnant smokers, increases abstinence rates during pregnancy compared with brief, generic counseling interventions alone. Tobacco cessation at any point during pregnancy yields substantial health benefits for the expectant mother and baby. The USPSTF found inadequate evidence to evaluate the safety or efficacy of pharmacotherapy during pregnancy.

Harms:
Finding no published studies that describe harms of counseling to prevent tobacco use in adults or pregnant women, the USPSTF judged the magnitude of these harms to be no greater than small. Harms of pharmacotherapy are dependent on the specific medication used. In non-pregnant adults, the USPSTF judged these harms to be small.

Benefits-Harms Assessment:
The USPSTF concludes that there is high certainty that the net benefit of tobacco cessation interventions in adults is substantial.

The USPSTF also concludes that there is high certainty that the net benefit of augmented, pregnancy-tailored counseling in pregnant women is substantial."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/uspstf09/tobacco/tobaccors2.htm

ICSI Supplemental Information:
For additional resources refer to **Call it Quits Minnesota**

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Level II Services: Preventive services for which clinicians and care systems *should* assess the need. These services *should* be recommended to each patient as they have value, but less than those in Level I.

Topic: Abdominal Aortic Aneurysm: Screening

The USPSTF recommendations are fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"One-time screening for abdominal aortic aneurysm (AAA) by ultrasonography in men ages 65 to 75 years who have ever smoked."** 2. **"Clinicians selectively offer screening for AAA in men ages 65 to 75 years who have never smoked rather than routinely screening all men in this group."** 3. **"The current evidence is insufficient to assess the balance of benefits and harms of screening for AAA in women ages 65 to 75 years who have ever smoked."** 4. **"Against routine screening for AAA in women who have never smoked."** (USPSTF Last Revised 2014)	Grade of Recommendation: 1. B 2. C 3. I Statement 4. D

"Benefits:

Men Ages 65 to 75 Years Who Have Ever Smoked

Four large, population-based, randomized, controlled trials (RCTs) show that invitation to one-time screening for AAA is associated with reduced AAA-specific mortality in men. This benefit begins three years after testing and persists up to 15 years. In addition, risk reduction for AAA rupture and emergency surgery persists up to 10 to 13 years.

In the two highest-quality trials, the relative reduction in AAA-specific mortality after 13 years was 42 to 66%. In the largest trial, where prevalence of AAA was approximately 5% in the screened group, screening was associated with an absolute risk reduction in AAA death of 1.4 per 1,000 men.

Abdominal aortic aneurysms are most prevalent in men who have ever smoked, occurring in approximately 6 to 7% of this population. This prevalence increases the importance of screening in these men because it maximizes the absolute benefit that could be achieved (that is, it improves the likelihood that men in this group will benefit from screening). Convincing evidence shows that one-time screening for AAA with ultrasonography results in a moderate benefit in men ages 65 to 75 years who have ever smoked.

Men Ages 65 to 75 Years Who Have Never Smoked

Screening men overall reduces AAA-specific death, rupture and emergency surgery. However, the lower prevalence of AAA in men who have never smoked (approximately 2%) substantially reduces the absolute benefit (that is, it greatly lowers the probability that men in this group will benefit from screening). Adequate evidence shows that one-time screening for AAA with ultrasonography results in a small benefit in men ages 65 to 75 years who have never smoked.

Women Ages 65 to 75 Years Who Have Ever Smoked

Only one RCT on screening for AAA included women. It detected no difference in the rate of AAA rupture, AAA-specific mortality or all-cause mortality between women invited for screening and the control group. However, the trial was ultimately underpowered to detect differences in health outcomes by sex; as such, the results do not rule out the possibility of a small benefit of screening in this population.

Women age 70 years who have ever smoked have a relatively low prevalence of AAA (approximately 0.8% overall and about 2% for current smokers). Evidence is inadequate to conclude whether one-time screening for AAA with ultrasonography is beneficial in women ages 65 to 75 years who have ever smoked.

Women Who Have Never Smoked

The prevalence of AAA in women who have never smoked is low (0.03 to 0.60% in women ages 50 to 79 years). The evidence also shows no apparent benefit of screening for AAA in women. The USPSTF therefore concludes that adequate evidence shows that the absolute benefit of one-time screening for AAA with ultrasonography in women who have never smoked can effectively be bounded at none or almost none.

Harms:
In the available trials, groups invited to screening were approximately twice as likely as control groups to have any AAA surgery within three to five years, predominantly driven by an increase in elective surgeries. More than 90% of AAAs identified by screening was below the 5.5-cm threshold for immediate repair. Detecting smaller AAAs generally leads to long-term (potentially lifelong) surveillance.

A person's risk for death related to elective surgery for AAA is lower than that for death related to emergency surgery for AAA rupture. However, the increase in the overall rates of detection and surgery in the screening groups still potentially represents a harm. A proportion of AAAs will never rupture because they do not advance to conditions for the rupture to appear or because a person dies of a competing cause.

The exact extent of over-diagnosis and overtreatment is difficult to estimate. One study from Massachusetts General Hospital reviewed 24,000 consecutive autopsies between 1952 and 1975 and found that 75% of the 473 patients who died with an undetected or unoperated AAA had a cause of death not related to the AAA (41% of AAAs were >5.1 cm in diameter). Given that even elective treatment of AAA is associated with some risk for perioperative mortality, overtreatment is an important issue to consider when deciding whether to screen for this condition.

One study reported that women had a higher risk for death related to AAA surgery than men; death rates of women and men were approximately 7% versus 5% for open repair and 2% versus 1% for endovascular repair, respectively. Evidence is limited and conflicting about the effect of screening for AAA on quality of life or psychological status (for example, anxiety). Convincing evidence shows that the harms associated with one-time screening for AAA with ultrasonography are at least small in all populations and potentially higher in women because of their higher risk for operative mortality.

Benefits-Harms Assessment:
The USPSTF concludes with high certainty that screening for AAA with ultrasonography in men ages 65 to 75 years who have ever smoked has a moderate net benefit.

The USPSTF concludes with moderate certainty that screening for AAA with ultrasonography in men ages 65 to 75 years who have never smoked has a small net benefit.

The USPSTF concludes that the evidence is insufficient to determine the balance of benefits and harms of screening for AAA in women ages 65 to 75 years who have ever smoked.

The USPSTF concludes with moderate certainty that the harms of screening for AAA outweigh any potential benefits in women who have never smoked."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/uspstf/uspsaneu.htm

Implementation Tools and Strategies:
Screening for Abdominal Aortic Aneurysm

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Topic: Depression in Adults: Screening

The USPSTF recommendations are fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"Screening adults for depression when staff-assisted depression care supports are in place to assure accurate diagnosis, effective treatment, and follow-up."** 2. **"Against routinely screening adults for depression when staff-assisted depression care supports are not in place. There may be considerations that support screening for depression in an individual patient."** (USPSTF Last Revised 2009 – Update in Progress)	Grade of Recommendation: 1. B 2. C
"Benefits: The USPSTF found good evidence that treating depressed adults and older adults identified through screening in primary care settings with antidepressants, psychotherapy or both decreases clinical morbidity. The USPSTF found good evidence that programs combining depression screening and feedback with staff-assisted depression care supports improve clinical outcomes in adults and older adults. The USPSTF found fair evidence that screening and feedback alone without staff-assisted care supports do not improve clinical outcomes in adults and older adults. **Harms:** The USPSTF found no evidence of harms of screening for depression in adults or older adults. The USPSTF found at least fair-quality evidence that second-generation antidepressants (mostly selective serotonin reuptake inhibitors [SSRIs]) increase suicidal behaviors in adults ages 18 to 29 years, especially those with major depressive disorder (MDD) and those who receive paroxetine. The USPSTF found at least fair-quality evidence that SSRI use is associated with an increased risk for upper gastrointestinal (UGI) bleeding in adults older than age 70 years, with risk increasing with age. **Benefits-Harms Assessment**: The USPSTF concludes that for adults who receive care in clinical practices that have staff-assisted depression care supports in place, there is at least moderate certainty that the net benefit of screening for depression is at least moderate. The USPSTF concludes that for adults who receive care in clinical practices without staff-assisted depression care supports in place, there is at least moderate certainty that the net benefit of screening adults for depression is small."	
Relevant Resources: **http://www.uspreventiveservicestaskforce.org/uspstf09/adultdepression/addeprrs.htm**	
ICSI Supplemental Information: For additional resources refer to the ICSI **Adult Depression in Primary Care** document.	

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Topic: Folic Acid to Prevent Neural Tube Defects Preventive Medication

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	Grade of Recommendation and Level of Certainty as Evaluated by USPSTF
1. **"That all women planning or capable of pregnancy take a daily supplement containing 0.4 to 0.8 mg (400 to 800 μg) of folic acid."** (USPSTF Last Revised 2009 – Update in Progress)	Grade of Recommendation: 1. A
"Benefits: The USPSTF found convincing evidence that supplements containing 0.4 to 0.8 mg (400 to 800 μg) of folic acid in the periconceptional period reduce the risk for neural tube defects. **Harms:** Adequate evidence suggests that folic acid from supplementation at usual doses is not associated with serious harms. **Benefits-Harms Assessment**: The USPSTF concludes that, for women who are planning or capable of pregnancy, there is high certainty that the net benefit is substantial."	
Relevant Resources: **http://www.uspreventiveservicestaskforce.org/uspstf/uspsnrfol.htm**	

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Topic: Hepatitis C: Screening

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	Grade of Recommendation and Level of Certainty as Evaluated by USPSTF
1. **"Screening for hepatitis C virus (HCV) infection in persons at high risk for infection. The USPSTF also recommends offering one-time screening for HCV infection to adults born between 1945 and 1965."** (USPSTF Last Revised 2013)	Grade of Recommendation: 1. B
"Benefits: The USPSTF found no direct evidence on the benefit of screening for HCV infection in asymptomatic adults in reducing morbidity and mortality. However, the USPSTF found adequate evidence that antiviral regimens result in sustained virologic response (SVR) and improved clinical outcomes. The USPSTF found inadequate evidence that counseling or immunization of patients with HCV infection against other infections improves health outcomes, reduces transmission of HCV or changes high-risk behaviors. The USPSTF found inadequate evidence that knowledge of positive status for HCV infection reduces high-risk behaviors. The USPSTF also found inadequate evidence that labor management and breastfeeding strategies in HCV-positive women are effective at reducing risk for mother-to-child transmission. Given the accuracy of the screening test and the availability of effective interventions for HCV infection, the USPSTF concludes that screening is of moderate benefit for populations at high risk for infection. The USPSTF concludes that one-time screening in all adults in the United States born between 1945 and 1965 is also of moderate benefit. **Harms:** The USPSTF found limited evidence on the harms of screening for HCV. Potential harms of screening include anxiety, patient labeling and feelings of stigmatization. The USPSTF found adequate evidence on the harms associated with the diagnostic evaluation used to guide treatment decisions (liver biopsy). These harms include bleeding, infection and severe pain in approximately 1% of persons who had a liver biopsy and death in less than 0.2%. However, the use of liver biopsy to guide treatment decisions is declining, and non-invasive tests have sufficient accuracy to diagnose fibrosis and cirrhosis. Thus, the absolute risk to persons who currently receive a diagnosis of HCV infection and subsequent treatment is probably declining. The USPSTF found adequate evidence that antiviral therapy regimens are associated with a high rate of harms, such as fatigue, headache, flu-like symptoms, hematologic events and rash. However, antiviral therapy is given for a defined duration, serious adverse events are uncommon, and adverse events are self-limited and typically resolve after treatment is discontinued. The USPSTF found adequate evidence that these harms of treatment are small.	

Benefits-Harms Assessment:
The USPSTF concludes with moderate certainty that screening for HCV infection in adults at increased risk for infection and one-time screening in adults in the 1945-1965 birth cohort has moderate net benefit.

Assessment of Risk:
The most important risk factor for HCV infection is past or current injection drug use. Another established risk factor for HCV infection is receipt of a blood transfusion before 1992. Because of the implementation of screening programs for donated blood, blood transfusions are no longer an important source of HCV infection. In contrast, 60% of new HCV infections occur in persons who report injection drug use within the past six months.

Additional risk factors include long-term hemodialysis, being born to an HCV-infected mother, incarceration, intranasal drug use, getting an unregulated tattoo, and other percutaneous exposures (such as in health care workers or from having surgery before the implementation of universal precautions). Evidence on tattoos and other percutaneous exposures as risk factors for HCV infection is limited. The relative importance of these additional risk factors may differ on the basis of geographic location and other factors.

Large population-based studies report an independent association between high-risk sexual behaviors (multiple sex partners, unprotected sex, or sex with an HCV-infected person or injection drug user) and HCV infection. However, HCV seems to be inefficiently transmitted through sexual contact, and observed associations may have been confounded by other high-risk behaviors.

In 1998, the highest prevalence rates of the anti-HCV antibody occurred in persons with significant direct percutaneous exposures, such as injection drug users and persons with hemophilia (60% to 90%); persons with less significant percutaneous exposures involving smaller amounts of blood, such as patients receiving hemodialysis (10 to 30%), had more moderate prevalence rates. Persons engaging in high-risk sexual behaviors (1 to 10%); recipients of blood transfusions (6%); and persons with infrequent percutaneous exposures, such as health care workers (1 to 2%), had the lowest prevalence rates.

Among patients with abnormal results on liver function tests (measurement of aspartate aminotransferase, alanine aminotransferase, or bilirubin) who were tested for reasons other than HCV screening, finding the cause of the abnormality often includes testing for HCV infection and is considered case finding rather than screening; therefore, it is outside the scope of this recommendation.

In 2010, the overall incidence rate of acute HCV infection was 0.3 cases per 100,000 persons and varied by race or ethnicity. The incidence rate for acute hepatitis C was lowest among persons of Asian or Pacific Islander descent and highest among American Indians and Alaskan natives. Blacks had the highest mortality rates from HCV, at 6.5 to 7.8 deaths per 100,000 persons, according to data from 2004 to 2008."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/uspstf/uspshepc.htm

Implementation Tools and Strategies:
Screening for Hepatitis C Virus Infection in Adults

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Topic: Human Immunodeficiency Virus (HIV) Infection: Screening

The USPSTF recommendations are fully endorsed by the ICSI Preventive Services work group.	Grade of Recommendation and Level of Certainty as Evaluated by USPSTF
1. **"Clinicians screen for HIV infection in adolescents and adults ages 15 to 65 years. Younger adolescents and older adults who are at increased risk should also be screened."** 2. **"Clinicians screen all pregnant women for HIV, including those who present in labor who are untested and whose HIV status is unknown."** (USPSTF Last Revised 2013)	Grade of Recommendation: 1. A 2. A

"Benefits:
The USPSTF found convincing evidence that identification and treatment of HIV infection is associated with a markedly reduced risk for progression to AIDS, AIDS-related events and death in individuals with immunologically advanced disease (defined as a CD4 count < 0.200 × 10 cells/L). Adequate evidence shows that initiating combined antiretroviral therapy (ART) earlier (that is, at CD4 counts between 0.200 and 0.500 × 10 cells/L) – when individuals are more likely to be asymptomatic and detected by screening rather than clinical presentation – is also associated with reduced risk for AIDS-related events or death. The USPSTF found convincing evidence that the use of ART is associated with a substantially decreased risk for transmission from HIV-positive persons to uninfected heterosexual partners. Convincing evidence also shows that identification and treatment of HIV-positive pregnant women dramatically reduces rates of mother-to-child transmission. The overall benefits of screening for HIV infection in adolescents, adults and pregnant women are substantial.

Harms:
The USPSTF found convincing evidence that individual antiretroviral drugs, drug classes and combinations are all associated with short-term adverse events; however, many of these events are transient or self-limited, and effective alternatives can often be found. Although the long-term use of certain antiretroviral drugs may be associated with increased risk for cardiovascular and other adverse events, the magnitude of risk seems to be small. The overall harms of screening for and treatment of HIV infection in adolescents, adults and pregnant women are small.

Benefit-Harms Assessment:
The USPSTF concludes with high certainty that the net benefit of screening for HIV infection in adolescents, adults and pregnant women is substantial.

Assessment of Risk:
According to estimates from the Centers for Disease Control and Prevention (CDC), men who have sex with men account for about 60% of HIV-positive persons in the United States. Among men living with HIV infection who were diagnosed at age 13 years or older, 68% of infections are attributed to male-to-male sexual contact, 8% are attributed to male-to-male sexual contact and injection drug use, and 11% are attributed to heterosexual contact. Among women living with HIV infection, 74% of infections are attributed to heterosexual contact and the remainder to injection drug use. According to the CDC, heterosexual contact accounted for an estimated 25% of new HIV infections in 2010 and 27% of existing infections in 2009.

On the basis of HIV prevalence data, the USPSTF considers men who have sex with men and active injection drug users to be at very high risk for new HIV infection. Behavioral risk factors for HIV infection include having unprotected vaginal or anal intercourse; having sexual partners who are HIV-infected, bisexual or injection drug users; or exchanging sex for drugs or money. Other persons at high risk include those who have acquired or request testing for other sexually transmitted infections (STIs). Patients may request HIV testing in the absence of reported risk factors. Individuals not at increased risk for HIV infection include persons who are not sexually active, those who are sexually active in exclusive monogamous relationships with uninfected partners, and those who do not fall into any of the aforementioned categories. The USPSTF recognizes that these categories are not mutually exclusive, the degree of sexual risk is on a continuum, and individuals may not be aware of their sexual partners' risk factors for HIV infection. For patients younger than 15 years and older than 65 years, it would be reasonable for clinicians to consider HIV risk factors among individual patients, especially those with new sexual partners. However, clinicians should bear in mind that adolescent and adult patients may be reluctant to disclose having HIV risk factors, even when asked.

Screening Intervals:
The evidence is insufficient to determine optimum time intervals for HIV screening. One reasonable approach would be one-time screening of adolescent and adult patients to identify persons who are already HIV-positive, with repeated screening of those who are known to be at risk for HIV infection, those who are actively engages in risky behaviors, and those who live or receive medical care in a high-prevalence setting. According to the CDC, a high-prevalence setting is a geographic location or community with an HIV seroprevalence of at least 1%. These settings include sexually transmitted disease (STD) clinics, correctional facilities, homeless shelters, tuberculosis clinics, clinics serving men who have sex with men, and adolescent health clinics with a high prevalence of STDs. Patient populations that would more likely benefit from more frequent testing include those who are known to be at higher risk for HIV infection, those who are actively engages in risky behaviors, and those who live in a high-prevalence setting. Given the paucity of available evidence for specific screening intervals, a reasonable approach may be to rescreen groups at very high risk for new HIV infection at least annually and individuals at increased risk at somewhat longer intervals (for example, three to five years). Routine rescreening may not be necessary for individuals who have not been at increased risk since they were found to be HIV-negative. Women screened during a previous pregnancy should be rescreened in subsequent pregnancies."

Relevant Resources: **http://www.uspreventiveservicestaskforce.org/uspstf/uspshivi.htm**
Implementation Tools and Strategies: **Screening for Human Immunodeficiency Virus (HIV)**

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Topic: Intimate Partner Violence Screening, and Elderly and Vulnerable Adult Abuse Screening

The USPSTF recommendations are fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"Clinicians screen women of childbearing age for intimate partner violence (IPV), such as domestic violence, and provide or refer women who screen positive to intervention services."** 2. **"The current evidence is insufficient to assess the balance of benefits and harms of screening all elderly or vulnerable adults (physically or mentally dysfunctional) for abuse and neglect."** (USPSTF Last Revised 2013)	Grade of Recommendation: 1. B 2. I Statement
"Benefits: The USPSTF found adequate evidence that effective interventions can reduce violence, abuse and physical or mental harms for women of reproductive age. The USPSTF found inadequate evidence that screening or early detection reduces exposure to abuse or reduces physical or mental harms or mortality for elderly and vulnerable adults. **Harms:** For IPV, the USPSTF found adequate evidence that the risk for harm to the individual from screening or interventions is no greater than small. For elderly and vulnerable adults, the USPSTF found inadequate evidence on the harms of screening or interventions. **Benefits-Harms Assessment**: The USPSTF concludes with moderate certainty that screening women of childbearing age for IPV has a moderate net benefit. The USPSTF concludes that the benefits and harms of screening elderly or vulnerable adults for abuse are uncertain, and that the balance of benefits and harms cannot be determined."	
Relevant Resources: **http://www.uspreventiveservicestaskforce.org/uspstf/uspsipv.htm**	
Implementation Tools and Strategies: **Screening for Intimate Partner Violence and Abuse of Elderly and Vulnerable Adults**	

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Topic: Lung Cancer: Screening

The USPSTF recommendation is endorsed by the ICSI Preventive Services work group with qualifications.	Grade of Recommendation and Level of Certainty as Evaluated by USPSTF
1. **"Annual screening for lung cancer with low-dose computed tomography in adults ages 55 to 80 years who have a 30-pack-year smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery."** (USPSTF Last Revised 2013)	Grade of Recommendation: 1. B

"Benefits:
Although lung cancer screening is not an alternative to smoking cessation, the USPSTF found adequate evidence that annual screening for lung cancer with LDCT in a defined population of high-risk persons can prevent a substantial number of lung cancer-related deaths. Direct evidence from a large, well-conducted, randomized, controlled trial (RCT) provides moderate certainty of the benefit of lung cancer screening with LDCT in this population. The magnitude of benefit to the person depends on that person's risk for lung cancer because those who are at highest risk are most likely to benefit. Screening cannot prevent most lung cancer-related deaths, and smoking cessation remains essential.

Harms:
The harms associated with LDCT screening include death, false-negative and false-positive results, incidental findings, over-diagnosis and radiation exposure. False-positive LDCT results occur in a substantial proportion of screened persons; 95% of all positive results do not lead to a diagnosis of cancer. In a high-quality screening program, further imaging can resolve most false-positive results; however, some patients may require invasive procedures.

The USPSTF found insufficient evidence on the harms associated with incidental findings. Over-diagnosis of lung cancer occurs, but its precise magnitude is uncertain. A modeling study performed for the USPSTF estimated that 10 to 12% of screen-detected cancer cases are over-diagnosed – that is, they would not have been detected in the patient's lifetime without screening. Radiation harms, including cancer resulting from cumulative exposure to radiation, vary depending on the age at the start of screening; the number of scans received; and the person's exposure to other sources of radiation, particularly other medical imaging.

Benefits-Harms Assessment:
The USPSTF concludes with moderate certainty that annual screening for lung cancer with LDCT is of moderate net benefit in asymptomatic persons who are at high risk for lung cancer based on age, total cumulative exposure to tobacco smoke, and years since quitting smoking. The moderate net benefit of screening depends on limiting screening to persons who are at high risk, the accuracy of image interpretation being similar to that found in the NLST (National Lung Screening Trial), and the resolution of most false-positive results without invasive procedures."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/uspstf13/lungcan/lungcanfinalrs.htm

ICSI Preventive Service Work Group Qualifications:
The ICSI work group agrees with the evidence review and recommendations of the USPSTF as regards Lung Cancer Screening but would emphasis that the results of the National Lung Screening Trial (NLST) occurred within the context of a coordinated screening, and evaluation and treatment programs. Providing LDCT screening outside the confines of such a program is not evaluated. Only within a coordinated program will organizations be able to assure adequate shared decision-making, assess more fully the costs and benefits, the screening and treatment protocols, and the effects of the program over time. The most effective duration or frequency of screening is not known.

Overall, LDCT screening did not seem to result in significant long-term psychological distress, though assessment is limited. There are no RCTs of LDCT screening that evaluates associated benefits and harms related to incidental findings.

Shared decision-making is important for persons recommended for screening. The benefit varies with the risk, most net benefit for those at higher risk. Screening cannot prevent most lung cancers deaths, and smoking cessation remains essential. Lung cancer screening has substantial harms, most notably false-positives, incidental findings and over-diagnosis and their associated evaluation and treatment. Risks from radiation exposure and of anxiety are real, but their magnitude is uncertain. The decision to begin LDCT lung cancer screening should be the result of a thorough discussion of the benefits, limitations, and known and uncertain harms.

Additional Information:
LDCT screening for lung cancer is a complicated process in which full discussion of the harms and benefits is essential at the outset. Screening should be conducted within a multidisciplinary coordinated care system with a comprehensive process for screening, image interpretation, management of findings, and evaluation and treatment of potential cancers.

Overall, LDCT screening did not seem to result in substantial long-term psychological distress, although assessment has been limited. No studies reported long-term differences in anxiety or distress levels associated with LDCT in participants. No RCTs of LDCT screening evaluated the harms associated with screen-detected cancer, although overtreatment may be possible and could result in additional harms.

Shared Decision-Making Shared decision-making is important for persons within the population for whom screening is recommended. The benefit of screening varies with risk because persons who are at higher risk because of smoking history or other risk factors are more likely to benefit. Screening cannot prevent most lung cancer deaths, and smoking cessation remains essential. Lung cancer screening has substantial harms, most notably the risk for false-positive results and incidental findings that lead to a cascade of testing and treatment that may result in more harms, including the anxiety of living with a lesion that may be cancer. Over-diagnosis of lung cancer and the risks of radiation are real harms, although their magnitude is uncertain. The decision to begin screening should be the result of a thorough discussion of the possible benefits, limitations, and known and uncertain harms.

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Topic: Obesity in Adults: Screening and Management

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"Screening all adults for obesity. Clinicians should offer or refer patients with a body mass index (BMI) of 30 kg/m^2 or higher to intensive, multicomponent behavioral interventions."** (USPSTF Last Revised 2012)	Grade of Recommendation: 1. B
"Benefits: The USPSTF found adequate evidence that intensive, multicomponent behavioral interventions for obese adults can lead to an average weight loss of 4 to 7 kg (8.8 to 15.4 lb). These interventions also improve glucose tolerance and other physiologic risk factors for cardiovascular disease. The USPSTF found inadequate direct evidence about the effectiveness of these interventions on long-term health outcomes (for example, death, cardiovascular disease, and hospitalizations). **Harms:** Adequate evidence indicates that the harms of screening and providing behavioral interventions for obesity are no greater than small. **Benefits-Harms Assessment**: The USPSTF concludes with moderate certainty that screening for obesity in adults has a moderate net benefit. There is also benefit to offering or referring obese adults to intensive behavioral interventions to improve weight status and other risk factors for important health outcomes."	
Relevant Resources: **http://www.uspreventiveservicestaskforce.org/uspstf/uspsobes.htm**	
Implementation Tools and Strategies: **ICSI Prevention and Management of Obesity in Adults**	

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Topic: Osteoporosis: Screening

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	Grade of Recommendation and Level of Certainty as Evaluated by USPSTF
1. **"Screening for osteoporosis in women age 65 years or older and in younger women whose fracture risk is equal to or greater than that of a 65-year-old white woman who has no additional risk factors."** 2. **"The current evidence is insufficient to assess the balance of benefits and harms of screening for osteoporosis in men."** (USPSTF Last Revised 2011)	Grade of Recommendation: 1. B 2. I Statement

"Benefits:
No controlled studies have evaluated the effect of screening for osteoporosis on fracture rates or fracture-related morbidity or mortality.

In postmenopausal women who have no previous osteoporotic fractures, the USPSTF found convincing evidence that drug therapies reduce the risk for fractures. In women age 65 years or older and in younger women whose fracture risk is equal to or greater than that of a 65-year-old white woman who has no additional risk factors, the USPSTF judged that the benefit of treating screening-detected osteoporosis is at least moderate.
Because of the lack of relevant studies, the USPSTF found inadequate evidence that drug therapies reduce the risk for fractures in men who have no previous osteoporotic fractures. The USPSTF identified the absence of randomized trials of primary fracture prevention in men who have osteoporosis as a critical gap in the evidence.

Harms:
The USPSTF found no new studies that described harms of screening for osteoporosis in men or women. Screening with DXA is associated with opportunity costs (time and effort required by patients and the health care system). Harms of drug therapies for osteoporosis depend on the specific medication used. The USPSTF found adequate evidence that the harms of bisphosphonates, the most commonly prescribed therapies, are no greater than small. Convincing evidence indicates that the harms of estrogen and selective estrogen receptor modulators are small to moderate.

Benefits-Harms Assessment:
The USPSTF concludes that for women age 65 years or older and younger women whose fracture risk is equal to or greater than that of a 65-year-old white woman who has no additional risk factors, there is moderate certainty that the net benefit of screening for osteoporosis by using DXA is at least moderate.

The USPSTF concludes that, for men, evidence of the benefits of screening for osteoporosis is lacking and the balance of benefits and harms cannot be determined.

Clinical considerations:
This guideline addresses screening for women who have not had osteoporotic fractures, often called "fragility" or "low-impact" fractures. Woman with a diagnosis of secondary osteoporosis or conditions strongly associated with this diagnosis, e.g., chronic glucocorticoid therapy, are excluded.

The USPSTF commissioned a systematic review of the evidence for osteoporosis screening. The comments below are largely derived from this review *(Nelson, 2010)*.

1) There is convincing evidence that bone measurement tests predict short-term risk for osteoporotic fractures in women and men.
2) No controlled studies have evaluated the effect of screening for osteoporosis on fracture rates or fracture-related morbidity or mortality.
3) Adequate evidence indicates that clinical risk-assessment instruments (FRAX, OST and others) have only modest predictive value for low bone density or fractures. The USPSTF derived the 9.3% value from using the FRAX tool to determine the fracture risk of an average 65-year-old white woman without other risk factors.
4) Current diagnostic and treatment criteria for osteoporosis rely on DXA measurements only; criteria for quantitative ultrasonography have not been defined. For this reason, bone mineral density (BMD) by dual-energy x-ray absorptiometry (DXA) of the hip and lumbar spine is generally considered the preferred test. Quantitative ultrasonography of the calcaneus is as effective as DXA in predicting fractures of the femoral neck, hip and spine and has some advantages – the absence of radiation exposure, portability and lower cost.

For further information on testing and treatment for osteoporosis, plus primary prevention of osteoporosis (diet, exercise, vitamin D and other issues), see the ICSI **Diagnosis and Treatment of Osteoporosis** guideline.

Evidence for effectiveness:

Clinical considerations: Testing intervals – for women whose initial screening test demonstrates adequate bone mass density, there is currently no recommendation regarding optimal interval to rescreen. But a recent study suggests a reasonable framework for considering follow-up testing intervals, although further research is needed to confirm these findings in larger and diverse populations. In this large prospective study (women ≥ age 67 years; 99% white), the initial screening DXA scan results were placed in four groups (normal and three subgroups of osteopenia).

The study results identified how long it took 10% of women in each group to progress to osteoporosis and suggested the following rescreening intervals (table below) *(Gourlay, 2012 [Moderate Quality Evidence)*. The ICSI guideline work group elected to suggest a more conservative range of 10-15 years while awaiting further validation of these findings.

Initial Screen DXA Result:	**Approx. interval for retesting:**
Normal BMD (T-score -1 or higher)	15 years
Mild Osteopenia (T-score -1.01 to -1.49)	15 years
Moderate Osteopenia (T-score -1.50 to -1.99)	5 years
Advanced Osteopenia (T-score -2.00 to -2.49)	1 year

If a woman's fracture risk assessment changes for reasons beyond aging, such as chronic use of glucocorticoids or occurrence of a fragility fracture, then sooner retesting would be a consideration (*Gourlay, 2012 [Moderate Quality Evidence])*.

Regarding use of questionnaire tools to assess fracture risk – according to the USPSTF recommendation, clinicians and health care systems should assess fracture risk in women under age 65 years, as women with a significantly increased risk (> 9.3% in the next 10 years) should also be offered osteoporosis screening with DEXA or quantitave calcaneal ultrasonography (Strong Recommendation*) (U.S. Preventive Services Task Force, 2011)*.

The USPSTF supporting "Clinical Considerations" information indicates that fracture risk can be estimated using validated clinical risk-assessment instruments *(Nelson, 2010)*, and the FRAX tool is specifically mentioned as a suitable tool.

Of note is a recent study *(Crandall, 2014)* that suggests that the FRAX tool may be significantly inferior in sensitivity (but mildly superior regarding specificity) to other simple questionnaire tools such as the Osteoporosis Self-Assessment Tool (OST) and the Simple Calculated Osteoporosis Risk Estimate (SCORE). In this study, data was examined from 5165 Women's Health Initiative participants ages 50-64 years. Using the USPSTF goal of identifying women < 65 years old whose major fracture risk is ≥ 9.3% calculated without BMD, the researchers compared the FRAX to OST (score < 2) and SCORE (score > 7) strategies. The researchers "assessed sensitivity, specificity, and area under the receiver operating characteristic curve (AUC) to discriminate between those with and without femoral neck (FN) T-score ≤ -2.5. Sensitivity, specificity, and AUC for identifying FN T-score ≤ -2.5 were 34.1%, 85.8%, and 0.60 for USPSTF (FRAX), 74.0%, 70.8%, and 0.72 for SCORE, and 79.8%, 66.3%, and 0.73 for OST. The USPSTF strategy identified about 1/3rd of women ages 50-64 with FN T-scores ≤ -2.5. Among women ages 50-64 years, the USPSTF strategy was modestly better than chance alone and inferior to conventional SCORE and OST strategies in discriminating between women with and without FN T-score ≤ -2.5." Further research needs to be done, but these findings suggest that it is important to be aware of the strengths and weakness of the various tools available."

Relevant Resources:

http://www.uspreventiveservicestaskforce.org/uspstf10/osteoporosis/osteors.htm

Related guideline

ICSI **Prevention and Treatment of Osteoporosis** guideline

ICSI Work Group Supplement:

- Osteoporosis screening with dual-energy x-ray absorptiometry (DXA) of the hip and lumbar spine (or with quantitative ultrasonography of the calcaneus) should be offered to women over age 65 years *(U.S. Preventive Services Task Force, 2011)*.
- Clinicians and health care systems should assess fracture risk in postmenopausal women under age 65 years; women with a significantly increased risk (> 9.3% in the next 10 years) should also be offered osteoporosis screening *(U.S. Preventive Services Task Force, 2011)*. Fracture risk can be estimated using validated clinical risk-assessment instruments such as the FRAX, OST, SCORE and others *(Nelson, 2010)*.
- The frequency of screening is uncertain, but there is emerging evidence that most women over age 67 years with normal or only mildly osteopenic bone density on DXA may reasonably wait 10-15 years before repeat testing *(Gourlay, 2012; Hillier, 2007)*.

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Level III Services: Preventive services that clinicians and care systems *could* provide to patients, but only after careful consideration of the costs and benefits. Providing these services is left to the judgment of individual care systems, clinicians and their patients.

Topic: Cognitive Impairment in Older Adults: Screening

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"The current evidence is insufficient to assess the balance of benefits and harms of screening for cognitive impairment."** (USPSTF Last Revised 2014)	Grade of Recommendation: 1. I Statement

"Benefits:
The prevalence of dementia in the United States is 5% in persons ages 71 to 79 years, increasing to 24% in those ages 80 to 89 years and 37% in those older than age 90 years. The prevalence of older adults with MCI is difficult to estimate because of differences in the definition of MCI and methods used in studies; estimates range widely, from 3 to 42% in adults age 65 years and older. Approximately 40 to 50% of older adults report subjective memory symptoms. The rate of progression of MCI to dementia is uncertain.

Although the evidence on routine screening is insufficient, there may be important reasons to identify early cognitive impairment. In addition to its potential to help patients make diagnostic and treatment decisions, including treatment of reversible causes of dementia and management of comorbid conditions, early recognition of cognitive impairment allows clinicians to anticipate problems patients may have in understanding and adhering to recommended therapy. This information may also be useful to patients and their caregivers and family members in anticipating and planning for future problems that may develop as a result of progression of cognitive impairment. Although the overall evidence on routine screening is insufficient, clinicians should remain alert to early signs or symptoms of cognitive impairment (for example, problems with memory or language) and evaluate as appropriate. The National Institute on Aging has information on the detection and management of cognitive impairment for patients and clinicians, including a database of tools to detect cognitive impairment (available at **www.nia.nih.gov**).

Harms:
Information about the harms of screening, including labeling and the effect of false-positive results, is limited. Acetylcholinesterase inhibitors are associated with adverse effects, some of which are serious, including central nervous system disturbances and bradycardia. Gastrointestinal symptoms are also common. Information about the harms of non-pharmacologic interventions is limited, but these harms are assumed to be small. Exercise interventions are not associated with serious adverse effects.

Benefits-Harms Assessment:
Increasing age is the strongest known risk factor for cognitive impairment. The ε4 allele of the apolipoprotein E gene is a reported risk factor for Alzheimer disease. Other reported risk factors for cognitive impairment include cardiovascular risk factors (such as diabetes, tobacco use, hypercholesterolemia, hypertension and the metabolic syndrome), head trauma, learning disabilities (such as Down syndrome), depression, alcohol abuse, physical frailty, low education level, low social support and having never been married.

Several dietary and lifestyle factors have been associated with decreased risk for dementia; these factors have weaker supporting evidence than those previously mentioned. Adequate folic acid intake, low saturated fat intake, longer-chain ω-3 fatty acids, high fruit and vegetable intake, Mediterranean diet, moderate alcohol intake, educational attainment, cognitive engagement, and participation in physical activity are all associated with decreased risk for dementia."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/uspstf/uspsdeme.htm

Implementation Tools and Strategies:
Screening for Cognitive Impairment in Older Adults

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Topic: Drug Use, Illicit: Screening

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	Grade of Recommendation and Level of Certainty as Evaluated by USPSTF
1. **"The current evidence is insufficient to assess the balance of benefits and harms of screening adolescents, adults and pregnant women for illicit drug use."** (USPSTF Last Revised 2008)	Grade of Recommendation: 1. I Statement

"Benefits:
There is good evidence that various treatments are effective in reducing illicit drug use in the short term. Evidence is insufficient, however, either to demonstrate that treatment reliably improves social and legal outcomes for patients, or to link treatment directly to longer-term improvements in morbidity or mortality. Since all but one published clinical trial of treatment interventions involved individuals who had already developed problems due to their drug use, it is not known whether the findings are generalizable to asymptomatic individuals whose illicit drug use is detected through screening. There is fair evidence that, regardless of the patient's history of treatment, reducing or stopping drug use is associated with improvement in some health outcomes.
Harms:
There is little evidence of harms associated with either screening for illicit drug use or behavioral interventions used in treatment. Several clinical trials of pharmacotherapy for drug misuse have reported mild to serious adverse events, although some of these events were likely related to underlying drug use. The specific adverse events noted to occur more frequently in the treatment arm of trials (compared to placebo) have been previously recognized as potential side effects of the treatment medication and cited on its product label.
Benefits-Harms Assessment:
The USPSTF concludes that for adolescents, adults and pregnant women, the evidence is insufficient to determine the benefits and harms of screening for illicit drug use."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/uspstf/uspsdrug.htm

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Topic: Hearing Loss in Older Adults: Screening

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	Grade of Recommendation and Level of Certainty as Evaluated by USPSTF
1. **"The current evidence is insufficient to assess the balance of benefits and harms of screening for hearing loss in asymptomatic adults age 50 years or older."** (USPSTF Last Revised 2012)	Grade of Recommendation: 1. I Statement

"Benefits:
Because of a paucity of directly applicable trials, evidence is inadequate to determine whether screening for hearing loss improves health outcomes in persons who are unaware of hearing loss or have perceived hearing loss but have not sought care. One good-quality study showed that hearing aids can improve self-reported hearing, communication and social functioning for some adults with age-related hearing loss. This study nearly exclusively evaluated white male veterans with moderate hearing loss and moderate to severe perceived hearing impairment, more than one-third of whom had been referred for evaluation of hearing problems; as such, these findings were of limited applicability to a hypothetical asymptomatic, screened population. The only randomized trial that directly evaluated the effect of screening for hearing impairment – rather than the effect of treatment alone – was not primarily designed nor had sufficient statistical power to detect differences in hearing-related function. The USPSTF concludes that the evidence is inadequate to assess the benefit of screening and early treatment in an unselected screening population.
Harms:
Because of a lack of studies, evidence to determine the magnitude of harms of screening for hearing loss in older adults is inadequate; however, given the non-invasive nature of both screening and associated diagnostic evaluation, these harms are probably small to none. Adequate evidence shows that the harms of treatment of hearing loss in older adults are small to none.
Benefits-Harms Assessment:
The USPSTF concludes that evidence is lacking, and the balance of benefits and harms of screening for hearing loss in adults age 50 years or older cannot be determined."

Relevant Resources: **http://www.uspreventiveservicestaskforce.org/uspstf/uspshear.htm**
Clinical considerations: No studies have directly demonstrated a relationship between hearing screening and improved hearing function, hearing-related quality of life or activities of daily living. However, it is recognized that inadequately correcting hearing could become a barrier to care. Single-question screening is nearly as effective as the whisper-voice test or the handheld audiometric device *(Chou, 2011; Bagai, 2006)*. The prevalence of uncorrected hearing loss in the elderly is approximately 25% *(Popelka, 1998; Mulrow, 1990; Koike, 1989; Lichtenstein, 1988)*.
Implementation Tools and Strategies: **Screening for Hearing Loss in Older Adults**

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Topic: Impaired Visual Activity in Older Adults: Screening

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"The current evidence is insufficient to assess the balance of benefits and harms of screening for visual acuity for the improvement of outcomes in older adults."** (USPSTF Last Revised 2009 – Update in Progress)	Grade of Recommendation: 1. I Statement

"Benefits:
There is limited direct evidence on the effectiveness of screening for visual impairment in the primary care setting. Three fair-quality cluster randomized, controlled trials found no difference with respect to vision and other clinical or functional outcomes between vision screening (as part of a multi-component screening) with visual acuity testing or questions compared with usual care, no vision screening or delayed screening. The application of this evidence to screening in a primary care setting has limitations. Issues with the study methods include failure to report allocation concealment, lack of intention-to-treat analysis and unclear blinding. Other limitations to the applicability of this evidence to the primary care setting include the fact that the recommended interventions are provided by eye care specialists and that many patients do not get the recommended glasses.

Consistent evidence shows that older adults with refractive errors could achieve visual acuity better than 20/40 with refractive correction. Evidence from a few trials indicates that immediate correction of refractive error with eyeglasses in older adults is associated with improved short-term, vision-related quality of life or function compared with delayed treatment. A systematic review of 179 randomized, controlled trials and observational studies found refractive surgery to be highly effective at improving refractive errors, with 92 to 94% of persons with myopia and 86 to 96% of persons with hyperopia achieving visual acuity of 20/40 or better. However, most of these studies were done in younger adults, limiting generalizability to older adults.

Cataract surgery is consistently associated with improved visual acuity in observational studies: Approximately 90% of patients have postoperative visual acuity greater than 20/40. Results from studies in adults older than age 85 years are mixed. The best evidence suggests that most adults older than age 85 years also benefit. Although the proportion is smaller than in younger adults, more than three-quarters still seem to benefit. Evidence shows that cataract surgery improves vision-related quality of life and function, but evidence from observational studies on effects on motor vehicle accidents and death is sparse and inconclusive: one study reported fewer motor vehicle accidents with cataract surgery, and one study reported increased risk for death in patients who do not have cataract surgery. No randomized trials were identified that evaluated clinical outcomes associated with cataract surgery versus no surgery. Evidence on the effect of cataract surgery on the risk for falls and fractures is limited and inconsistent.

A systematic review reported that antioxidants were effective for slowing the progression of dry AMD, but conclusions are primarily based on 1 large, good-quality trial – the Age-Related Eye Disease Study. The systematic review found that a multivitamin (composed of vitamins C and E and β-carotene with the addition of zinc) was associated with reduced likelihood of progression to advanced AMD (adjusted odds ratio, 0.68); however, the differences in the likelihood of losing measurable visual acuity did not reach statistical significance. For wet AMD, laser photocoagulation seems to be superior to no treatment for progression of vision loss (loss of ≥ 6 lines of visual acuity) after two years (relative risk, 0.67), although the quality of the trials evaluating this therapy is limited. Two good-quality systematic reviews of photodynamic therapy found verteporfin to be superior to placebo for preventing loss of visual acuity; quality-of-life outcomes were not reported from the trials. Injections with the vascular endothelial growth factor inhibitors pegaptanib and ranibizumab are effective for reducing the risk for visual acuity loss and blindness, but evidence on vision-related functional outcomes is mixed.

Harms:
No evidence was found of serious harms from visual screening of asymptomatic older adults. Data on harms of treatment of refractive error in older adults are limited. One fair-quality trial found that vision screening by an optometrist in frail, older adults (n = 309) was associated with an increased risk for falls (rate ratio, 1.57 [95% CI, 1.20 to 2.05]; P = 0.01). Approximately one-half of the participants were prescribed new eyeglasses or were referred for further treatment. A small observational study reported an association between multifocal lens use and increased risk for falls in older adults. Serious harms, including vision loss, are rare as a result of contact lens use or refractive surgery. Corneal ectasia, a known harm of refractive surgery, occurs at a median rate of 0.2%. Cataract surgery can lead to posterior capsule opacification of the implanted lens, requiring an external laser procedure; reported rates of this complication vary widely from 0.7% to 48%. More recent studies report an incidence of 28% at five years. Endophthalmitis, bullous keratopathy, dislocation of the intraocular lens, macular edema and retinal detachment are other complications associated with cataract surgery.

Pooled data from trials of antioxidant vitamins and minerals reported no association with withdrawal due to gastrointestinal symptoms. The largest trial reported an increased risk for hospitalizations due to genitourinary causes with zinc and an increased risk for yellow skin with antioxidants; no association with increased hospitalizations, death or lung cancer was found.

Laser photocoagulation for wet AMD is associated with an increased risk for acute visual acuity loss (3 months after the procedure) but, as described earlier, is associated with a reduced risk for visual acuity loss at two years. Verteporfin carries an initial risk for acute visual acuity loss and a greater risk for back pain related to the infusion. Harms associated with intravitreal injections of vascular endothelial growth factor inhibitors include endophthalmitis, uveitis, increased intraocular pressure, traumatic cataract and retinal detachment; studies report no associations with hypertension or thromboembolic events.

Benefits-Harms Assessment:
In the highest-quality trial, universal vision screening identified about 10 times more patients with vision impairment and correctable vision impairment than targeted screening, yet found no difference in the rate of visual acuity worse than 20/60 after 3- to 5-year follow-up. As in the previous USPSTF evidence synthesis, no direct evidence indicates that screening for vision impairment in older adults in primary care settings is associated with improved clinical outcomes. Limited data from one trial reported that vision screening by an optometrist may be associated with an increased risk for falls, possibly because of the need to adjust to the vision correction or increased activities that may predispose to falls.

Although visual acuity testing is adequate for identifying refractive errors, it might be inadequate for identifying early AMD or early cataracts. Effective treatments are available for uncorrected refractive error, cataracts and AMD. Overall harms seem to be small; however, many of the treatments carry a small risk for serious complications, including acute visual loss.

Although treatments that entail little harm can correct impaired visual acuity, limited evidence is available on the effect of screening and treatment on quality of life, overall functioning and vision-related functioning, especially in older adults without self-perceived visual problems. This lack of evidence prevents the USPSTF from assessing the magnitude of net benefit for screening for visual acuity impairment."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/uspstf/uspsviseld.htm

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Topic: Prostate Cancer: Screening

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	Grade of Recommendation and Level of Certainty as Evaluated by USPSTF
1. **"Against PSA-based screening for prostate cancer."** (USPSTF Last Revised 2012)	Grade of Recommendation: 1. D

"Benefits:
The primary goal of prostate cancer screening is to reduce deaths due to prostate cancer and, thus, increase length of life. An additional important outcome would be a reduction in the development of symptomatic metastatic disease. Reduction in prostate cancer mortality was the primary outcome used in available randomized, controlled trials of prostate cancer screening. Although one screening trial reported on the presence of metastatic disease at the time of prostate cancer diagnosis, no study reported on the effect of screening on the development of subsequent metastatic disease, making it difficult to assess the effect of lead-time bias on the reported rates.
Men with screen-detected cancer can potentially fall into one of three categories: those whose cancer will result in death despite early diagnosis and treatment, those who will have good outcomes in the absence of screening, and those for whom early diagnosis and treatment improves survival. Only randomized trials of screening allow an accurate estimate of the number of men who fall into the latter category. There is convincing evidence that the number of men who avoid dying of prostate cancer because of screening after 10 to 14 years is, at best, very small. Two major trials of PSA screening were considered by the USPSTF: the U.S. PLCO (Prostate, Lung, Colorectal, and Ovarian) Cancer Screening Trial and the ERSPC (European Randomized Study of Screening for Prostate Cancer). The U.S. trial did not demonstrate any prostate cancer mortality reduction. The European trial found a reduction in prostate cancer deaths of approximately one death per 1,000 men screened in a subgroup of men ages 55 to 69 years. This result was heavily influenced by the results of two countries; five of the seven countries reporting results did not find a statistically significant reduction. All-cause mortality in the European trial was nearly identical in the screened and non-screened groups.
There is adequate evidence that the benefit of PSA screening and early treatment ranges from 0 to 1 prostate cancer deaths avoided per 1,000 men screened.
Harms:
Adequate evidence shows that nearly 90% of men with PSA-detected prostate cancer in the United States have early treatment with surgery, radiation or androgen-deprivation therapy. Adequate evidence shows that up to 5 in 1,000 men will die within one month of prostate cancer surgery and between 10 and 70 men will have serious complications but survive. Radiotherapy and surgery result in long-term adverse effects, including urinary incontinence and erectile dysfunction in at least 200 to 300 of 1,000 men treated with these therapies. Radiotherapy is also associated with bowel dysfunction.
Some clinicians have used androgen-deprivation therapy as primary therapy for early-stage prostate cancer, particularly in older men, although this is not a U.S. Food and Drug Administration (FDA)-approved indication, and it has not been shown to improve survival in localized prostate cancer. Adequate evidence shows that androgen-deprivation therapy for localized prostate cancer is associated with erectile dysfunction (in approximately 400 of 1,000 men treated), as well as gynecomastia and hot flashes.
There is convincing evidence that PSA-based screening leads to substantial over-diagnosis of prostate tumors. The amount of over-diagnosis of prostate cancer is of important concern because a man with cancer that would remain asymptomatic for the remainder of his life cannot benefit from screening or treatment. There is a high propensity for physicians and patients to elect to treat most cases of screen-detected cancer, given our current inability to distinguish tumors that will remain indolent from those destined to be lethal. Thus, many men are being subjected to the harms of treatment of prostate cancer that will never become symptomatic. Even for men whose screen-detected cancer would otherwise have been later identified without screening, most experience the same outcome and are, therefore, subjected to the harms of treatment for a much longer period of time. There is convincing evidence that PSA-based screening for prostate cancer results in considerable overtreatment and its associated harms.
The USPSTF considered the magnitude of these treatment-associated harms to be at least moderate.
Benefits-Harms Assessment:
Although the precise, long-term effect of PSA screening on prostate cancer-specific mortality remains uncertain, existing studies adequately demonstrate that the reduction in prostate cancer mortality after 10 to 14 years is, at most, very small, even for men in what seems to be the optimal age range of ages 55 to 69 years. There is no apparent reduction in all-cause mortality. In contrast, the harms associated with the diagnosis and treatment of screen-detected cancer are common, occur early, often persist, and include a small but real risk for premature death. Many more men in a screened population will experience the harms of screening and treatment of screen-detected disease than will experience the benefit. The inevitability of over-diagnosis and overtreatment of prostate cancer as a result of screening means that many men will experience the adverse effects of diagnosis and treatment of a disease that would have remained asymptomatic throughout their lives. Assessing the balance of benefits and harms requires weighing a moderate to high probability of early and persistent harm from treatment against the very low probability of preventing a death from prostate cancer in the long term.
The USPSTF concludes that there is moderate certainty that the benefits of PSA-based screening for prostate cancer do not outweigh the harms."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/Page/Topic/recommendation-summary/prostate-cancer-screening?ds=1&s=prostate

Implementation Tools and Strategies:
Screening for Prostate Cancer

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Topic: Sexually Transmitted Infections: Behavioral Counseling

The USPSTF recommendations are fully endorsed by the ICSI Preventive Services work group.	Grade of Recommendation and Level of Certainty as Evaluated by USPSTF
1. **"Intensive behavioral counseling for all sexually active adolescents and for adults who are at increased risk for sexually transmitted infections (STIs)."** (USPSTF Last Revised 2008 – Update in Progress)	Grade of Recommendation: 1. B
"Benefits: The USPSTF found adequate evidence that intensive behavioral counseling interventions reduce the likelihood of STIs in sexually active adolescents and in adults who are at increased risk. The USPSTF determined that this benefit is of moderate magnitude. The USPSTF also found adequate evidence that intensive interventions reduce risky sexual behaviors and increase the likelihood of condom use and other protective sexual practices. **Harms:** The USPSTF found adequate evidence that the harms of behavioral interventions to reduce the likelihood of STIs are small at most. The primary harm is the opportunity cost associated with intensive behavioral counseling interventions. **Benefits-Harms Assessment:** The USPSTF concludes with moderate certainty that intensive behavioral counseling interventions reduce the likelihood of STIs in sexually active adolescents and adults at increased risk, resulting in a moderate net benefit."	
Relevant Resources: **http://www.uspreventiveservicestaskforce.org/uspstf08/sti/stirs.htm**	

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Topic: Skin Cancer: Screening

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	Grade of Recommendation and Level of Certainty as Evaluated by USPSTF
1. **"The current evidence is insufficient to assess the balance of benefits and harms of using a whole-body skin examination by a primary care clinician or patient skin self-examination for the early detection of cutaneous melanoma, basal cell cancer or squamous cell skin cancer in the adult general population."** (USPSTF Last Revised 2009 – Update in Progress)	Grade of Recommendation: 1. I Statement
"Benefits: The evidence is insufficient (lack of studies) to determine whether early detection of skin cancer reduces mortality or morbidity from skin cancer. This is a critical gap in the evidence. **Harms:** The evidence is insufficient (lack of studies) to determine the magnitude of harms from screening for skin cancer. Potential harms of screening for skin cancer include misdiagnosis, over-diagnosis, and the resultant harms from biopsies and overtreatment. This is a critical gap in the evidence. **Benefits-Harms Assessment:** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for skin cancer by primary care clinicians or by patient skin self-examination. If this service is used, patients should be made aware of the uncertainty about the balance of benefits and harms."	
Relevant Resources: **http://www.uspreventiveservicestaskforce.org/uspstf09/skincancer/skincanrs.htm**	
ICSI Preventive Services Work Group Supplement: There is some data to suggest that whole body skin exam (WBSE) is associated with thinner melanomas at the time of detection, but there remains a lack of randomized controlled trials examining WBSE, as well as uncertainty about the effect on morbidity and mortality.	

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Topic: Thyroid Dysfunction: Screening

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. "The current evidence is insufficient to assess the balance of benefits and harms of screening for thyroid dysfunction in non-pregnant, asymptomatic adults." (USPSTF Updated March 2015)	Grade of Recommendation: 1. I Statement
"Benefits: The USPSTF found inadequate evidence that screening for thyroid dysfunction in non-pregnant, asymptomatic adults leads to clinically important benefits. In particular, the USPSTF found inadequate evidence to determine whether screening for thyroid dysfunction reduces cardiovascular disease or related morbidity and mortality. The USPSTF found adequate evidence that screening for and treatment of thyroid dysfunction in non-pregnant, asymptomatic adults does not improve quality of life or provide clinically meaningful improvements in blood pressure, body mass index (BMI), bone mineral density, or lipid levels. It also does not improve cognitive function, at least through the duration of available trials (≥ 1 to 2 years). **Harms:** The USPSTF found inadequate evidence on the harms of screening for and treatment of thyroid dysfunction. Indirect evidence points to the likelihood of important and frequent harms associated with screening in asymptomatic persons. Foremost among these are frequent false-positive results; the psychological effects of labeling; and a large degree of overdiagnosis and overtreatment of biochemically defined abnormal TSH levels (with or without abnormal serum T4 levels) that may revert to normal, not progress, or never result in health problems even if they do progress, particularly in persons with TSH levels less than 10 mIU/L.	
Benefits-Harms Assessment: The USPSTF concludes that the evidence is insufficient and that the balance of benefits and harms of screening for thyroid dysfunction in non-pregnant, asymptomatic adults cannot be determined. If clinicians offer screening for thyroid dysfunction to asymptomatic persons, they should first ensure that patients clearly understand the uncertainties surrounding any potential clinical benefit of screening as well as the possibility of harm this choice may engender."	
Relevant Resources: **http://www.uspreventiveservicestaskforce.org/uspstf/uspsthyr.htm**	

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Topic: Vitamin D and Calcium to Prevent Fractures: Preventive Medication

The USPSTF recommendations are fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"The current evidence is insufficient to assess the balance of the benefits and harms of combined vitamin D and calcium supplementation for the primary prevention of fractures in premenopausal women."** 2. **"The current evidence is insufficient to assess the balance of the benefits and harms of combined vitamin D and calcium supplementation for the primary prevention of fractures in men."** 3. **"The current evidence is insufficient to assess the balance of the benefits and harms of daily supplementation with greater than 400 IU of vitamin D_3 and greater than 1,000 mg of calcium for the primary prevention of fractures in non-institutionalized postmenopausal women. "** 4. **"Against daily supplementation with 400 IU or less of vitamin D_3 and 1,000 mg or less of calcium for the primary prevention of fractures in non-institutionalized postmenopausal women."** 5. **"Vitamin D supplementation is effective in preventing falls in community-dwelling adults aged 65 years or older who ar at increased risk for falls."** (USPSTF Last Revised 2013)	Grade of Recommendation: 1. I Statement 2. I Statement 3. I Statement 4. D 5. B

"Benefits:
In premenopausal women and in men, there is inadequate evidence to determine the effect of combined vitamin D_3 and calcium supplementation on the incidence of fractures. In postmenopausal women, there is adequate evidence that daily supplementation with 400 IU of vitamin D_3 combined with 1,000 mg of calcium has no effect on the incidence of fractures. However, there is inadequate evidence regarding the effect of higher doses of combined vitamin D and calcium supplementation on fracture incidence in non-institutionalized postmenopausal women.

Harms:
Adequate evidence indicates that supplementation with 400 IU or less of vitamin D_3 and 1,000 mg or less of calcium increases the incidence of renal stones. The USPSTF assessed the magnitude of this harm as small.

Benefits-Harms Assessment:

Non-institutionalized, community-dwelling postmenopausal women.
The USPSTF concludes that evidence is lacking about the benefit of daily supplementation with greater than 400 IU of vitamin $D_3$and greater than 1,000 mg of calcium for the primary prevention of fractures, and the balance of benefits and harms cannot be determined.

The USPSTF concludes with moderate certainty that daily supplementation with 400 IU or less of vitamin D_3 and 1,000 mg or less of calcium has no net benefit for the primary prevention of fractures.

Men and premenopausal women.
The USPSTF concludes that evidence is lacking about the benefit of vitamin D supplementation with or without calcium for the primary prevention of fractures, and the balance of benefits and harms cannot be determined."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/Page/Topic/recommendation-summary/vitamin-d-and-calcium-to-prevent-fractures-preventive-medication?ds=1&s=calcium

Implementation Tools and Strategies:
Vitamin D and Calcium Supplementation to Prevent Fractures
Vitamin, Mineral and Multivitamin Supplements for the Primary Prevention of Cardiovascular Disease and Cancer

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Level IV Services: Preventive services that are not supported by evidence and *should not* be recommended.

Topic: Carotid Artery Stenosis: Screening

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"Against screening for asymptomatic carotid artery stenosis in the general adult population."** (USPSTF Last Revised 2014)	Grade of Recommendation: 1. D

"Benefits:
There is no direct evidence on the benefits of screening for carotid artery stenosis. Adequate evidence indicates that in selected trial participants with asymptomatic carotid artery stenosis, carotid endarterectomy (CEA) performed by selected surgeons reduces the absolute incidence of all strokes or perioperative death by approximately 3.5% compared with (outdated) medical management. However, this difference is probably smaller with current optimal medical management. The magnitude of these benefits would be smaller in asymptomatic persons in the general population. For the general primary care population, the magnitude of benefit is small to none. There is no evidence that identification of asymptomatic carotid artery stenosis leads to any benefit from adding or increasing medication doses (beyond current standard medical therapy for cardiovascular disease prevention).

Harms:
Adequate evidence indicates that both the testing strategy for carotid artery stenosis and treatment with CEA can cause harms. Although screening with ultrasonography has little direct harm, all screening strategies, including those with or without confirmatory tests (that is, digital subtraction or magnetic resonance angiography), have imperfect sensitivity and specificity and could lead to unnecessary interventions and result in serious harms. In selected centers similar to those in the trials, CEA is associated with a 30-day stroke or mortality rate of approximately 2.4%; reported rates are as high as approximately 5% in low-volume centers and 6% in certain states. Myocardial infarctions are reported in 0.8 to 2.2% of patients after CEA. The 30-day stroke or mortality rate after carotid angioplasty and stenting (CAAS) is approximately 3.1 to 3.8%. The overall magnitude of harms of screening and subsequent treatment of asymptomatic carotid artery stenosis is small to moderate depending on patient population, surgeon, center volume and geographic location.

Benefits-Harms Assessment:
The USPSTF concludes with moderate certainty that the harms of screening for asymptomatic carotid artery stenosis outweigh the benefits.

Electrocardiography measures the electrical activity in the heart and results can be abnormal for many reasons, only some of which are because of CHD. In low-risk patients, these abnormalities are unlikely to result from CHD; in intermediate- and high-risk patients, they are more likely to result from CHD but there is no evidence that targeting these abnormalities instead of or in addition to modifiable risk factors has benefit or biological plausibility."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/uspstf/uspsacas.htm

Implementation Tools and Strategies:
Screening for Carotid Artery Stenosis

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Topic: Chronic Obstructive Pulmonary Disease (COPD): Screening

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"Against screening adults for chronic obstructive pulmonary disease (COPD) using spirometry."** (USPSTF Last Revised 2008 – Update in Progress)	Grade of Recommendation: 1. D

"Benefits:
No controlled studies have compared clinical outcomes between screened and non-screened populations. Randomized, controlled trials of pharmacologic therapies have generally enrolled patients with clinically detected COPD; this population is unlikely to be similar to a population with spirometric screening-detected COPD. Patients identified through screening do not recognize or report symptoms, and, on the basis of prevalence studies, most would be expected to have mild or moderate COPD. A systematic review and meta-analysis of randomized, controlled trials of treatment found small improvements in exacerbations, health status measures and mortality only in symptomatic patients with severe COPD.

The hypothesis that early detection of COPD with spirometry, alone or as part of a multi-component intervention, leads to improved smoking cessation rates has been tested in several randomized, controlled trials. Two randomized, controlled trials that evaluated the independent effect of spirometry found no statistically significant difference in cessation rates between smokers who were provided spirometry results and control participants.

Harms:
Opportunity costs (time and effort required by both patients and the health care system), anxiety associated with false-positive results, and adverse effects from appropriately or inappropriately prescribed medications are all potential harms of screening for COPD using spirometry. Several good- or fair-quality meta-analyses have concluded that inhaled COPD therapies are commonly associated with minor adverse effects. Evidence of their association with major adverse effects (myocardial infarction, hip fracture, pneumonia) is inconsistent.

Benefits-Harms Assessment:
In patients similar to those in the randomized, controlled trials, inhaled COPD therapies can result in an absolute reduction in exacerbations. Using estimates obtained from population-based studies, one can determine the number of patients needed to screen with spirometry to defer the first exacerbation in various age groups. Assuming that patients who do not recognize or report symptoms benefit to the same degree as patients in the randomized, controlled trials, and that benefits of therapy are similar across all age groups, the number needed to screen ranges from 400 (in patients ages 70 to 74 years) to 2,500 (in patients ages 40 to 49 years). Limiting screening spirometry to smokers older than age 40 years, as advocated by some groups, produces a number needed to screen of 833 to defer the first exacerbation.

Weighing this benefit against potential harms, there is at least moderate certainty that screening for COPD using spirometry has no net benefit."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/uspstf/uspscopd.htm

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Topic: Coronary Heart Disease: Screening with Electrocardiography

The USPSTF recommendations are fully endorsed by the ICSI Preventive Services work group.	**Grade of Recommendation and Level of Certainty as Evaluated by USPSTF**
1. **"Against screening with resting or exercise electrocardiography (ECG) for the prediction of coronary heart disease (CHD) events in asymptomatic adults at low risk for CHD events."** 2. **"The current evidence is insufficient to assess the balance of benefits and harms of screening with resting or exercise ECG for the prediction of CHD events in asymptomatic adults at intermediate or high risk for CHD events."** (USPSTF Last Revised 2012)	Grade of Recommendation: 1. D 2. I Statement

"Benefits:
For asymptomatic adults at low risk for CHD events, it is very unlikely that the information offered by resting or exercise ECG (beyond that obtained with conventional CHD risk factors) will result in a change in the patient's risk category (for example, from low to high risk) that would lead to a change in the patient's treatment and ultimately improve health outcomes. Serious possible harms are associated with resting or exercise ECG screening. The most important harm is exposure to potential adverse effects of invasive tests. Therefore, the USPSTF concluded with moderate certainty that screening ECG provides no net benefit for asymptomatic, low-risk patients.

For asymptomatic adults at intermediate or high risk for CHD events, there is no evidence to determine the extent to which resting or exercise ECG adds to the usual ascertainment of conventional CHD risk factors (that is, Framingham risk factors) and that it results in a change in risk management and ultimately reduces CHD-related events. As with low-risk adults, serious possible harms are associated with resting or exercise ECG in asymptomatic adults at intermediate or high risk, and thus the USPSTF could not assess the net benefit of ECG screening.

Harms:
Adverse events directly associated with resting ECG are extremely rare and largely related to cutaneous allergic reactions to ECG pads and adhesives or anxiety about test outcome. The USPSTF is not aware of any recent studies that report harms directly associated with resting ECG screening. In low-risk asymptomatic populations, most positive ECG results occur in persons who will not have a CHD event in the next 5 to 10 years. One study reported that 71% of asymptomatic adults with abnormal exercise treadmill ECG results had no angiographically demonstrable coronary artery stenosis. Adverse events associated with exercise ECG may include the triggering of a cardiovascular event, musculoskeletal injury and anxiety about test outcome. The overall risk for a serious adverse event (one that requires hospitalization or causes sudden death) is estimated to be 1 in 10,000 tests.

Harms are associated with follow-up testing or interventions that follow resting or exercise ECG screening. Older studies, mostly from the 1980s and 1990s, report rates of 0.6 to 2.9% for angiography in asymptomatic adults after an abnormal exercise ECG result. Two studies report rates of 0.1% and 0.5% for subsequent revascularization. On the basis of large, population-based registries that include symptomatic persons, the risk for any serious adverse event from angiography is about 1.7%, including risk for death (0.1%), MI (0.05%), stroke (0.07%) or arrhythmia (0.4%). The USPSTF did not find any recent studies that directly address the potential harms of anxiety or labeling.

Benefits-Harms Assessment:
There is substantial and consistent evidence that identifying and treating traditional, modifiable CHD risk factors – such as hypertension, abnormal lipid levels, diabetes, smoking, physical inactivity and diet – improve cardiovascular outcomes. These risk factors are linked to the biological understanding of the pathophysiology of CHD. Electrocardiography measures the electrical activity in the heart and results can be abnormal for many reasons, only some of which are because of CHD. In low-risk patients, these abnormalities are unlikely to result from CHD; in intermediate- and high-risk patients, they are more likely to result from CHD but there is no evidence that targeting these abnormalities instead of or in addition to modifiable risk factors has benefit or biological plausibility."

Relevant Resources:
http://www.uspreventiveservicestaskforce.org/uspstf/uspsacad.htm

Implementation Tools and Resources:
Screening for Coronary Heart Disease with Electrocardiography

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Topic: Ovarian Cancer: Screening

The USPSTF recommendation is fully endorsed by the ICSI Preventive Services work group.	Grade of Recommendation and Level of Certainty as Evaluated by USPSTF
1. **"Against screening for ovarian cancer in women."** (USPSTF Last Revised 2012)	Grade of Recommendation: 1. D
"Benefits: The USPSTF found adequate evidence that annual screening with transvaginal ultrasonography and testing for a serum tumor marker, cancer antigen (CA)–125, in women does not reduce the number of ovarian cancer deaths. **Harms:** Adequate evidence shows that screening for ovarian cancer can lead to important harms, including major surgical interventions in women who do not have cancer. **Benefits-Harms Assessment**: The USPSTF concludes that there is at least moderate certainty that the harms of screening for ovarian cancer outweigh the benefits."	
Relevant Resources: **http://www.uspreventiveservicestaskforce.org/uspstf/uspsovar.htm**	
Implementation Tools and Strategies: **Screening for Ovarian Cancer**	

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