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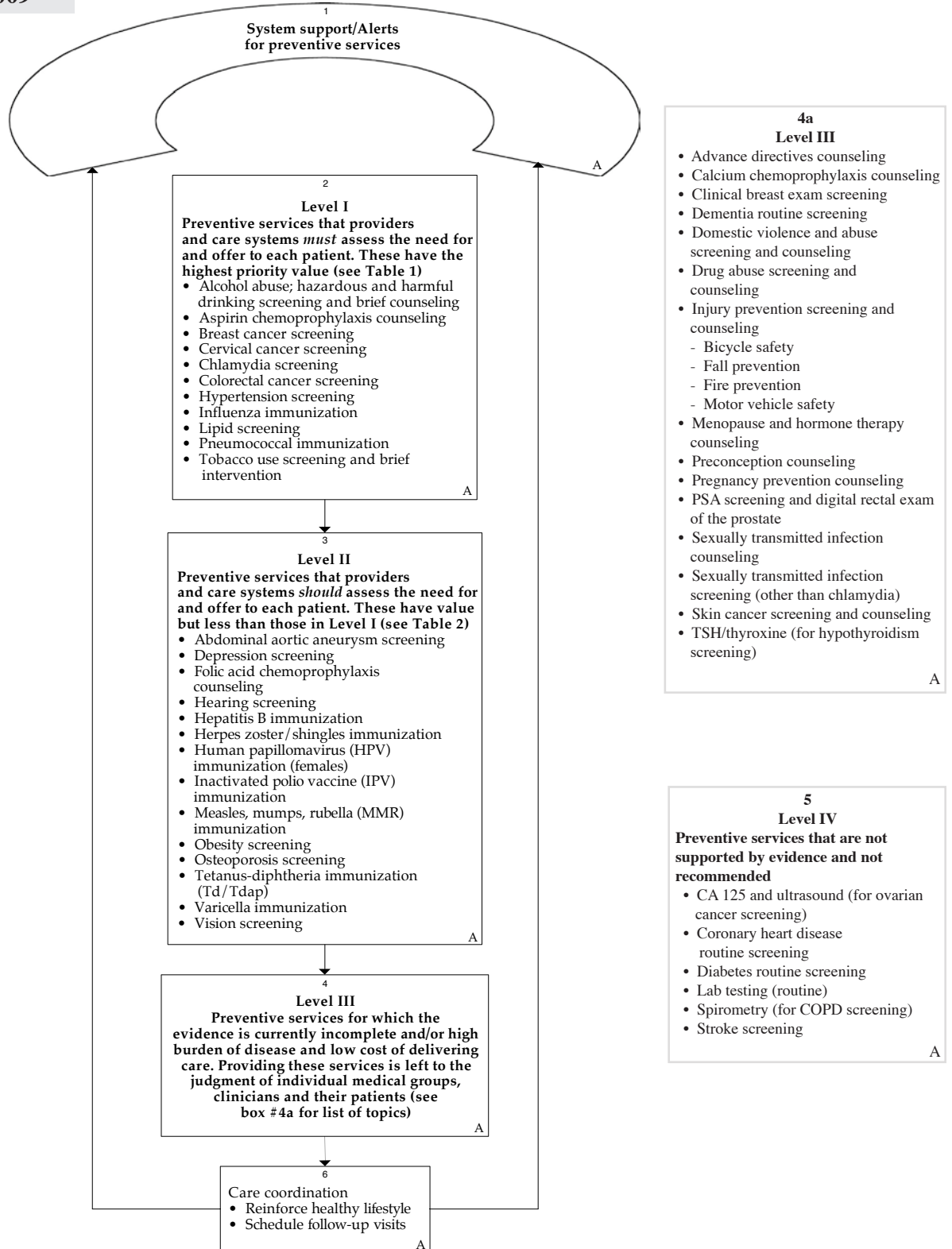


Table 1: Adult Preventive Services That Providers and Care Systems *Must* Assess the Need for and Offer to Each Patient. These have the Highest Priority Value (Level I)

Level I preventive services are worthy of attention at every opportunity. Busy clinicians cannot deliver this many services in any single encounter. However, with systems in place to track whether or not patients are up to date with the high priority preventive services recommended for their age group, clinicians can offer the high-priority services as opportunities present.

| Service | 19-39 Years | 40-64 Years | 65 Years and Older |
|--|--|---|--------------------|
| Alcohol abuse; hazardous and harmful drinking screening and brief counseling | Identify those with risky or hazardous drinking, as well as those who have carried that behavior to the point of meeting criteria for dependence, and then provide brief intervention. | | |
| Aspirin chemoprophylaxis counseling | | Encourage for men age 45-79 years when the potential benefit of a reduction in myocardial infarctions outweighs the potential harm of an increase in gastrointestinal hemorrhage. Encourage for women age 55-79 years when the potential benefit of a reduction in ischemic strokes outweighs the potential harm of an increase in gastrointestinal hemorrhage. | |
| Breast cancer screening | | Mammogram every 1-2 years for women age 50-75 years. (See Annotation #2 for evidence and recommendations for other ages.) | |
| Cervical cancer screening | Beginning at age 21 or three years after first sexual intercourse, whichever is earlier. Every 3 years after 3 consecutive normal Pap smears over 5 years. | Every 3 years after 3 consecutive normal Pap smears over 5 years. | |
| Chlamydia screening | All sexually active women aged 25 years and younger, and older women at increased risk for infection. | | |
| Colorectal cancer screening | | Age 50 years and older or age 45 years of age and older for African Americans at appropriate intervals as determined by whichever screening method is chosen. | |
| Hypertension screening | BP every 2 years if less than 120/80; every year if 120-139/80-89 Hg. | | |
| Influenza immunization | Annually during flu season for individuals age 50 and older, those at high risk, and others. | | |
| Lipid screening | Fasting fractionated lipid screening for men over age 34 every 5 years. | Fasting fractionated lipid screening for men over age 34 and women over age 44 every five years. | |
| Pneumococcal immunization | Immunize high-risk groups once. Reimmunize those at risk of losing immunity once after five years. | Immunize at 65 if not done previously. Reimmunize once if first received more than 5 years ago and before age 65, or an appropriate immunocompromising condition is present. | |
| Tobacco use screening and brief intervention | Establish tobacco use status for all patients and reassess at every opportunity. | | |

Table 2: Adult Preventive Services That Providers and Care Systems *Should* Assess the Need for and Offer to Each Patient. These Have Value But Less Than Those in Level I (Level II)

Level II services have been shown to be effective and should be provided whenever possible. If systems/care management teams are successful in keeping patients on time with high-priority services during illness and disease management visits, preventive services in the second group can be delivered at any opportunity once Level I services are complete.

| Service | 19-39 Years | 40-64 Years | 65 Years and Older |
|---|---|---|--|
| Abdominal aortic aneurysm screening | | | Men ages 65-75 who have ever smoked (greater than 100 cigarettes in lifetime). |
| Depression screening | Routine screening if there are systems in place to ensure accurate diagnosis, effective treatment and careful follow-up. | | |
| Folic acid chemoprophylaxis counseling | Counsel women of reproductive age to consume 400 to 800 micrograms of folic acid per day from food sources or supplements. | | |
| Hearing screening | | Subjective hearing screen followed by counseling on hearing aid devices and making referrals as appropriate for older adults. | |
| Hepatitis B immunization | Universal routine immunization for young adults less than 40 years of age. | | |
| Herpes zoster/shingles immunization | | Immunize at age 60 and older in patients who have no contraindications. | |
| Human papillomavirus (HPV) immunization (females) | Catch up through age 26. | | |
| Inactivated polio vaccine (IPV) immunization | Vaccination should occur for adults not previously immunized. | | |
| Measles, mumps, rubella (MMR) immunization | Persons born during or after 1957 should have one dose of measles; a second dose may be required in special circumstances. | | |
| Obesity screening | Record height, weight and BMI at least annually. | | |
| Osteoporosis screening | | Women age 65 and older should be screened for osteoporosis. | |
| Tetanus-diphtheria immunization | All adults should have completed a primary Td series. For all adults, immunize with a booster dose of Td every 10 years thereafter. | | |
| Varicella immunization | For all adults without evidence of immunity, a dose of varicella vaccine should be given followed by a second dose at an interval of at least 28 days. A catch-up second dose of varicella vaccine should be given to all children, adolescents and adults who received only one dose previously. | | |
| Vision screening | | Objective vision testing for adults age 65 and older. | |

Preventive Services for Which the Evidence Is Currently Incomplete, and/or High Burden of Disease and Low Cost of Delivering Care. Providing These Services Is Left to the Judgment of Individual Medical Groups, Clinicians and Their Patients (Level III)

Level III services either have insufficient evidence to prove their effectiveness and/or have important harms. For these preventive services in particular, decisions about offering the service should be based on shared decision-making. It is important to remember that insufficient evidence does not mean the service is not effective, but rather that the current literature is not sufficient to say whether or not the service is effective.

- Advance directives counseling
- Calcium chemoprophylaxis counseling
- Clinical breast exam screening
- Dementia routine screening
- Domestic violence and abuse screening and counseling
- Drug abuse screening and counseling
- Injury prevention screening
 - Bicycle safety
 - Fall prevention
 - Fire prevention
 - Motor vehicle safety
- Menopause and hormone therapy counseling
- Preconception counseling
- Pregnancy prevention counseling
- PSA screening and digital rectal exam of the prostate
- Sexually transmitted infection counseling
- Sexually transmitted infection screening (other than chlamydia)
- Skin cancer screening and counseling
- TSH/thyroxine (for hypothyroidism screening)

Preventive Services That Are Not Supported by Evidence and Not Recommended (Level IV)

Level IV services are those with low predictive value and/or uncertain beneficial action for true positives.

- CA 125 and ultrasound (for ovarian cancer screening)
- Coronary heart disease routine screening
- Diabetes routine screening
- Lab testing (routine)
- Spirometry (for COPD screening)
- Stroke screening

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Foreword

Scope and Target Population

To provide a comprehensive approach to the provision of preventive services, counseling, education, and disease screening for average-risk, asymptomatic adults aged 18 and over. This guideline generally does not address the needs of:

- pregnant women
- individuals with chronic disorders
- high-risk populations (there are occasional exceptions where noted)

This guideline targets asymptomatic adults seeking health care who would benefit from preventive services. This resource is intended to assist in the prioritization of screening maneuvers, tests and counseling opportunities. It is not intended to diagnose or treat any condition. Consequently, once a health issue or condition has been uncovered, other guidelines (such as the Lipid Management in Adults guideline or Hypertension Diagnosis and Treatment guideline) will take precedence during any further diagnosis and management.

Clinical Highlights and Recommendations

- All clinic contacts – whether acute, chronic or for preventive services – are opportunities for prevention. Incorporate appropriate preventive services at every opportunity. (*Annotation #1*)
- Address or initiate adult preventive services that providers and care systems *must* assess the need for and offer to each patient. These have the highest priority value. (Level I) (*Annotation #2; Aim #1*)
 - Alcohol abuse; hazardous and harmful drinking screening and brief counseling
 - Aspirin chemoprophylaxis counseling
 - Breast cancer screening
 - Cervical cancer screening
 - Chlamydia screening
 - Colorectal cancer screening
 - Hypertension screening
 - Influenza immunization
 - Lipid screening
 - Pneumococcal immunization
 - Tobacco use screening and brief intervention
- Provide timely feedback, appropriate interventions and optimal follow-up. (*Annotation #6*)

Priority Aim

1. Increase the percentage of adult patients on time with Level I preventive services. (*Annotation #2*)

Key Implementation Recommendations

The following system changes were identified by the guideline work group as key strategies for health care systems to incorporate in support of the implementation of this guideline.

1. Prioritization and implementation of preventive services should be part of the overall system and should include the following:
 - Practice preventive services at every clinic opportunity while addressing high-priority services.
 - Individualize preventive services; regularly assess patient risk factors.
 - Provide resources around lifestyle change and available community resources.
2. Develop a plan for staff and provider education around preventive services and organizational goals for implementation of preventive services (should also include education around "level" of service and the rationale behind each level).
3. For those organizations having electronic medical records, develop a decision support component that will generate reminders for preventive services in order to support completion of recommended Level I services.
4. For those organizations with a paper medical record, create a "tickler" system that will generate reminders for preventive services in order to support completion of recommended Level I services.
5. Develop a "catch-up" plan for those patients who are not on time with services by creating a tracking system that allows for periodic medical record audits to identify patient gaps in preventive services.
6. Develop a collaborative relationship with patients in order to activate/motivate them to practice preventive health.
7. Place throughout the facility patient education materials that focus on preventive services and the importance of each. Materials may include, but are not limited to, posters, pamphlets, videos and available Web sites, as well as services available in the community.
8. Develop a process for encouraging the elderly that it is important for them to be accompanied by a family member/caretaker at each visit.

Related ICSI Scientific Documents

Guidelines

- Colorectal Cancer Screening
- Diagnosis of Breast Disease
- Diagnosis and Management of Type 2 Diabetes Mellitus in Adults
- Diagnosis and Treatment of Osteoporosis
- Diagnosis and Treatment of Respiratory Illness in Children and Adults
- Hypertension Diagnosis and Treatment
- Immunizations
- Initial Management of Abnormal Cervical Cytology (Pap Smear) and HPV Testing
- Lipid Management in Adults
- Major Depression in Adults in Primary Care
- Menopause and Hormone Therapy (HT): Collaborative Decision-Making and Management
- Palliative Care
- Prevention and Management of Obesity (Mature Adolescents and Adults)
- Preventive Services for Children and Adolescents
- Primary Prevention of Chronic Disease
- Routine Prenatal Care

Protocol

- Prevention of Falls (Acute Care)

Disclosure of Potential Conflict of Interest

ICSI has adopted a policy of transparency, disclosing potential conflict and competing interests of all individuals who participate in the development, revision and approval of ICSI documents (guidelines, order sets and protocols). This applies to all work groups (guidelines, order sets and protocols) and committees (Committee on Evidence-Based Practice, Cardiovascular Steering Committee, Women's Health Steering Committee, Preventive & Health Maintenance Steering Committee and Respiratory Steering Committee).

Participants must disclose any potential conflict and competing interests they or their dependents (spouse, dependent children, or others claimed as dependents) may have with any organization with commercial, proprietary, or political interests relevant to the topics covered by ICSI documents. Such disclosures will be shared with all individuals who prepare, review and approve ICSI documents.

Pam Stultz, RN has a spouse previously employed by Enteromedics.

Larry Morrissey, MD declared that Stillwater Medical Group received funding for shared decision-making implementation from The Foundation for Informed Medical Decision-making.

No other work group members have potential conflicts of interest to disclose.

Introduction to ICSI Document Development

This document was developed and/or revised by a multidisciplinary work group utilizing a defined process for literature search and review, document development and revision, as well as obtaining input from and responding to ICSI members.

For a description of ICSI's development and revision process, please see the Development and Revision Process for Guidelines, Order Sets and Protocols at <http://www.icsi.org>.

Evidence Grading System

A. Primary Reports of New Data Collection:

- Class A: Randomized, controlled trial
- Class B: Cohort study
- Class C: Non-randomized trial with concurrent or historical controls
Case-control study
Study of sensitivity and specificity of a diagnostic test
Population-based descriptive study
- Class D: Cross-sectional study
Case series
Case report

B. Reports that Synthesize or Reflect Upon Collections of Primary Reports:

- Class M: Meta-analysis
Systematic review
Decision analysis
Cost-effectiveness analysis
- Class R: Consensus statement
Consensus report
Narrative review
- Class X: Medical opinion

Citations are listed in the guideline utilizing the format of (*Author, YYYY [report class]*). A full explanation of ICSI's Evidence Grading System can be found at <http://www.icsi.org>.

Algorithm Annotations

Introduction

This guideline encompasses preventive services including screening maneuvers, health behavior counseling and disease screening for individuals of average health risk. It represents a synthesis of recommendations from other ICSI guidelines, primary evidence through literature reviews, recommendations from other organizations (particularly the U.S. Preventive Services Task Force) and work group consensus.

Insofar as possible, the work group has relied on their judgment of the best scientific evidence, but when the scientific data are lacking or the evidence is equivocal, the work group has provided a preference-based approach, allowing patients and providers to use shared decision-making about specific preventive interventions.

Organizing a Practice for Delivery of Preventive Services

It is our assumption that this guideline will primarily serve as a guide for medical groups to develop practice systems for their delivery. While individual clinicians are welcome to refer to this guide, we do not expect that to be common; it certainly is not the best way to provide important services at high rates. Such an achievement clearly requires the establishment of systems that rely on standing orders, task delegation, reminders and other automatic ways to identify needs and provide the services.

Prioritization Among Preventive Services

Virtually all clinical preventive services that are known to be effective address diseases of high health and financial burden. However, it may not be feasible to deliver all effective preventive services in the current health care system. It has been estimated that providing all clinical preventive services recommended by The U.S. Preventive Services Task Force would require 7.4 hours of primary care clinician time each day (*Yarnall, 2003 [M]*). Therefore health systems, large medical groups and small primary care practices must decide which of the effective preventive services to emphasize. To assist in the decision-making, the work group has prioritized the services, which are ranked by evidence of effectiveness, based upon the sum of their clinically preventable burden and cost effectiveness.

Although most preventive services target high-burden conditions, not all are equally effective in reducing disease, and each service has its own cost. A 2006 study ranked the 25 clinical preventive services and groups of services recommended by The U.S. Preventive Services Task Force or the Advisory Committee on Immunization Practices for the U.S. general population based on the services' health impact and cost effectiveness (*Maciosek, 2006 [M]*).

By focusing on services with relatively high health impact and favorable cost effectiveness, health care decision-makers can direct limited resources to a set of preventive services that produce the largest health improvements. The services in this guideline are organized alphabetically into four groups, based on their evidence of effectiveness and their priority ranking, as follows:

- | | |
|-----------|--|
| Level I | Preventive services that providers and care systems <i>must</i> assess the need for and offer to each patient. These have the highest priority value. (<i>Annotation #2</i>) |
| Level II | Preventive services that providers and care systems <i>should</i> assess the need for and offer to each patient. These have value but less than those in Level I. (<i>Annotation #3</i>) |
| Level III | Preventive services for which the evidence is currently incomplete and/or high burden of disease and low cost of delivering the care. Providing these services is left to the judgment of individual medical groups, clinicians and their patients. (<i>Annotation #4</i>) |

Algorithm Annotations

Level IV Preventive services that are not supported by evidence and not recommended.
(Annotation #5)

Level I services are worthy of attention at every opportunity. Busy clinicians may not be able to deliver this many services in any single encounter. However, with systems in place to track whether or not patients are up to date with the high-priority preventive services recommended for their age group, clinicians can offer the high-priority services as opportunities present.

Level II services have been shown to be effective and should be provided whenever possible. If systems care management teams are successful in keeping patients up to date with high-priority services during illness and disease management visits, preventive services in the second group can be delivered at any opportunity once Level I services are complete.

Level III services could be left to the judgment of individual medical groups, clinicians and their patients. These services either have insufficient evidence to prove their effectiveness and/or have important harms. For these preventive services in particular, decisions about offering the service should be made based on shared decision-making. It is important to remember that insufficient evidence does not mean the service is not effective, but rather that the current literature is not sufficient to say whether or not the service is effective.

Level IV services are those with low predictive value and/or uncertain beneficial action for true positives. They may also be a combination of insufficient evidence, potential for harm in treatment, no defined benefit and/or overuse.

Patients and families should have the opportunity to have knowledge of the risks and benefits of the available preventive services. There is good evidence that well-designed decision aids can improve patient knowledge (*O'Connor, 2006 [M]*). Patients and families should be encouraged to actively participate in the process of decision-making to the extent that they desire (*Institute of Medicine, 2001 [NA]*). The extent to which a preventive service is supported by the medical evidence should be clearly communicated to all patients.

Opportunity for Prevention

Nearly every patient contact for any reason should be used as a possible prevention opportunity. Relying upon routine "checkup" appointments for the delivery of these services will clearly miss many patients, especially those who may need them the most. It is also important to consider ways to remind patients of their need for these services at other times than during office visits.

Counseling Services

While there is good evidence that modifying certain behaviors has positive health benefits (unsafe sex, accidents and safety, nutrition, physical activity), there is minimal evidence at present that screening for these conditions or asking about them in the context of a risk assessment, even if followed by advice from a physician or other provider, will result in a change in behavior or positive outcomes. Therefore, this guideline makes:

- minimal recommendations for risk assessment to drive counseling for what are largely lifestyle issues,
- specific recommendation that risk assessment and counseling about lifestyle not be considered suitable parameters for systematic implementation measures, and
- counseling messages for those clinicians who want to provide such counseling or whose patients express an interest in receiving this information.

Nevertheless, there is no question that the elimination of the unhealthy behaviors addressed in this document would significantly reduce morbidity and mortality in the general population. Modifiable health behav-

iors account for up to 50% of premature deaths in this country (*Flegal, 2005 [C]*). Furthermore, the main problem is the lack of good controlled trials of such counseling, not that there are trials showing mixed or no effects. Therefore, clinicians may choose to provide such counseling even though we do not yet have a solid evidentiary basis for it.

See also Appendix A, "Counseling Messages."

Systematic Delivery of Care

Achieving the goal of most effectively providing preventive services requires a coordinated effort of the patient and all individuals providing care to that patient. Standing orders, task delegation, reminders and other automated systems are essential to ensuring the consistent delivery of preventive services. This guide should help support awareness of the needed preventive services for providers and can be a valuable resource for understanding the evidence behind the services offered. We encourage all providers of health care to be aware of the services needed at each visit. Reliance on the individual clinician alone to recall services that are needed is not sufficient to provide consistent delivery of these needed interventions. It is not advisable to rely solely on any one individual to deliver preventive services. Continuity of care has been shown to improve the consistency with which services are delivered (*Flores, 2008 [B]*).

Physical Exam

Most of the elements of the traditional physical examination are notably absent from these recommendations. The physical examination was originally developed and taught as a way to thoroughly evaluate the patient with a significant health problem or complaint, particularly one in a hospital setting. It was not designed as a screening test for an asymptomatic person. It fails nearly all of the criteria for an effective screening test in an asymptomatic person identified by most authorities. While there is minimal evidence for almost any part of the physical exam as a major component of providing preventive services, we recognize that portions of the exam done in response to specific complaints are of value.

The elements of the physical exam that have been sufficiently studied and are recommended by this guideline are blood pressure evaluation as part of hypertension screening (Level I); height, weight and BMI as part of obesity screening (Level II), vision screening (Level II) and hearing screening (Level II).

For the other exams specifically mentioned in the guideline, there is incomplete evidence and/or high burden of disease and low cost of delivery care: for clinical breast exam screening (Level III), digital rectal exam of the prostate (Level III) and skin cancer screening for the general population (Level III). Level III services are left to the judgment of individual medical groups, clinicians and their patients.

1. System Support/Alerts for Preventive Services

In order to provide consistent, high-quality care, the identification and delivery of preventive services needed by each patient require a systematic care team-based approach rather than relying solely on the memory and actions of individual clinicians. Components of system support include not only standing orders, task delegation, and automatic reminders, but also concepts such as previsit planning, postvisit or between-visit outreach, decision support, system alerts, shared decision-making, patient activation, and care management (*Bodenheimer, 2003 [R]*).

In order to provide preventive services, it is first necessary to know which services are needed for individual patients. This includes both knowing when the last services were provided and an evaluation of individual risk factors. The ICSI guideline Primary Prevention of Chronic Disease can be a helpful starting point. As the dates of latest service and risk factors are identified, they should be recorded in the medical record in a way that facilitates visualization and action during visits.

Nearly every patient contact for any reason should be used to identify and address preventive service needs. Involve patients in all decisions, and document service was offered and if patient refused. A system that supports preventive care should include both the patient and the whole care team. However, the work group recognizes that urgent or emergent visits or even routine visits may not always present preventive service opportunities. In order to facilitate the necessary prioritization of services when time is limited, we have separated effective services into two groups so that those services that have the largest impact and are most cost effective can be addressed first. The "must" versus "should" wording is meant to separate Level I and II services in terms of clinical actions and level of evidence. This prioritization can be used during individual patient visits, as well as by the clinic or medical group in developing or improving practice systems for addressing the needs of whole clinic populations.

Shared decision-making, a process where the patient and the provider discuss options and try to ensure that the decision made is consistent with a patient's values and preferences, is a key element of implementing preventive care.

2. Preventive Services That Providers and Care Systems *Must* Assess the Need for and Offer to Each Patient. These Have the Highest Priority Value (Level I)

Level I preventive services are worthy of attention at every opportunity. Busy clinicians cannot deliver this many services in any single encounter. However, with systems in place to track whether or not patients are up to date with the high-priority preventive services recommended for their age group, clinicians can offer the high-priority services as opportunities present.

Alcohol Abuse; Hazardous and Harmful Drinking Screening and Brief Counseling (Level I)

Service

Providers must identify those with risky or hazardous drinking, as well as those who have carried that behavior to the point of meeting criteria for dependence, and then provide a brief intervention. In the U.S., risk/hazardous drinking is defined as the number of standard drinks (12 oz. beer, 1 glass of wine or mixed drink) in a given time period:

- Healthy women (and healthy men over 65 years): no more than 7 drinks per week or no more than 3 drinks per occasion
- Healthy men (less than 65 years): no more than 14 drinks per week and no more than 4 drinks per occasion

(U.S. Department of Health and Human Services, 2007 [R])

Screening can be done by using a validated questionnaire such as the AUDIT, which detects hazardous or harmful alcohol use and is more amenable to brief interventions (Saunders, 1993 [C]).

Other questionnaires, especially the four-question CAGE-AID (Brown, 1995 [C]), are primarily designed to identify patients with dependence or abuse, and do not include questions about the quantity or frequency (Fiellin, 2000 [C]).

See Appendix B, "Alcohol Use Disorders Identification Test (AUDIT) Structured Interview," and see the Resources Available table for "Substance Abuse and Mental Health Services Administration" for the CAGE-AID and other screening tools.

Efficacy

The U.S. Preventive Services Task Force in 2004 "found good evidence that screening in primary care settings can accurately identify patients whose levels or patterns of alcohol consumption do not meet criteria for alcohol dependence but place them at risk for increased morbidity and mortality." It also "found good evidence that brief behavioral counseling interventions with follow-up produce small to moderate reductions in alcohol consumption that are sustained over 6- to 12-month periods or longer" (*Whitlock, 2004 [M]*). In a standardized review of the clinically preventable burden and cost effectiveness of 25 preventive services recommended by the U.S. Preventive Services Task Force, Solberg et al. found this service to have the fourth-highest priority score and one of only six services that were actually cost-saving from a societal perspective. Additionally, the authors demonstrated that problem drinking screening and brief interventions in primary care are two of the most health effective and cost-effective clinical preventive services. They rank very close to tobacco cessation counseling, yet are two of the least commonly delivered (*Solberg, 2008 [M]*).

Counseling messages

Brief counseling should follow the 5A model (a variation on tobacco intervention guideline):

- Assess current and historical use of alcohol.
- Advise patients to reduce use to moderate levels and avoid binge drinking.
- Agree on individual goals for reduction or abstinence.
- Assist with motivation, skills and supports.
- Arrange follow-up support and repeated counseling, including referral if needed.

Other messages that may be of value include:

- Advise all females of childbearing age of the harmful effects of alcohol on a fetus and the need for cessation during pregnancy.
- Reinforce not drinking and driving.
- Advise patients to not ride with someone under the influence of alcohol and to prevent him or her from driving.

Related guidelines

ICSI Primary Prevention of Chronic Disease guideline.

Aspirin Chemoprophylaxis Counseling (Level I)

Service

Aspirin chemoprophylaxis must be encouraged for men age 45 to 79 years when the potential benefit of a reduction in myocardial infarctions outweighs the potential harm of an increase in gastrointestinal hemorrhage and for women age 55 to 79 years when the potential benefit of a reduction in ischemic strokes outweighs the potential harm of an increase in gastrointestinal hemorrhage.

A risk assessment for heart disease (men) or stroke (women) is necessary to deliver this service. Online tools to assess 10-year coronary heart disease and stroke risk are available at:

Medical College of Wisconsin: www.mcw.edu/calculators/CoronaryHeartDiseaseRisk.htm

Western States Stroke Consortium: www.westernstroke.org/PersonalStrokeRisk1.xls

U.S. Preventive Services Task Force guidance on using 10-year CHD and stroke risk to weigh harms and benefits is summarized in the tables later in this section.

Algorithm Annotations

Efficacy

The U.S. Preventive Services Task Force recommends a risk assessment and discussion of aspirin therapy for primary prevention of myocardial infarction in men and ischemic stroke in women with patients at risk of coronary heart disease (CHD) (*U.S. Preventive Services Task Force, 2009a [R]*).

Although the U.S. Preventive Services Task Force found there is fair evidence that higher doses of aspirin and NSAIDs used over longer periods of time may reduce the incidence of colorectal cancer, the task force concludes the harms outweigh the benefits and recommends against routine use of aspirin and NSAIDs for the primary prevention of colorectal cancer in average-risk individuals (*Dubé, 2007 [R]*).

A meta-analysis (*Berger, 2006 [M]*) of pooled data from six primary prevention randomized trials showed that aspirin therapy reduced the risk of myocardial infarctions (MIs) by 72% in men (based on 5 studies), but found no MI risk reduction in women (based on 3 studies). The same analysis showed a risk reduction for ischemic stroke of 24% in women (based on 2 studies), but found no ischemic stroke risk reduction for men (based on 4 studies). When the increased risk of hemorrhagic stroke was factored in, the study showed a decrease in combined ischemic and hemorrhagic strokes of 17% in women and a non-statistically significant increase in stroke risk of 13% in men. These primary prevention trials, and a larger number of trials of secondary prevention, also demonstrate that aspirin therapy increases rates of gastrointestinal bleeding.

Estimates of the magnitude of benefits and harms of aspirin therapy vary with an individual's risk for CHD and stroke. The probability of a prevented MI exceeds the risk of gastrointestinal bleeding and hemorrhagic stroke risk for men with the following age and 10-year CHD risk:

| Age | 10-Year CHD Risk |
|-------|------------------|
| 45-59 | ≥ 4% |
| 60-69 | ≥ 9% |
| 70-79 | ≥ 12% |

The probability of a prevented ischemic stroke exceeds the risk of GI bleeding and hemorrhagic stroke risk for women with the following age and 10-year stroke risk:

| Age | 10-Year Stroke Risk |
|-------|---------------------|
| 55-59 | ≥ 3% |
| 60-69 | ≥ 8% |
| 70-79 | ≥ 11% |

The U.S. Preventive Services Task Force encourages shared-decision-making about daily low-dose aspirin use with men and women whose 10-year CHD and stroke risk, respectively, meet these levels (*U.S. Preventive Services Task Force, 2009a [R]*).

The optimum dosage of aspirin therapy is not known. Doses of 81 milligrams per day appear as effective as higher doses.

Breast Cancer Screening (Level I)

Service

Screening mammogram must be performed every one-two years for women age 50-75 years. [Conclusion Grade I: See Conclusion Grading Worksheet A – Annotation #2 (Breast Cancer Screening Mammography)]

Screening mammograms could be offered to women ages 40-49 and over the age of 75. This decision should be made in the context of discussing potential benefits and harms based on patient age, values, concerns and circumstances. [Conclusion Grade III: See Conclusion Grading Worksheet A – Annotation #2 (Breast Cancer Screening Mammography)]

Efficacy

The most important tool in the early detection of breast cancer is screening mammography. The U.S. Preventive Services Task Force updated its recommendation in 2002, finding "fair evidence that mammography screening every 12 to 33 months significantly reduces mortality from breast cancer." They concluded that the evidence is strongest for women aged 50-69 and that the clinical trials reveal no clear difference due to interval within the 12- to 33-month time range. Their recommendation is for "mammography, with or without clinical breast exam every one-two years for women aged 40 and older" (Humphrey, 2002 [M]). This extension to the 40- to 49-year-old group has been controversial as the evidence is fair to limited for mortality reduction for low-risk women of this age group. Therefore routine screening of women age 40-49 and over age 75 is left to the judgment of the individual medical groups, clinicians and their patients.

Related guidelines

ICSI Diagnosis of Breast Disease guideline.

Cervical Cancer Screening (Level I)

Service

All women must be screened for cervical cancer beginning at age 21 or three years after initiating sexual intercourse, whichever is earlier (Saslow, 2002 [R]). Screening should be performed every three years after three consecutive normal Pap smears over five years (Hartmann, 2002 [R]; Sawaya, 2003 [M]).

For women who have had a total hysterectomy for benign disease, and who do not have a history of cervical intraepithelial neoplasia (CIN) 2/3, Pap smears are no longer indicated.

Human papillomavirus (HPV) testing may be used as an adjunct to Pap smear screening to help minimize unnecessary colposcopies and other interventions (Solomon, 2001 [C]). The role of HPV testing has been expanding (Mayrand, 2007 [C]; Naucner, 2007 [A]). The work group will continue to review new evidence.

Efficacy

Currently there is no evidence to support more frequent Pap smears during the prenatal/postpartum period. In fact, hormone levels up to six weeks postpartum are often not yet back to normal, which can influence Pap smear results.

The U.S. Preventive Services Task Force has recommended against Pap smears over age 65 (Hartmann, 2002 [M]), although the work group did not find evidence for or against continued screening in women after age 65 who have had previous normal screening (Armaroli, 2008 [B]; Blanks, 2009 [B]; Flannelly, 2004 [B]; Rebolj, 2009 [B]).

Algorithm Annotations

Related guidelines

ICSI Initial Management of Abnormal Cervical Cytology (Pap Smear) and HPV Testing guideline.

Chlamydia Screening (Level I)

Service

Routine screening for chlamydia must be performed for all sexually active women aged 25 years and younger, and older women at increased risk for infection (*Centers for Disease Control and Prevention, 2002 [R]; Meyers, 2007 [M]*).

Risk factors include:

- having new or multiple sex partners,
- having prior history of a sexually transmitted infection (STI), and
- not using condoms consistently and correctly.

Burden of suffering

Chlamydia is the most common bacterial sexually transmitted infection in the United States. An estimated three million new cases occur annually, with the majority being asymptomatic when initially infected. If left untreated, chlamydia infections can lead to serious complications, including pelvic inflammatory disease (PID), infertility and increased risk of human immunodeficiency virus (HIV) infection. It has been shown that having a process to identify, test and treat women at risk for cervical chlamydia infections is associated with a decreased incidence of pelvic inflammatory disease (*Scholes, 1996 [A]*).

Efficacy

The sensitivity of available screening tests for chlamydia infection is 80% and higher (*Cook, 2005 [M]*). The U.S. Preventive Services Task Force does not recommend a specific screening test as studies have generally been performed in ideal circumstances in small populations with high prevalence rates. However, they concluded that nucleic acid amplification tests had higher sensitivities and specificities than older antigen detection tests and better sensitivities than culture (*Meyers, 2007 [M]*). Following detection, treatment with antibiotics approaches 100% efficacy. Two randomized studies have observed a decrease in pelvic inflammatory disease following chlamydia screening (*Ostergaard, 2000 [C]; Scholes, 1996 [A]*).

Colorectal Cancer Screening (Level I)

Service

Colorectal cancer screening must be performed in average-risk patients 50 years of age, or 45 years of age and older for African Americans. No older age limit has been clearly established, although 80 has been suggested. The decision to stop screening would clearly be influenced by comorbidities, patient preferences and expected life span (at least 8 to 10 years to warrant continued screening). The U.S. Preventive Services Task Force has performed an assessment of life-years gained and colonoscopy requirements for colorectal cancer screening strategies, this document may be referenced for upper age limits (*U.S. Preventive Service Task Force, 2008a [R]*).

Efficacy

Criteria for routine screening for colorectal cancer:

- 50 years old or if African American, 45 years old (*Agrawal, 2005 [R]*)
- No personal history of polyps and/or colorectal cancer

Algorithm Annotations

- No personal history of inflammatory bowel disease (*Winawer, 2003 [R]*)
- No family history of colorectal cancer in:
 - one first-order relative diagnosed before age 60, or
 - two first-order relatives diagnosed at any age (*Fuchs, 1994 [B]*)
- No family history of adenomatous polyps in:
 - One first-order relative diagnosed before age 60

(A single first-degree relative diagnosed with colorectal cancer after age 60 may put an individual at a slightly increased risk and may warrant starting colorectal cancer screening at age 40. A single first degree relative with an adenomatous polyp diagnosed after age 60 may put the individual at a slightly increased risk and may also warrant starting colorectal cancer screening at age 40 (*Ahsan, 1998 [C]*; *Winawer, 1996 [C]*).

Tests to primarily detect cancer

Stool testing

Guaiac-based fecal occult blood testing (gFOBT) annually

Fecal immunochemical testing (FIT) annually

Stool DNA testing (sDNA), interval unknown

Tests to detect adenomatous polyps and cancer

60 cm flexible sigmoidoscopy every five years with or without stool test for occult blood annually

Double-contrast barium enema every five years

CT colonography every five years

Colonoscopy every ten years

The ICSI Colorectal Cancer guideline summarizes the evidence for the effectiveness of the various screening tests commonly used for colorectal cancer screening.

Related guidelines

ICSI Colorectal Cancer Screening guideline.

Hypertension Screening (Level I)

Service

To detect and monitor hypertension, blood pressure must be measured at least every two years for adults with blood pressure less than 120/80 and every year if blood pressure is 120-139/80-89 Hg. Higher blood pressures should be confirmed and managed per protocol. As a practical matter, this standard may be most reliably implemented if blood pressure is measured at every patient visit (*Chobanian, 2003 [R]*).

Efficacy

Periodic screening in adults at patient visits

Hypertension is an important public health problem that affects 25%-30% of adult Americans. Hypertension is a major risk factor for ischemic heart disease, left ventricular hypertrophy, renal failure, stroke and dementia. Conversely, blood pressure control is correlated with a reduction in incidence of myocardial infarctions, strokes and heart failure (*Chobanian, 2003 [R]*; *Lewington, 2002 [M]*).

Algorithm Annotations

Standardized blood pressure measurement

Accurate, reproducible blood pressure measurement is necessary to ensure correct blood pressure classification and to allow valid comparisons among serial pressure recordings (*Chobanian, 2003 [R]*).

Blood pressure screening classification

The relationship between blood pressure measurement and vascular risk is continuous and graded. The risk of cardiovascular disease doubles with each increment of 20/10 above 115/75. Thus the classification of adult blood pressure is somewhat arbitrary (*Chobanian, 2003 [R]*; *Lewington, 2002 [M]*).

Confirming elevation/education and risk factor assessment

A proposed follow-up schedule based on the initial blood pressure level, as well as diabetes, cardiovascular or renal disease and risk factors, is noted in the Hypertension Diagnosis and Treatment guideline. Recommend blood pressure confirmation and follow-up within two months if the blood pressure is 140-159/90-94. Recommend blood pressure confirmation and follow-up within one month if the blood pressure is greater than 160/100.

Counseling messages

- If blood pressure is greater than 120/80, it needs to be confirmed and evaluated in the context of the patient's risk factors.

While the evidence is limited, clinicians may consider encouraging patients to modify lifestyle to promote blood pressure control, especially in the presence of additional risk factors for vascular disease, such as dyslipidemia or diabetes mellitus. Important modifications include weight loss if overweight, limiting alcohol use, nicotine abstinence, increased physical activity and reduced dietary sodium and increased potassium and calcium intake (*Chobanian, 2003 [R]*; *Wong, 2003 [C]*).

Related guidelines

ICSI Hypertension Diagnosis and Treatment guideline.

Influenza Immunization (Level I)

Service

Immunization must be provided annually during flu season for individuals age 50 and older, those at high risk, and others.

Related guidelines

ICSI Immunizations guideline.

Lipid Screening (Level I)

Services

A fasting cholesterol fractionation (total cholesterol, calculated LDL cholesterol, HDL cholesterol and triglyceride) must be done for men over age 34 and women over age 44 every five years.

If patient is not fasting and probability of a return visit is low, consider checking total cholesterol and HDL cholesterol. If available, also consider measuring direct LDL cholesterol.

Based on risk assessment, patients and providers should discuss the issues surrounding lipid screening with men between the ages of 20 and 34 years and women between the ages of 20 and 44 years. A specific example would be the need to screen those men aged 20-34 years and women aged 20-44 years with first-degree relatives with total cholesterol greater than 300 or history of premature CHD.

Algorithm Annotations

Individuals with total cholesterol less than 200, LDL less than 130, triglyceride less than 200, and HDL of 40 or above have a desirable cholesterol level and should be advised to repeat cholesterol fractionation in five years.

Individuals with total cholesterol greater than or equal to 200, LDL greater than or equal to 130, triglyceride greater than or equal to 200, and HDL less than 40 may be at higher risk of vascular disease, and these patients should follow treatment recommendations as outlined in the ICSI Lipid Management in Adults guideline.

Patients whose screening recommendations would be different include those who:

- have histories of CHD, cerebrovascular disease (CVD), peripheral vascular disease (PVD), diabetes mellitus (DM), metabolic syndrome or who are being case managed for dyslipidemia. Their disease management will involve a more aggressive approach to lipid monitoring;
- have health status or life expectancy that would not be affected by knowledge of their lipid status (e.g., those with comorbid conditions such as terminal cancer); and
- are in circumstances where cholesterol levels may not represent their usual levels. These situations include acute illness, hospitalization, unintended weight loss, pregnancy or lactation within the previous three months. Screening should be delayed under these circumstances.

Lipid testing is recommended because elevated LDL, elevated triglycerides and low HDL are important risk factors for CHD. Treatment of these risk factors is readily available and significantly decreases the risk for CHD.

Efficacy

There is good evidence that lipid measurements can identify in men greater than age 34 years and women greater than age 44 years individuals at increased risk of CHD and good evidence that treatment substantially reduces the incidence of CHD (*Anderson, 1987 [B]*; *Garber, 1996 [M]*; *Heart Protection Study Collaborative Group, 2002 [A]*; *National Cholesterol Education Program, 2001 [R]*; *Neaton, 1992 [B]*; *Pignone, 2001 [M]*; *Shepherd, 2002 [A]*; *Shepherd, 1995 [A]*).

No clinical trials address the treatment of dyslipidemia among men aged 20-34 years and among women aged 20-44 years. Screening should be individualized for patients in these age groups.

Fractionated cholesterol is the most effective screening test for dyslipidemia because elevated LDL and triglycerides and low HDL are risk factors for vascular disease (*National Cholesterol Education Program, 2001 [R]*).

Some patients should not be offered lipid screening as outlined in this guideline. It is well recognized that cholesterol interpretation depends on the presence of other risk factors for large vessel disease. Patients with diabetes mellitus are at high risk for large vessel disease and for that reason should undergo aggressive lipid management. Patients with CAD, PVD and/or CVD should also be aggressively managed for dyslipidemia (*Levy, 1993 [R]*).

Related guidelines

ICSI Lipid Management in Adults guideline.

Pneumococcal Immunization (Level I)

Service

High-risk groups must be immunized once. Reimmunize those at risk of losing immunity once after five years. Immunize at 65 if not done previously. Reimmunize once if first received was greater than five years ago and before age 65 or an appropriate immunocompromising condition is present.

Related guidelines

ICSI Immunizations guideline.

Tobacco Use Screening and Brief Intervention (Level I)

Service

Providers must establish tobacco use status for all patients and reassess at every opportunity. All forms of tobacco should be included. Provide ongoing cessation services to all tobacco users at every opportunity (*Fiore, 2008 [R]; (U.S. Preventive Services Task Force, 2009b [R])*).

Reinforce non-users to continue non-use of tobacco products.

Offer tobacco cessation services on a regular basis to all patients who use tobacco. (All forms of tobacco should be considered.)

Establish secondhand smoke exposure status for all patients. Advise all patients exposed to secondhand smoke that exposure is harmful. Encourage a smoke-free living and working environment for patients, and assist the exposed patient to communicate with other household members about decreasing smoke in their house. Encourage the patient to support smoking cessation efforts among other household members who use tobacco (*Fiore, 2008 [R]*).

Efficacy

Tobacco use is the single most preventable cause of death and disease in our society. There is good evidence that clinical-based interventions are effective. There is good evidence that tobacco cessation interventions are best carried out when the entire clinical staff is organized to provide these services (*Fiore, 2008 [R]; U.S. Preventive Services Task Force, 2009b [R]*).

Structured physician clinical-based smoking cessation counseling is more effective than usual care in reducing smoking rates (*Katz, 2004 [A]*). The addition of telephone-based counseling may result in further improvements in cessation (*Zhu, 2002 [A]*). The success of this approach in the adult population has led to the adoption of the same approach in the pediatric population. Numerous effective pharmacotherapies for smoking cessation now exist. Except in the presence of contraindications, these should be used with all patients attempting to quit smoking.

While readiness-stage intervention is commonly used, evidence does not strongly support it (*Riemsma, 2003 [M]*).

Two treatment elements are effective for tobacco cessation intervention: social support for cessation and skills training/problem-solving. The more intense the treatment, the more effective it is in achieving long-term abstinence from tobacco.

Counseling messages

The key components of successful tobacco cessation interventions are:

- Ask about tobacco use and smoke exposure at every opportunity.
- Advise all users to quit.
- Assess willingness to make a quit effort.
- Provide a motivational intervention if the user is not ready to make a quit effort (*Fiore, 2008 [R]*). See ICSI Primary Prevention of Chronic Disease guideline for more information.
- Assist users who are willing to make a quit attempt.
- Arrange follow-up.

For all ages:

- If accompanying household member uses tobacco, encourage member to quit. If the member user is interested in quitting, encourage a visit at his or her clinic for more cessation assistance.
- Provide educational and self-help materials.

Related guidelines

ICSI Primary Prevention of Chronic Disease guideline.

3. Preventive Services That Providers and Care Systems *Should* Assess the Need for and Offer to Each Patient. These Have Value but Less Than Those in Level I (Level II)

Level II services have been shown to be effective and should be provided whenever possible. If systems/care management teams are successful in keeping patients on time with high-priority services during illness and disease management visits, preventive services in the second group can be delivered at any opportunity once Level I services are complete.

Abdominal Aortic Aneurysm Screening (Level II)

Screening

For *men* ages 65-75 who have *ever* (greater than 100 cigarettes in lifetime) smoked, a one-time screening ultrasonogram for abdominal aortic aneurysm should be performed.

For *men* ages 65-75 who have *never* smoked, there are no recommendations for or against a one-time screening ultrasonogram for abdominal aortic aneurysm.

For *women*, regardless of age or smoking status, screening ultrasonography for abdominal aortic aneurysm *is not recommended*.

(Fleming, 2005 [M])

Efficacy

An abdominal aortic aneurysm (AAA) is defined as an infrarenal aortic diameter greater than 3.0 cm (normal diameter 2 cm). The overall prevalence of AAA is 4.2%-8.8% in men and 0.6%-1.4% in women. About 9,000 deaths occur annually in the U.S. due to AAA rupture; the majority of deaths occur before the victim reaches the hospital, but the surgical mortality is also very high (41%). Elective repair of AAA bears a relative low mortality and ranges from 1% to 5% depending upon technique used, volume of AAA procedures done by the operator and hospital, etc.

The most prominent AAA risk factors are male gender, age and smoking. Other risk associations include family history, coronary artery disease, hypercholesterolemia and hypertension. Negative risk associations include female gender, diabetes and black race.

Abdominal ultrasonography is very effective in identifying AAA. Computerized tomography and magnetic resonance imaging are also effective but more costly.

A meta-analysis (*U.S. Department of Health and Human Services, 2005 [R]*) of prospective studies demonstrate that "screening significantly reduces AAA-related mortality in men age 65 to 80 years" with a summary odd ratio of 0.57. But "no significant reduction in all-cause mortality was evident with screening." For never smokers, the evidence shows that AAA screening also decreases AAA-related pathology, but the much lower prevalence of AAA in this group limits the benefits and thus precludes a positive or negative screening

recommendation. The studies in women are more limited, but due to an even lower AAA prevalence than never-smoker men, demonstrate no screening benefit (*Scott, 2002 [A]*).

Depression Screening (Level II)

Service

Routine depression screening should be performed for adult patients but only if the practice has "systems in place to ensure that positive results are followed by accurate diagnosis, effective treatment, and careful follow-up. Benefits from screening are unlikely to be realized unless such systems are functioning well" (*Pignone, 2002 [M]*).

There are many instruments that have been well tested and validated for screening, ranging from two questions to the PHQ-9, a nine-question survey that is being increasingly used in primary care settings to estimate severity and provide monitoring over time, as well as for initial screening (*Löwe, 2004 [C]*; *Spitzer, 1999 [C]*). See the ICSI guideline for Major Depression in Adults in Primary Care and the "Resources Available" section of this guideline for example instruments and recommendations about management.

Efficacy

When combined with systematic management, screening can be very effective. There is now considerable evidence from many randomized trials (*Gilbody, 2003 [M]*; *Oxman, 2002 [R]*) that it is possible to improve treatment (both medications and psychotherapy) in primary care settings for patients with depression, but these trials have all implemented systematic ways to:

- provide care management with close follow-up by a non-physician working with the primary care physician,
- enhance planned collaboration with mental health providers,
- provide education and self-management support.

Counseling messages

There is no evidence that simple brief messages have any effect.

Related guidelines

ICSI Major Depression in Adults in Primary Care guideline.

Folic Acid Chemoprophylaxis Counseling (Level II)

Service

Providers should counsel women of reproductive age to consume 400-800 micrograms of folic acid per day from food sources and/or supplements (*Wolff, 2009b [R]*).

Efficacy

Neural tube defects (NTDs) are common birth defects that affect approximately 3,000 pregnancies each year (*Centers for Disease Control and Prevention, 2004 [R]*). The occurrence of NTDs is reduced by 50%-70% with the daily periconceptional consumption of 400-800 micrograms of folic acid (*MRC Vitamin Study Research Group, 1991 [A]*). Not all women receive adequate levels of folic acid in their diets, and the 2005 March of Dimes Gallup survey indicated the number taking daily supplements is declining. When asked what would motivate them to take a supplement, the most common reported needs were being sick or a doctor's recommendation (*Centers for Disease Control and Prevention, 2005 [R]*).

Algorithm Annotations

Counseling messages

- Eat folic acid-rich foods and fortified foods such as dark green leafy vegetables; dried beans and peas; whole grain, fortified enriched grain products and breakfast cereals; and citrus fruits and berries.
- Take a vitamin supplement containing folic acid.

Related guidelines

ICSI Routine Prenatal Care guideline.

Hearing Screening (Level II)

Service

Subjective hearing screening (by questionnaire) followed by counseling on the availability of hearing aid devices and making referrals as appropriate should be provided for older adults. The work group concurs with the U.S. Preventive Services Task Force conclusion that there is insufficient data to recommend a specific screening frequency. Limited data on progression of hearing loss suggests that screening once every 2 to 10 years is reasonable.

Efficacy

No studies have directly demonstrated a relationship between hearing screening and improved hearing function, hearing-related quality of life, or activities of daily living. Inadequately corrected hearing can become a barrier to care, however. Hearing screening has been recommended for elderly adults by the USPSTF based upon separate evidence of high prevalence of hearing impairment, the accuracy and inexpensiveness of simple screening questionnaires, the effectiveness of hearing aids, and the willingness of 40%-60% of individuals to follow through with additional screening and purchase of hearing aids. The prevalence of uncorrected hearing loss in the elderly is approximately 25% (*Koike, 1989 [C]; Lichtenstein, 1988 [C]; Mulrow, 1990 [A]; Popelka, 1998 [C]*).

Evidence is not clear on a specific age cutoff, particularly for undetected hearing loss.

Hepatitis B Immunization (Level II)

Service

Hepatitis B universal routine vaccination should occur for young adults less than 40 years of age. Please pay special attention with regard to schedule and dosing as it varies by risk and age.

Related guidelines

ICSI Immunizations guideline.

Herpes Zoster/Shingles Immunization (Level II)

Service

Zoster vaccine should be given to all persons age 60 years and older who have no contraindications, including persons who report a previous episode of zoster or who have chronic medical conditions. The vaccine should be offered at the patient's first clinical encounter with his or her health care provider.

Related guidelines

ICSI Immunizations guideline.

Human Papillomavirus (HPV) Immunization (Females) (Level II)

Service

Routine use of the human papillomavirus (HPV) vaccine should be performed for all 11- to 12-year-old females and catch-up for females ages 12 through 26.

Related guidelines

ICSI Immunizations guideline for specific dosing schedule and intervals.

Inactivated Polio Vaccine (IPV) Immunization (Level II)

Service

Vaccination should occur for adults not previously immunized.

Related guidelines

ICSI Immunizations guideline.

Measles, Mumps, Rubella (MMR) Immunization (Level II)

Service

Adults who are lacking documentation of vaccination or evidence of disease and who were born during or after 1957 should receive one dose of measles. A second dose may be required in special circumstances.

Related guidelines

ICSI Immunizations guideline.

Obesity Screening (Level II)

Service

Height, weight and body mass index (body mass index) should be recorded at least annually.

A body mass index greater or equal to 30 is defined as obese, and a body mass index of 25-29 is defined as overweight. Intensive intervention for obese individuals, based on body mass index, is recommended by the U.S. Preventive Services to help control weight (*McTigue, 2003 [M]*).

Efficacy

The body mass index is reliable and valid for identifying adults at increased risk for mortality and morbidity due to obesity or overweight (*McTigue, 2003 [M]*).

Clinicians may use waist circumference as a measure of central adiposity. Men with waist circumferences greater than or equal to 40 inches (102 centimeters) and women with a waist circumference greater than or equal to 35 inches (88 centimeters) are at increased risk for cardiovascular disease (*Lean, 1998 [D]*). In the Health Professional Follow-up Study, overall and cardiovascular mortality in men increased linearly with baseline body mass index in younger men (those initially younger than 65 years) and had no relationship with body mass index in older men (those initially at least 65 years); by contrast, waist circumference predicted risk for overall and cardiovascular mortality among the younger men, and predicted risk for cardiovascular death among older men (*Baik, 2000 [B]*). The Iowa Women's Health Study found that the waist-hip ratio was a better predictor of total cardiovascular mortality than body mass index, and that even in women in the lowest body mass index quintile, there was a markedly increased risk for diabetes if they also had a high waist-hip ratio (*Folsom, 2000 [B]*).

Algorithm Annotations

The ICSI guideline, Prevention and Management of Obesity (Mature Adolescents and Adults), states that physician intervention can be effective; the physician can have an important influence, and successful weight management is possible. This guideline also states that weight management requires a team approach.

The National Weight Control Registry includes over 4,000 adults who have maintained at least a 30-pound weight loss for at least one year. 89% reported using both diet and physical activity for their loss. Over 55% reported receiving some type of weight loss assistance from a commercial program, physician or nutritionist. Most participants (83%) indicated a trigger for their weight loss. Medical triggers were most common (23%). A medical trigger was broadly defined and included such things as their physician telling them to lose weight or a family member having a heart attack. Those who stated medical reasons for their loss also had better initial losses and maintenance. Medical triggers were also associated with less regain during the two-year follow-up (*Wing, 2005 [R]*).

The U.S. Preventive Services Task Force concludes that there is insufficient evidence to recommend for or against routine behavioral counseling to promote either a healthy diet or physical activity (*Eden, 2002 [M]*; *Pignone, 2003 [M]*). However, intervention is encouraged due to the numerous benefits associated with consumption of a healthy diet and exercise in the prevention of obesity.

Primary care physicians could have a significant impact on dealing with obesity since its estimated that they see over 11% of the population every month (*Green, 2001 [C]*). Patients who reported receiving advice to lose weight during a routine checkup were more likely to report trying to lose weight than those who did not (*Galuska, 1999 [D]*).

Obese persons should be encouraged to enroll in programs that, at a minimum, have three in-person encounters in a three-month period, but to ensure effectiveness, such patients should be encouraged to enroll in intensive programs that last for a year, combine nutritional and exercise counseling, and have a long-term maintenance program (*McTigue, 2003 [M]*).

Related guidelines

ICSI Prevention and Management of Obesity (Mature Adolescents and Adults) guideline

ICSI Primary Prevention of Chronic Disease guideline

See also the "Resources Available" section of this guideline.

Osteoporosis Screening (Level II)

Service

Women age 65 and older should be screened for osteoporosis (*U.S. Preventive Services Task Force, 2002 [M]*).

For further information on how to proceed with DXA or bone density testing and for which patients these are indicated, see the ICSI Diagnosis and Treatment of Osteoporosis guideline.

Related guidelines

ICSI Prevention and Treatment of Osteoporosis guideline.

Tetanus-Diphtheria Immunization (Td/Tdap) (Level II)

Service

Td/Tdap should be administered to adults through age 64 of not previously immunized. One dose Td booster every 10 years, substitute one dose of Tdap for Td.

Adults age 65 and older should be administered Td booster.

Related guidelines

ICSI Immunizations guideline.

Varicella Immunization (Level II)

Service

For adults without evidence of immunity, a dose of varicella vaccine should be given followed by a second dose at an interval of at least 28 days. A catch-up second dose of varicella vaccine should be given to all children, adolescents and adults who received only one dose previously.

Related guidelines

ICSI Immunizations guideline.

Vision Screening (Level II)

Service

Objective vision testing (Snellen chart) for asymptomatic patients must be provided for adults age 65 and older. The work group concurs with the U.S. Preventive Services Task Force conclusion that there is insufficient data to recommend a specific screening frequency. Limited data on progression of vision loss suggests that screening once every 2 to 10 years is reasonable. For purposes of performance measurement, screening frequency is specified as once every five years.

Efficacy

The U.S. Preventive Services Task Force recently stated there is no evidence of improved functional ability or quality of life improvement (*Chou, 2009 [R]*) from vision screening. Primary studies reviewed by the work group found good evidence linking vision screening to improved vision and that vision screening is beneficial toward reducing falls.

A review of epidemiologic studies conducted in the United States, United Kingdom and Australia concluded that the prevalence of undercorrected visual impairment is about 10% between the ages of 65 and 75 and 20% above the age of 75 (*Evans, 2004 [R]*). These summary estimates include only one U.S. study (*Tielsch, 1990 [C]*) but are generally consistent with other U.S. studies (*Klein, 1996 [B]*; *Muñoz, 2002 [C]*; *West, 2003 [A]*).

Five vision screening randomized controlled trials failed to show an improvement in usual corrected vision (*Smeeth, 1998 [M]*). However, each study used vision questionnaires for screening rather than the recommended acuity testing. Vision questionnaires have poor sensitivity and specificity in identifying undercorrected vision impairment and are not recommended for use in screening. One randomized control trial of vision screening by acuity testing in primary care failed to find an improvement in visual acuity three to five years following screening (*Smeeth, 2003 [A]*). However, the ability to detect an effect may have been hampered by an analysis sample that included more individuals who failed to receive screening than individuals who tested positive for undercorrected visual acuity. The study did find a non-statistically significant improvement in binocular acuity, but not in the acuity of the lowest acuity eye.

A study of fall prevention among Australians 70 or more years of age found a non-statistically significant reduction in falls of 4.4% with vision screening alone (*Day, 2002 [A]*). Overall, the study results point toward an impact of vision screening on falls that could not be detected at a statistically significant level with sample size of the study. The same study did observe a statistically significant reduction of falls of 11.1% when vision screening was combined with an exercise program and 14.0% when vision screening was combined with an exercise program and home hazard management. The effect of fall prevention was 4.2% and 4.1% larger than the effects observed for the same interventions without a vision screening component.

4. Preventive Services for Which the Evidence Is Currently Incomplete and/or High Burden of Disease and Low Cost of Delivering Care. Providing These Services Is Left to the Judgment of Individual Medical Groups, Clinicians and Their Patients (Level III)

Level III services either have insufficient evidence to prove their effectiveness and/or have important harms. For these preventive services in particular, decisions about offering the service should be based on shared decision-making. It is important to remember that insufficient evidence does not mean the service is not effective, but rather that the current literature is not sufficient to say whether or not the service is effective.

Advance Directives Counseling (Level III)

Service

Counseling regarding an advance directive could occur in the following situations:

- At least every five years if an individual is age 19-64 and hasn't yet made a declaration and has no potentially life-threatening medical problems.
- At least every one-two years if an individual has potentially life-threatening medical problems or is more than 64 years old and hasn't made a declaration.
- All completed advance directives should be periodically reviewed by the individual and providers to make sure that the declaration accurately represents the individual's current wishes. A reappraisal is particularly important if the individual's medical status changes.

Efficacy

Burden of suffering

Everyone is at risk of entering into a medical crisis in which they are not competent to make decisions and in which the availability of an advance directive would be desirable. There is increased potential of psychological trauma to patient/family/providers if preferences are not addressed prospectively. Also, if therapies are applied or withheld against a patient's wishes, there are medical consequences plus misallocation of resources.

Efficacy of the intervention

There are mixed results in studies that seek to document whether or not the preferences documented in an individual's advance directive are consistently implemented or give sufficient guidance (*Danis, 1991 [C]; Teno, 1997 [A]*). But some studies do suggest that advance directives can be very effective in guiding subsequent hospital care (*Tolle, 1998 [B]*). Improvements in education of providers and patients, availability of completed advance directives and specificity of instructions are likely to improve effectiveness in the future.

Efficacy of counseling

Research has shown that simple counseling interventions can markedly increase the completion rate of advance directives (*Heffner, 1997 [C]; Rubin, 1994 [A]*).

Counseling messages

- For provider**
- The vast majority of people feel comfortable discussing this topic, but lack of provider initiative is cited as a major barrier to completion.

Algorithm Annotations

For all adult patients and providers

- Everyone should consider whether he or she would wish to have organs donated after death. If they would, they should sign a declaration.
- Everyone should consider what medical treatments to accept or refuse should they be unable to communicate their preferences to their doctor. These choices can go beyond addressing whether or not to receive cardiopulmonary resuscitation (CPR) and might include issues such as use of breathing machines (ventilators), feeding tubes, intravenous hydration, antibiotics, etc., depending upon circumstances.
- Everyone should complete an advance directive plus communicate preferences verbally to family and provider.
- An advance directive can also create a Durable Power of Attorney for Health Care designation, the legal designation of another person or persons (usually a family member or friend) to speak on his or her behalf regarding medical care choices if the author becomes incapable of making these decisions.

Related guidelines

For more information regarding the MN Health Care Directive, contact the Minnesota Board of Aging's Senior LinkAge Line at 1-800-333-2433 or go to the MN Department of Health Web site at: <http://www.health.state.mn.us/>.

See also the ICSI Palliative Care guideline.

Calcium Chemoprophylaxis Counseling (Level III)

Service

Counseling adults to get an adequate intake of calcium could be performed to prevent fractures.

Efficacy

Adequate calcium intake from food sources and supplements promotes bone health; however, the evidence is insufficient to recommend counseling. When food sources do not provide enough calcium, supplements can be used to meet intake goals. Bioavailability of calcium in food sources and supplements is a factor in achieving daily calcium recommendations.

Daily elemental calcium recommendations for healthy individuals from diet and supplement include:

| | |
|---------------|--|
| 19-50 years | 1,000 milligrams |
| Over 50 years | 1,200 milligrams (<i>Tang, 2007 [M]</i>) |
| Maximum limit | 2,500 milligrams |

However, for people with established osteoporosis, glucocorticoid therapy, pregnant or nursing women, or persons over the age of 65, it may be more appropriate to recommend 1,500 milligrams (*Institute of Medicine, 1997 [R]*).

Both low fractional calcium absorption and low dietary calcium intake have been associated with increased fracture risk. Since fractional calcium absorption is affected by multiple factors and decreases with age, adequate lifetime dietary calcium is an important recommendation for bone health (*NIH Consensus Development Panel on Osteoporosis Prevention, Diagnosis, and Therapy, 2001 [R]*; *Weaver, 2000 [R]*).

Algorithm Annotations

Adequate vitamin D intake supports absorption and bone metabolism. Since sunlight exposure cannot be assumed to produce needed vitamin D, dietary sources are essential. Many adults are deficient in vitamin D, and supplements are often needed to meet daily requirements.

Related guidelines

ICSI Diagnosis and Treatment of Osteoporosis guideline.

Clinical Breast Exam Screening (Level III)

Service

Clinical breast exam screening could be performed during an office visit.

Efficacy

Evidence is insufficient to recommend for or against routine clinical breast exam alone to screen for breast cancer (*Humphrey, 2002 [M]*).

Related guidelines

ICSI Diagnosis of Breast Disease guideline.

Dementia Routine Screening (Level III)

Service

Providers could perform screening for dementia.

Efficacy

Evidence is insufficient at this time to support whether routine testing for dementia in the older adult population is beneficial in primary care settings.

Alzheimer's and vascular disease are the two most common causes of dementia. Loss of cognitive function from dementia does pose a large burden of suffering on patients and their families who care for them, and estimated annual costs are \$100 billion dollars annually in the U.S. There are screening tools available for dementia, such as the MMSE (Mini Mental Status Exam). While these tests have good sensitivity, they only have fair specificity. Accuracy is limited by age, ethnicity and education level.

Early detection and treatment do not appear to have a significant impact on the course of the disease, which is slowly progressive. Drug therapy is available, but results are mixed, and show at best, small benefits. Although the burden of illness is great, the work group notes the lack of screening tests with good predictive value, and available treatment does not show significant beneficial results (*Boustani, 2003 [M]*).

Domestic Violence and Abuse Screening and Counseling (Level III)

Service

Screening and counseling for domestic violence and abuse could be performed. No single tool has been identified as the gold standard for screening of domestic violence or abuse (*Basile, 2007 [R]*). It may be necessary to tailor domestic violence messages when providing care to various ethnic and racial groups in the area.

An example of two questions that are commonly used in assessments are:

- Does your partner put you down or try to control what you can do?
- In the past year have you ever been hit, pushed, restrained or choked during an argument?

Algorithm Annotations

Efficacy

Insufficient evidence exists to recommend for or against the routine screening for parents or guardians for the physical abuse or neglect of children, women for intimate partner violence or older adults or their caregivers for elder abuse (*Nelson, 2004 [M]*).

Very little data exists for the prevention of elder abuse. The AMA guidelines suggest that physicians play an active role in the assessment, intervention and prevention of elder abuse. Doctors are asked to incorporate into their daily practices routine screening questions related to this abuse. Doctors are asked to provide support to overburdened caregivers, e.g., suggest home-care services, caregiver support groups and respite care (*Aravanis, 1993 [R]*).

Clinicians should also be alert for symptoms and signs of drug abuse and dependence, various presentations of family violence, and suicidal ideation in persons with established risk factors. Studies show that patients favor inquiries about abuse. Methods used to screen for domestic violence can include self-administered questionnaire, medical staff interview and physician interview. There is some evidence that self-administered questionnaires are as effective as medical or physician interviews (*Chen, 2007 [A]*; *Macmillan, 2006 [A]*).

Counseling messages

- Discuss awareness of potential violence in dating and relationships, emphasizing the need to set boundaries and clearly communicate them to others.
- Discuss ways to stop potentially violent arguments.
- Discuss sexual orientation and associated potential risk of violence exposure.
- Discuss the fact that experiencing anger and conflict is normal.
- Discuss the fact that dealing with conflict violently is a learned behavior that has dire consequences. Violent behavior can also be unlearned. Reinforce nonviolent discipline and conflict resolution. Reinforce the fact that no person should fear violence or abuse in any relationship.
- Discuss safe storage of firearms when appropriate.
- Ask about weapons in the home and how they stored.
- Suggest home-care services, caregiver support groups or respite care for those caring for the elderly.

Drug Abuse Screening and Counseling (Level III)

Service

Although there is insufficient evidence that screening and referral are effective, individual clinicians could choose to ask about it in individual situations, since it is clearly a very high-risk behavior that complicates care of most other medical problems.

Efficacy

In 2008, the U.S. Preventive Services Task Force said, "The current evidence is insufficient to assess the balance of benefits and harms of screening adolescents, adults, and pregnant women for illicit drug use. While standardized questionnaires to screen adolescents and adults for drug use/misuse have been shown to be valid and reliable, there is insufficient evidence to assess the clinical utility of these instruments when applied widely in primary care settings" (*Polen, 2008 [M]*).

Counseling messages

There is no evidence-based information, but it is unlikely that simple counseling messages will suffice, so when individuals with problems due to their drug use are found, the primary aim here should be to refer patients with this problem to specialized treatment programs. The U.S. Preventive Services Task Force did find "there is good evidence that various treatments are effective in reducing illicit drug use in the short term." Attention also needs to be directed to increasing the likelihood of such a referral being followed through.

See Appendix B, "Alcohol Use Disorders Identification Test (AUDIT) Structure Interview."

Injury Prevention Screening and Counseling (Level III)

Service

Providers could ask about the following:

- Helmet use when riding a bicycle.
- Falling in the past year (adults older than age 65 annually). If fall(s) are reported, perform a simple gait and balance assessment (such as the "Get Up and Go Test"). For patients with more than one fall in the past year or an abnormal gait and balance test, consider a multifactorial assessment of falls to guide targeted interventions.
- Smoke detector use, cigarette smoking and fire prevention in the home.
- Seat belt use, avoiding driving while under the influence, and avoiding riding as a passenger with a driver under the influence.

Efficacy

Bicycle safety

There are few controlled studies examining the efficacy of safety helmets in preventing head injuries while riding bicycles, but data from a case-control study provide evidence that the risk of head injury among bicyclists is reduced as much as 80% (*Thompson, 1989 [C]*). The second intervention, counseling bicyclists to avoid riding near motor vehicle traffic, is based on evidence that nearly 95% of bicycle fatalities occur as a result of a collision with a motor vehicle.

Families that recalled being counseled about wearing helmets while biking reported 44% compliance, compared to 19% helmet use by families that did not receive counseling (*Quinlan, 1998 [D]*).

Fall prevention

Falls are a serious problem in the elderly. Compared to younger populations, older persons have both an elevated incidence of falls and a higher susceptibility to injury. More than one third of persons 65 years of age or older fall each year, and in half the cases the falls are recurrent. In 5%-10% of falls, serious injury occurs such as hip fracture, other fracture, subdural hematoma, serious soft-tissue injury and head injury (*Tinetti, 2003 [R]*). Beyond the acute injury of a fall, there are long-term consequences such as disability, fear of falling, and loss of independence (*Gates, 2008 [M]*). Unintentional injury is the fifth leading cause of death in older adults, and fall injuries account for 2/3 of these deaths (*American Geriatrics Society, British Geriatrics Society, American Academy of Orthopaedic Surgeons Panel on Falls Prevention, 2001 [R]*).

Efficacy of identifying high-risk older adults has been well established (*Tinetti, 2003 [R]*). Indicators of higher risk for future falls includes past history of falls, clinically detected abnormalities of gait or balance, use of four or more medications, use of psychotropic medications, acute illness, recent hospitalization, impaired cognition, vision impairment and others.

Algorithm Annotations

Simple and fast clinical screening tests, such as the "Get Up and Go Test," for evaluating gait and balance have been validated. In this test, "The patient is observed and timed while he rises from an arm chair, walks 3 meters, turns, walks back, and sits down again."

Efficacy of multifactorial fall assessment of patients followed by targeted interventions to prevent falls and injury has not been established. Currently there is insufficient evidence to recommend for or against this intervention. Prior meta-analysis have suggested a benefit of this strategy (*Chang, 2004 [M]*; *Gillespie, 2008 [M]*) with reduced fall rates of 27%-40%. But the most recent review of this type concluded, "Evidence that multifactorial fall preventions programmes ... are effective in reducing the number of fallers or fall-related injuries is limited" (*Gates, 2008 [M]*).

The 2001 "Guideline for the Prevention of Falls in Older Persons" is a joint guideline of the American Geriatrics Society, British Geriatrics Society and American Academy of Orthopaedic Surgeons. It is essentially the same as the ICSI recommendation. The U.S. Preventive Services Task Force is reviewing this topic but currently does not have a recommendation.

Fire prevention

Several studies have shown that counseling patients to install smoke detectors has been successful (*Bass, 1993*). However, smoke detectors often fail to operate due to incorrect installation or inadequate testing, and some occupants may be unable to hear or respond to the alarm signal. For these reasons, it is important that smoke alarm counseling emphasize the importance of correct installation and biannual testing to ensure proper operation. Evidence is lacking regarding frequency of smoke detector testing, but the work group feels biannual testing is prudent.

Motor vehicle safety

Injuries are the fifth leading cause of death in the U.S. and the leading cause of death in persons under the age of 45. Motor vehicle injuries account for about half of these deaths. Motor vehicle injuries are the leading cause of death in persons aged 3-33 (*Williams, 2007 [M]*).

Approximately 87.8% of Minnesotans use seat belts (*Minnesota Office of Traffic Safety, 2007 [R]*). Use of occupant protection systems has been shown to reduce the risk of motor vehicle injury by about 40% to 50%. It has been estimated that the proper use of lap and shoulder belts can decrease the risk of moderate to serious injury to front seat occupants by 45%-55% and can reduce crash mortality by 40% -50%. Alcohol is involved in about 40% of fatal motor vehicle crashes. The proportion of fatally injured drivers having illegally high blood alcohol concentrations is highest for those aged 21-24 (*Williams, 2007 [M]*).

There is generally little information from clinical studies on the ability of physicians to influence patients to refrain from driving while intoxicated or to use safety belts. Many studies have shown short-term improvements that are not sustained over time. Recommendations urging physicians to counsel patients to use occupant restraints have been issued by a number of organizations. Since motor vehicle injury represents one of the leading causes of death in the U.S. and years of potential life lost, interventions of even modest effectiveness are likely to have enormous public health implications (*Williams, 2007 [M]*).

See also Appendix C, "Injury Prevention Counseling Messages."

Related guidelines

ICSI Health Care Protocol: Prevention of Falls (Acute Care)

Menopause and Hormone Therapy Counseling (Level III)

Providers could consider initiating a discussion about midlife health issues and menopause as part of routine health maintenance visits with all women 40 years of age or older.

Algorithm Annotations

Inquire about various menopausal symptoms, including hot flashes and night sweats, vaginal dryness, sleep disturbances, mood and anxiety disturbances, concentration difficulties and forgetfulness, decreased libido and sexual dysfunction. Some women may not realize that these symptoms may be related to menopause or may be reluctant to volunteer information about them.

Efficacy

Although widely recommended up until relatively recently, the guideline emphasizes that, in current clinical practice, hormone therapy is now seldom initiated solely for the prevention of chronic disease. Neither the known or postulated benefits of long-term hormone therapy for prevention can be proven to outweigh the potential risks associated with its use.

Counseling messages

Periodically reevaluate women on hormone therapy to determine if it is still indicated, particularly if there have been changes in their health status.

Women who have recently discontinued hormone therapy are at risk for rapid bone loss. They must be identified and monitored appropriately to ensure continued bone health.

There are many effective options to be considered for the relief of menopausal symptoms; although hormone therapy is often the most effective treatment, it is not always necessary.

A variety of herbal preparations and dietary supplements is marketed and used by patients as natural alternatives to hormone therapy. These products may contain biologically active ingredients with significant physiologic effects and potential medication interactions. However, unless specifically asked, patients often do not volunteer information about their use.

Related guidelines

ICSI Menopause and Hormone Therapy (HT): Collaborative Decision-Making and Management guideline.

Preconception Counseling (Level III)

Service

Preconception counseling could be performed during a visit; however, due to time constraints during a routine health maintenance visit, it may be practical to provide comprehensive preconception counseling during a separate preconception counseling visit.

Efficacy

The evidence is insufficient to recommend for or against comprehensive preconception counseling.

Counseling messages

- 18 years-menopause**
- Inform all women of childbearing age of the deleterious effects of teratogens in early pregnancy, often before the pregnancy is diagnosed.
 - Encourage women who are seeking to become pregnant to schedule a preconception counseling visit.
 - Encourage all women of reproductive age to be on folic acid supplementation 800 micrograms per day.
 - Confirm varicella immunity and immunize if not immune.

Related guidelines

ICSI Routine Prenatal Care guideline.

Pregnancy Prevention Counseling (Level III)

Service

Preventive counseling could be given at preventive care visits throughout the reproductive years. These visits could include education and counseling regarding contraception and unintended pregnancy. Other messages could also be given as indicated (e.g., prevention and symptoms of sexual transmitted infections, association between sexual activity and use of drugs, preconception counseling).

Efficacy

There is insufficient evidence to support counseling for preventing pregnancy. The unintended pregnancy rate is unknown, but many reproductive age women are sexually active without use of birth control though they don't desire a pregnancy. The national abortion rate is 19% (*Jones, 2008 [D]*). Contraception can help avoid unintended pregnancies.

Counseling messages

- Obtain a sexual history from all women.
- Inform women that abstinence is the most effective way to prevent pregnancy and sexually transmitted infections.
- Provide detailed education and written information regarding all contraceptive methods including barrier contraceptives, birth control pills, injectibles, implantables, tubal sterilization and vasectomy. Longer-duration methods may improve compliance and efficacy.
- To enhance acceptance of contraceptive methods, health benefits should be discussed:
 - Use of oral contraceptives will reduce lifetime risks of ovarian and uterine cancer.
 - Use of barrier contraceptives and spermicides will reduce the risk of developing cervical cancer and sexually transmitted infections.

Prostate Specific Antigen (PSA) Screening and Digital Rectal Exam (DRE) of the Prostate (Level III)

Service

PSA screening and digital rectal exam of the prostate could be performed in men younger than 75 years of age.

Efficacy

While there is good evidence that PSA screening can detect early stage prostate cancer, the evidence is mixed or inconclusive as to whether early detection improves health outcomes. It should be noted, as well, that screening is associated with important potential harms to include frequent false-positive rates leading to undue anxiety and unnecessary biopsies, and potential complications of treatment of some cancers that may not have affected the patient's health. The work group concurs with the U.S. Preventive Services Task Force, and recommends that clinicians discuss the potential harms and benefits of PSA/DRE screening with patients younger than 75 years of age, after which the patient and provider can come to a mutually acceptable agreement on whether or not to screen (*Chan, 2003 [C]; Concato, 2006 [C]; Sirovich, 2003 [D]*). The U.S. Preventive Services Task Force recommends against screening in men age 75 and older (*U.S. Preventive Services Task Force, 2008 [R]*).

Sexually Transmitted Infection Counseling (Level III)

Please note that this guideline discusses primary prevention of sexually transmitted infections through the adoption of safer sexual practices. It does not address patient education messages after an sexually transmitted infection is diagnosed.

Service

Counseling regarding sexual behaviors to prevent sexually transmitted infections could be done.

Efficacy

There is good evidence that behavioral counseling involving multiple visit interventions is effective in reducing the incidence of sexually transmitted infections for higher risk adults. There is insufficient evidence to show efficacy for less intense interventions and low risk patients (*Lin, 2008b [M]*).

Burden of suffering

Sexually transmitted infections continue to increase in incidence resulting in significant morbidity and health care costs in the United States. According to the 2007 Sexually Transmitted Diseases Surveillance by the Centers for Disease Control and Prevention, there are an estimated 19 million new sexually transmitted infections each year, with almost half of those in individuals between the ages of 15 and 24.

Counseling messages

Empathy, confidentiality and a nonjudgmental, supportive attitude are important when discussing issues of sexuality. Messages should be delivered both verbally and in the form of educational materials. Clinicians can play an important role by reinforcing and clarifying educational messages, providing literature and community resource references and dispelling misconceptions about unproven modes of transmission.

Some messages might include:

- Abstinence is the most effective means to decrease sexually transmitted infection risk, and there is increased risk of contracting STIs associated with multiple partners.
- A mutually monogamous relationship with a partner known not to be infected is effective in decreasing sexually transmitted infection risk.
- Encourage safer sexual practices, including regular use of latex condoms. Even under optimal conditions, however, condoms are not always efficacious in preventing transmission.
- Avoid sexual contact with high-risk partners (e.g., intravenous drug users, commercial sex workers, and persons with numerous sexual partners).
- Emphasize that alcohol/drug use is associated with high-risk sexual behavior.
- Inform women at risk that female barrier contraceptive methods (e.g., diaphragm or cervical cap) can reduce the risk of sexually transmitted infections.

Sexually Transmitted Infection Screening (Other than Chlamydia) (Level III)

Service

Screening for sexually transmitted infections other than chlamydia could be performed.

The Centers for Disease Control revised their recommendation for HIV screening, recommending patients 13 to 64 years in all health care settings be screened after informing the patient that testing will be performed unless the patient declines (*Centers for Disease Control and Prevention, 2006 [R]*).

Algorithm Annotations

The work group reviewed the evidence and because of a continuing lack of trials of the benefits of screening average-risk patients, consensus is to retain HIV screening as a Level III service at this time.

Efficacy

There is insufficient evidence to recommend universal screening of average-risk persons for HIV (*Chou, 2005 [M]*) gonorrhea (*Glass, 2005 [M]; Potterat, 1987 [C]*).

Benefits versus harms are unknown for genital herpes simplex and syphilis but with the increasing prevalence of these infections, work group consensus is to also place these as Level III services.

Skin Cancer Screening and Counseling (Level III)

Service

Screening and counseling to prevent skin cancer could be performed.

Efficacy

There is insufficient evidence to recommend for or against routine screening for skin cancer in the primary care setting. Evidence is lacking on reduction of morbidity and mortality for whole body examination by a primary care provider, and accuracy of screening is limited and inconsistent (*Wolff, 2009a [M]*). Evidence-based reviews do not show sufficient evidence that physician counseling prevents skin cancer. The use of sunscreen may show modest benefit in preventing squamous cell cancer noted in one trial. However, another trial showed sunscreen was associated with a higher incidence of sunburn as users may not apply correctly and have a false sense of security about the degree of protection. There is evidence that some community-based interventions show the most effectiveness in reducing sun exposure (*Helmand, 2003 [M]*).

Burden of suffering

Skin cancer is the most common type of cancer in the U.S., and sun exposure is a known strong risk factor for skin cancer. Excess sun exposure, including intermittent sunburn in childhood, should be a preventable risk factor.

Counseling messages

Although there is not sufficient evidence to recommend routine total body exams, it is prudent for clinicians to examine the skin when the opportunity arises during a physical examination.

While the effectiveness of counseling has not been established, the U.S. Preventive Services Task Force has recommended counseling patients at increased risk for skin cancer to avoid excess sun exposure.

The recommended counseling messages include:

- Avoidance of sun between the hours of 10 a.m. and 4 p.m.
- Use of protective clothing when outdoors
- Use of sunscreen that blocks both UVA and UVB
- Avoidance of sunlamps and tanning equipment
- Practice of skin self-examination

TSH/Thyroxine (for Hypothyroidism Screening) (Level III)

Screening for hypothyroidism via TSH/Thyroxine could be performed. At this time, there is insufficient evidence to recommend universal screening for thyroid disease in asymptomatic individuals. Thyroid disease prevalence is higher in women and persons with Down syndrome, and increases with age. Clinicians should remain alert to subtle symptoms and signs of thyroid dysfunction in this population (*Helmand, 1996 [M]*).

5. Preventive Services That Are Not Supported by Evidence and Not Recommended (Level IV)

Level IV services are those with low predictive value and/or uncertain beneficial action for true positives. They may also be a combination of insufficient evidence, potential for harm in treatment, no defined benefit and/or overuse.

CA 125 and Ultrasound (for Ovarian Cancer Screening) (Level IV)

Service

This guideline recommends against screening of asymptomatic women for ovarian cancer. It is common practice to perform a pelvic examination when performing gynecologic examinations for other reasons.

Efficacy

Multiple analyses of the evidence, including a recent NIH consensus panel, have concluded that there is no evidence that even combining these tests will effectively reduce mortality and morbidity. The recommendation to consider discontinuing screening is based on this information plus the physical, psychological and financial harm caused by frequent false-positives resulting in unnecessary surgery. Although pelvic examinations are also of uncertain value for this condition, they have other benefits and are not included in this recommendation (*Grimes, 1993 [R]; Schapira, 1993 [M]*).

Coronary Heart Disease Routine Testing (Level IV)

Service

This guideline recommends against routine screening with resting electrocardiogram (ECG), exercise treadmill test (ETT) or electron-beam computerized tomography (EBCT) scanning for coronary artery calcium in adults at low risk for CHD events.

Efficacy

The use of ECG, ETT or EBCT for screening of low-risk asymptomatic adults for coronary artery disease can lead to false-positive tests, producing expense and physical/psychological damage without evidence of benefit. While these tests may detect a small number of individuals at increased risk of coronary heart disease or with coronary artery stenosis, there is not evidence that this detection for low-risk adults ultimately improves outcomes (*Fowler-Brown, 2004 [M]*). The use of these tests for screening in adults at increased risk for coronary heart disease events continues to be reviewed and currently shows insufficient evidence to recommend for or against screening in this population and is out of the scope of this guideline.

Diabetes Routine Screening (Level IV)

Service

This guideline recommends against screening asymptomatic patients who are at low risk for diabetes. For more information on risk assessment, see the ICSI Diagnosis and Management of Type 2 Diabetes Mellitus in Adults guideline.

Efficacy

There continues to be no evidence on harms and benefits for patients with diabetes that was identified from a screening program. According to a 2008 evidence review for the U.S. Preventive Services Task Force (updating their 2003 statement), there have been no randomized controlled trials of the effects of screening asymptomatic people for type 2 diabetes mellitus (*Norris, 2008 [M]*). They also found that "no study directly compared treatment effects between screen-detected and clinically-detected diabetic persons, nor have studies to date reported treatment effects in a screen-detected cohort with diabetes." Therefore, the

Algorithm Annotations

U.S. Preventive Services Task Force continued to give diabetes screening an I rating for insufficient evidence (*U.S. Preventive Services Task Force, 2008 [R]*). With this recommendation, they also modified their 2003 statement recommending screening low-risk asymptomatic adults with hypertension or hyperlipidemia by dropping the recommended screen for hyperlipidemia and making their hypertensive recommendation specific to "sustained blood pressure greater than 135/80." However, since this guideline is only for people with no special risk factors, this is not a recommendation we can act on. There may be patients with high risks, and this should be based on a risk assessment. See the ICSI Diagnosis and Management of Type 2 Diabetes Mellitus in Adults guideline.

The 2008 U.S. Preventive Services Task Force statement noted that screening tests accurately detect type 2 diabetes, and short-term harms appear small, but the longer-term effects are unknown. This statement came out within days of the publication of the ACCORD and ADVANCE trials of intensive treatment for type 2 diabetes, which raised serious questions about the harms of specific strategies chosen to reduce glycated hemoglobin levels intensively to levels under 7.0% (*The Action to Control Cardiovascular Risk in Diabetes Study Group, 2008 [A]*; *The ADVANCE Collaborative Group, 2008 [R]*; *Dluhy, 2008 [R]*). The potential that screened patients might be subject to intensive therapy increases the theoretical risk for such patients. Finally, there is already considerable pressure on clinicians to treat diabetes intensively and on patients to be tested for diabetes, so a guideline that recommended screening in the absence of evidence would only further increase the likelihood of random screening and the risk of potential harm.

Related guidelines

ICSI Diagnosis and Management of Type 2 Diabetes Mellitus in Adults guideline.

Lab Testing (Routine) (Level IV)

Service

This guideline recommends against blood chemistry panels, hemoglobin/hematocrit screening, urinalysis and other routine lab testing without suspected clinical grounds.

Efficacy

Most evaluations of benefit have concluded that in a well population, multiple chemical tests find few unsuspected conditions and create considerable worry, as well as subsequent diagnosis testing with its own costs and hazards. These tests are often grouped in a 6 to 18 test group or panel and collected without any indication in hopes of identifying diseases on unsuspected clinical grounds. Such screening may be useful for patients suspected of having a serious illness, but even for those patients, the selection of specific tests is usually more efficacious (*Berwick, 1985 [R]*; *Romm, 1986 [D]*). In general, the predictive value and potential benefits of routine urinalysis are uncertain, and the risk of harm and costs from further evaluation of abnormalities are such that this test should not be done without some clinical indication (*Rüttimann, 1994 [B]*).

Based on work group consensus, the guideline also recommends against the performance of hemoglobin/hematocrit for anemia screening for all adults without clinical indications. The burden of suffering and the low benefits of detection of anemia in the presymptomatic phase in a low-risk population without clinical indications do not warrant the cost of routine testing. (This argument does not apply to infants and pregnant women.)

Spirometry (for Chronic Obstructive Pulmonary Disease [COPD] Screening) (Level IV)

Service

This guideline recommends against spirometry for healthy adults who do not present with any respiratory symptoms to screen for Chronic Obstructive Pulmonary Disease (*Lin, 2008a [M]*).

Efficacy

The U.S. Preventive Services Task Force concluded there is no direct evidence to improve long-term health outcomes. Lin, et al. concluded there is no evidence for clinically significant adverse effects of spirometry, but a baseline percentage of false-positives was suggested from their data review.

Stroke Screening (Level IV)

Service

This guideline recommends against routine screening for asymptomatic carotid artery stenosis in the general adult population.

Efficacy

The actual stroke reduction from screening asymptomatic patients and treatment with carotid endarterectomy is unknown. Even in the best surgical care, the potential of harm may outweigh the benefit. Treatment of carotid artery stenosis in selected patients by selected surgeons could lead to an approximately 5% absolute reduction in strokes over five years. Thirty-day stroke and death rates from carotid endarterectomy vary from 2.7% to 4.7% in randomized control trials; higher rates have been reported in observational studies (up to 6.7%) (Wolff, 2007 [R]). The benefit is limited by a low overall prevalence of treatable disease in the general asymptomatic population and harms from treatment.

6. Care Coordination

Although some individuals, following health risk assessments and screening tests, will initiate and sustain lifestyle changes on their own, most will require some degree of structured feedback and follow-up to achieve even modest improvements. Patient-centered health care systems should implement evidence-based changes to ensure consistent follow-up of conditions and risk factors, and support for healthier lifestyles.

Timely feedback

- Clear, strong personal message
- Include documentation of "lifestyle vital signs"

Appropriate interventions

- Integrate into clinical decision support to assist the care team with knowledge of evidence-based preventive services to offer at a given time.
- Decision aids can help patients increase knowledge and collaborate with choices and options.
- If screening and/or counseling results warrant treatment, see treatment guidelines.

Optimal follow-up

- Plan for and anticipate upcoming preventive service needs. Electronic systems may be particularly beneficial for advanced ordering of services.
- Providing preventive screening and counseling services.
- If screening and/or counseling results warrant additional follow-up, proceed as indicated. See also treatment guidelines as noted in the specific topic sections.

Appendix A – Counseling Messages

Behavioral counseling interventions in clinical settings are a potential important means of addressing prevalent health-related behaviors – such as lack of physical activity, poor diet, substance (tobacco, alcohol and illicit drug) use and dependence, and risky sexual behavior – that underlie a substantial proportion of preventable morbidity and mortality in the United States (*Whitlock, 2002 [R]*).

Appropriate Counseling Approaches

The work group recommends that implementation of the preventive services guideline be tied to a system to perform risk assessment of patients, so that counseling can be individualized to a patient's risks and needs.

WHO is to Counsel and Educate

Counseling and educational messages are to be provided by the primary care clinician, nurse or other health professional or educator. About 80% of the population identifies a health care provider as a source of care. Thus, physicians have special opportunity to take advantage of teachable moments to provide health advice. Given physician's time constraints, they may be limited to stressing the need to meet with another health care professional for more detailed information.

HOW to Effectively Deliver Messages

A wide variety of counseling and education messages is recommended for various reasons. The recommendation is to spread the messages across several visits when possible so as not to overwhelm the patient or the provider. Delivering them all in one visit or setting may be overwhelming; therefore, it is desirable to spread out the messages across several visits whenever possible.

Multiple factors and perceptions may be associated with a patient's readiness to change. Communicating in a direct manner and making clear recommendations are encouraged. Recognition of health risks and physician's concerns may heighten the patient's awareness.

- For the patient considering change, assess perception of the importance and build on this in a nonjudgmental way. "How important is it for you to..." or "How confident are you that you can..." may help assess motivation and strategies for further counseling.
- For the patient who doesn't perceive there is a problem or isn't ready to change, provide new information or indicate a willingness to help when they are ready.

Another goal is to communicate that the patient can contact the provider and other health care professionals for resources whenever he or she is interested in more information.

The Five A's

The U.S. Preventive Services Task Force Counseling and Behavioral Interventions Work Group has recommended a construct known as the "five A's" as a way to structure health behavior interventions in the health care setting.

- **Assess:** Ask about/assess behavioral health risk(s) and factors affecting choice of behavior change goals/methods.
- **Advise:** Give clear, specific and personalized behavior change advice, including information about personal health harms/benefits.
- **Agree:** Collaboratively select appropriate treatment goals and methods based on the patient's interest in and willingness to change the behavior.

Appendix A – Counseling Messages

- **Assist:** Using behavior change techniques (self-help and/or counseling), aid the patient in achieving agreed-upon goals by acquiring the skills, confidence and social/environmental supports for behavior change, supplemented with adjunctive medical treatments when appropriate (e.g., pharmacotherapy for tobacco dependence, contraceptive drugs/devices).
- **Arrange:** Schedule follow-up contacts (in person or by telephone) to provide ongoing assistance/support and to adjust the treatment plan as needed, including referral to more intensive or specialized treatment.

(Whitlock, 2002 [R])

Appendix B – Alcohol Use Disorders Identification Test (AUDIT) Structured Interview

| Question | Score | | | | |
|---|--------|--|-----------------|--------------------------------------|---------------------------|
| | 0 | 1 | 2 | 3 | 4 |
| How often do you have a drink containing alcohol? | Never | Monthly or less | 2-4 times/month | 2-3 times/week | 4 or more times/week |
| How many drinks containing alcohol do you have on a typical day when you are drinking? | 1 or 2 | 3 or 4 | 5 or 6 | 7-9 | 10 or more |
| How often do you have six or more drinks on one occasion? | Never | Less than monthly | Monthly | Two to three times per week | Four or more times a week |
| How often during the last year have you found that you were unable to stop drinking once you had started? | Never | Less than monthly | Monthly | Two to three times per week | Four or more times a week |
| How often during the last year have you failed to do what was normally expected from you because of drinking? | Never | Less than monthly | Monthly | Two to three times per week | Four or more times a week |
| How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session? | Never | Less than monthly | Monthly | Two to three times per week | Four or more times a week |
| How often during the last year have you had a feeling of guilt or remorse after drinking? | Never | Less than monthly | Monthly | Two to three times per week | Four or more times a week |
| How often during the last year have you been unable to remember what happened the night before because you had been drinking? | Never | Less than monthly | Monthly | Two to three times per week | Four or more times a week |
| Have you or someone else been injured as a result of your drinking? | Never | Yes, but not in the last year (2 points) | | Yes, during the last year (4 points) | |
| Has a relative or friend, doctor, or other health worker been concerned about your drinking or suggested you cut down? | Never | Yes, but not in the last year (2 points) | | Yes, during the last year (4 points) | |

*The minimum score (for non-drinkers) is 0 and the maximum score is 40. A score of 8 or more indicates a strong likelihood of a hazardous or harmful alcohol consumption.

Reprinted with permission from Saunders JB, Aasland OG, Babor TF, de la Fuente JR and Grant M. Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption II. *Addiction* 1993; 88: 791-804.

Appendix C – Injury Prevention Counseling Messages

Most injury prevention measures lack sufficient evidence on the effectiveness of counseling for adults to recommend providing counseling. However, screening and brief counseling for problem drinking (Level I) have been shown to reduce hazardous drinking and are likely to reduce alcohol-related injuries. Similarly, screening and brief intervention to promote tobacco cessation (Level I) are likely to reduce cigarette-related fire injuries.

Bicycle Safety

- Reinforce always wearing an approved safety helmet when riding a bicycle.
- To enhance safety, follow safety rules (look carefully for traffic, signal turns, etc.), avoid riding in heavy motor vehicle traffic, wear light-colored and reflective clothing, and install a light on your bicycle.

Fire Prevention

- Install smoke detectors and test them biannually.
- Discuss the use of "911" for fire emergencies.
- Cigarettes used by adults are the leading cause of ignition in fatal house fires; avoid smoking near bedding or upholstery.
- Discuss the fact that residential fires occur more frequently in the winter due to the use of portable heaters, fireplaces and Christmas trees.
- Matches, lighters and smoking materials should be handled safely and shouldn't be available to children. They also present a high risk for the elderly.
- Discuss the importance of a family fire escape plan with a predesignated meeting location outside of home.

Motor Vehicle Safety

- Discuss always wearing a safety belt when driving or riding in a car (Minnesota Statute 169.686).
- Do not drive or ride in a motor vehicle when the driver is under the influence of alcohol or drugs.

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Brief Description of Evidence Grading

Individual research reports are assigned a letter indicating the class of report based on design type: A, B, C, D, M, R, X.

A full explanation of these designators is found in the Foreword of the guideline.

II. CONCLUSION GRADES

Key conclusions (as determined by the work group) are supported by a conclusion grading worksheet that summarizes the important studies pertaining to the conclusion. Individual studies are classed according to the system defined in the Foreword and are assigned a designator of +, -, or \emptyset to reflect the study quality. Conclusion grades are determined by the work group based on the following definitions:

Grade I: The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.

Grade II: The evidence consists of results from studies of strong design for answering the question addressed, but there is some uncertainty attached to the conclusion because of inconsistencies among the results from the studies or because of minor doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.

Grade III: The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results from different studies or because of serious doubts about generalizability, bias, research design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.

Grade Not Assignable: There is no evidence available that directly supports or refutes the conclusion.

The symbols +, -, \emptyset , and N/A found on the conclusion grading worksheets are used to designate the quality of the primary research reports and systematic reviews:

+ indicates that the report or review has clearly addressed issues of inclusion/exclusion, bias, generalizability, and data collection and analysis;

- indicates that these issues have not been adequately addressed;

\emptyset indicates that the report or review is neither exceptionally strong or exceptionally weak;

N/A indicates that the report is not a primary reference or a systematic review and therefore the quality has not been assessed.

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Conclusion Grading Worksheet A – Annotation #2 (Breast Cancer Screening Mammography)

Work Group's Conclusion:

Screening mammogram must be performed every one-two years for women age 50-75 years.

Conclusion Grade: I

Work Group's Conclusion:

Screening mammograms could be offered to women ages 40-49 and over the age of 75. This decision should be made in the context of discussing potential benefits and harms based on patient age, values, concerns and circumstances.

Conclusion Grade: III

| Author/ Year | Design Type | Class | Qual- ity +,-,0 | Population Studied/Sampl e Size | Primary Outcome Measure(s)/Results (e.g., p- value, confidence interval, relative risk, odds ratio, likelihood ratio, number needed to treat) | Authors' Conclusions/ <i>Work Group's Comments (italicized)</i> |
|--|--------------------------|-------|-----------------------|--|---|---|
| Norman et al, 2007 The CARE Study | Case control study | C | - | Cases were 553 women with a new diagnosis of invasive breast cancer in 1994-1998 and subsequently died. Controls were 4016 women identified by random digit dialing who had never been diagnosed with cancer. | The primary objective of this study was to determine the association of breast cancer screening with breast cancer mortality in a sample of black and white women. Compared to controls, cases who were exposed to any breast cancer screening in the past two years of the reference date had 37% lower odds of breast cancer mortality (OR 0.63, 95% CI 0.50-0.78) and 32% lower odds of all-cause mortality (OR 0.68, 95% CI 0.55-0.83) within 5 years of follow-up. After stratifications by age and menopausal status separately, this association was no longer significant in 40 to 49- year-old or premenopausal women (OR 0.89, 95% CI 0.65-1.23 and OR 0.74, 95% CI 0.53-1.04, respectively). However, among 50 to 64-year-old breast cancer screening was associated with an odds ratio of 0.47 (0.35-0.63) and postmenopausal status was associated with an odds ratio of 0.45 (.33-0.62). These relationships persisted 3, 4, 5, 6 and 7 years after mammography screening. | The authors of this study suggest a benefit of mammography in reducing the odds of death from breast cancer in women ages 40-64, with a greater benefit of screening in older, postmenopausal women. The overall findings are consistent with previous case control studies. However, the findings from case control studies have found a greater benefit of screening compared to randomized trials. The authors suggest that this is because of intention to treat analyses (rather than efficacy analyses) and that the case control studies are more representative of the true benefit of screening. <i>[Note: the authors may be overstating their findings for the 40-49 years and pre- menopausal groups. Their conclusion that screening mammography should be recommended in this age group is based on a sensitivity analysis in which the mammogram that led to a diagnosis is not counted, thereby reducing the likelihood of a screen, and biasing their results away from the null.]</i> |

**Conclusion Grading Worksheet A – Annotation #2
Breast Cancer Screening Mammography**

| Author/ Year | Design Type | Class | Qual- ity +,-,Ø | Population Studied/Sample Size | Primary Outcome Measure(s)/Results (e.g., p- value, confidence interval, relative risk, odds ratio, likelihood ratio, number needed to treat) | Authors' Conclusions/ <i>Work Group's Comments (italicized)</i> |
|---|----------------------|-------|-----------------------|--|---|---|
| Armstrong et al, 2007 for the American College of Physicians | Systematic review | M | Ø | Medline and COCHRANE database were searched for English language publications through 2005. Search terms were mammography or breast neoplasm or cancer and mass screening. 873 full- text articles were retrieved, and 117 met the inclusion criteria. | <p>The objective of this paper was to evaluate the evidence regarding risks and benefits of mammography screening for women 40-49 years old.</p> <p>Meta-analyses of randomized controlled trials demonstrate a 7%-23% reduction in breast cancer mortality with mammography screening in women aged 40-49 years.</p> <p>Screening is associated with an increased risk of mastectomy but a decreased risk of adjuvant chemotherapy and hormone therapy.</p> <p>Risks of death associated with radiation exposure are small and outweighed by reduction in breast cancer mortality rates.</p> | <p>The authors conclude that the evidence to date indicates that women 40 to 49 who undergo routine mammography screening will reduce their risk of death due to breast cancer but will increase their risk of unnecessary procedures, breast cancer-related anxiety (waiting for results), discomfort due to procedure, and exposure to low-dose radiation. It is widely accepted that that for women 50 years and older, the benefits outweigh the risks. Women 40 to 49 who have lower-than-average risk and higher-than-average concerns about false-positive results might reasonably delay screening. However, it should be noted that there have been few randomized controlled trials assessed the risks of screening. Measuring risks and benefits accurately remains a challenge.</p> <p><i>[Note: it should be noted the authors' conclusion regarding the benefits of mammography screening in women 40 to 49 years is based on a prior meta analysis (Humphrey et al, 2002) that reported a 15% reduction in risk of breast cancer mortality (RR = 0.85, 95% CI 0.73-0.99) of clinical trials that were not intended to evaluate breast cancer screening in 40 to 49 years olds and thus did not have adequate power.]</i></p> |

**Conclusion Grading Worksheet A – Annotation #2
Breast Cancer Screening Mammography**

| Author/ Year | Design Type | Class | Qual -ity +, -, Ø | Population Studied/Sample Size | Primary Outcome Measure(s)/Results (e.g., p- value, confidence interval, relative risk, odds ratio, likelihood ratio, number needed to treat) | Authors' Conclusions/ <i>Work Group's Comments (italicized)</i> |
|--|------------------------------------|-------|-------------------------|---|--|---|
| Badgewell et al, 2008 | Cohort study using SEER data | B | + | 12,358 women ≥ 80 years diagnosed with breast cancer between 1996 and 2002 from the SEER database. | The primary objective of this study was to determine mammography use among women ≥ 80 years who had been diagnosed with breast cancer and to determine the effect of routine mammography on disease stage and survival. Multivariate analysis showed that for each mammogram obtained, the risk of presenting with late stage cancer was reduced by 63% (Odds ratio 0.37, 95% CI 0.63-0.67). 5-year survival among non-users was 82%, among irregular users was 88% and among regular users was 94%. However, survival from causes other than breast cancer was also associated with mammography, thus suggesting a bias for healthier patients to undergo mammography. | This study adds to the body of evidence suggesting that the use of regular mammography may be beneficial in older women. However, the true efficacy of screening with respect to survival remains unknown until a clinical trial of screening mammography is performed in this age group (which is unlikely). |
| Qaseem et al, 2007 for the American College of Physicians | Consensus statement | R | Ø | Review of the literature on benefits and risks of screening mammography in women aged 40 to 49 years. | The American College of Physicians set forth 4 recommendations: 1) for women ages 40 to 49 years, physicians should perform individualized assessment of risk for breast cancer to guide decisions about screening mammography. 2) physicians should inform women 40 to 49 years about potential benefits and risks of screening mammography. 3) for women 40 to 49 years, clinicians should base screening decisions on benefits and risks of screening, as well as women's preferences and breast cancer profile. 4) further research is recommended on the cumulative benefits and risks of breast cancer screening mammography in this age group. | The authors conclude that screening mammography probably modestly reduces breast cancer mortality in women 40 to 49 years. However, the reduction in this age group is smaller than that in women 50 years and older. There is uncertainty about the exact reduction in risk, as well as risk of potential harms (false positive, false negative, exposure to radiation, discomfort and anxiety). In conclusion, it is recommended that the mammography decision in the 40 to 49 age group be tailored to a given woman's concerns about mammography and breast cancer along with risk for breast cancer. |

**Conclusion Grading Worksheet A – Annotation #2
Breast Cancer Screening Mammography**

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| Author/ Year | Design Type | Class | Qual- ity +,-,Ø | Population Studied/Sample Size | Primary Outcome Measure(s)/Results (e.g., p- value, confidence interval, relative risk, odds ratio, likelihood ratio, number needed to treat) | Authors' Conclusions/ <i>Work Group's Comments (italicized)</i> |
|---|-------------------|-------|-----------------------|---|--|---|
| Humphrey et al, 2002 U.S. Preventive Services Task Force (USPSTF) | Meta- analysis | M | Ø | Meta-analysis of 8 randomized controlled trials and 2 trials evaluating breast self- examination | <p>The objective of this meta-analysis was to evaluate the effectiveness of screening mammography in reducing breast cancer mortality.</p> <p>The overall RR was 0.84 (95% CI 0.77-0.91) for women ages 40 to 74 years old over 14 years of observation. Among women younger than 50 years, the RR was 0.85 (95% CI 0.73, - 0.99).</p> <p>The authors also report the findings of 7 other meta-analyses of the effectiveness of screening mammography in 40 to 49 year olds. Six of these studies were consistent with these findings and one (Cochrane review based on 2 trials) reported a relative risk of 1.03 (95% CI 0.77-1.38).</p> | <p>The authors conclude that screening mammography years reduced mortality rates in women ages 40 to 49. However, it should be noted that these conclusions are based on meta-analyses of studies that were not intended to evaluate breast cancer screening in 40 to 49 years olds. The authors acknowledge the limitations of the studies included as well as limitations common to meta-analysis (studies used different analytic methods, some studies did not report individual level data).</p> |

This section provides resources, strategies and measurement specifications for use in closing the gap between current clinical practice and the recommendations set forth in the guideline.

The subdivisions of this section are:

- Priority Aims and Suggested Measures
 - Measurement Specifications
- Key Implementation Recommendations
- Knowledge Resources
- Resources Available

Priority Aims and Suggested Measures

1. Increase the percentage of adult patients on time with Level I preventive services.

Possible measures for accomplishing this aim:

Level I preventive services are worthy of attention at every visit.

- a. Percentage of patients with all Level I preventive services on time according to the guideline delivery schedule.
 - Percentage of adult patients with documentation in their medical record indicating alcohol abuse, hazardous and harmful drinking screening was performed.
(2009 HEDIS measure, ages 13 and older)
 - Percentage of adult patients (men ages 45-79 years when the potential benefit of a reduction in myocardial infarctions outweighs the potential harm of an increase in gastrointestinal hemorrhage, and women ages 55-79 years when the potential benefit of a reduction in ischemic strokes outweighs the potential harm of an increase in gastrointestinal hemorrhage) with documentation in their medical record indicating aspirin chemoprophylaxis counseling was provided.
 - Percentage of adult female patients ages 50-75 years with documentation in their medical record indicating breast cancer screening was performed.
(2009 HEDIS measure: ages 40-69)
(Minnesota Community Measurement: ages 50-69)
 - Percentage of female patients with documentation in their medical record indicating cervical cancer screening was performed.
(2009 HEDIS measure: ages 21-64)
(Minnesota Community Measurement: ages 18-64)
 - Percentage of sexually active women age 25 and younger, and older women at increased risk of infection with documentation in their medical record indicating chlamydia screening was performed.
(HEDIS measure: ages 16-25 and sexually active)
(Minnesota Community Measurement: ages 16-25 and sexually active)
 - Percentage of adult patients (ages 50-80) with documentation in their medical record indicating colorectal screening was performed. (See ICSI's Colorectal Cancer Screening guideline.)
(Minnesota Community Measurement: ages 50-80)
(2009 HEDIS measure: ages 50-80 to include one or more of the following screenings: fecal occult blood test [FOBT] yearly, flexible sigmoidoscopy every five years, double contrast barium enema [DCBE] every five years, colonoscopy every 10 years)
 - Percentage of adult African American patients (ages 45-80) with documentation in their medical record indicating colon cancer screening was performed. (See ICSI's Colorectal Cancer Screening guideline.)

Priority Aims and Suggested Measures

- Percentage of adult patients with blood pressure documented in their medical record (every two years if less than 120/80; every year if 120-139/80-89 Hg). (See ICSI's Hypertension guideline.)

(Minnesota Community Measurement: ages 46-85 with a diagnosis of high blood pressure who were continuously enrolled in their health plan during the measurement year and whose blood pressure was determined to be under control – less than or equal to 140/90)

- Percentage of adult patients with documentation of influenza immunization in their medical record. (See ICSI's Immunization guideline.)
- Percentage of adult patients (men over age 34, women over age 44) with documentation of lipid screening in their medical record. (See ICSI's Lipid Management in Adults guideline.)
- Percentage of adult patients with documentation of pneumococcal immunization in their medical record. (See ICSI's Immunization guideline.)
- Percentage of adult patients (tobacco users) with documentation in their medical record indicating "advise to quit" smoking was provided at the most recent visit.

(2009 HEDIS measure: Current smokers age 18 and older who were seen by a practitioner during the measurement year and a) Received advice to quit b) Cessation medications were recommended and discussed c) Cessation methods were recommended or discussed)

Measurement Specifications

Possible Success Measure #1a

Percentage of patients with all Level I preventive services on time according to the guideline delivery schedule. (See Table 1: Adult Preventive Services That Providers and Care Systems *Must* Assess the Need for and Offer to Each Patient. These have the Highest Priority Value [Level I]).

Population Definition

Medical groups may choose to specify age parameters to simplify measurement.

Data of Interest

$$\frac{\text{\# of patients on time with all Level I preventive services}}{\text{Total \# of patients who present in the clinic for a non-emergent primary care visit}}$$

Numerator/Denominator Definitions

Numerator: A patient must be on time with all applicable Level I preventive services to meet the criteria. For a service to be counted as provided, it should be documented with a date of service. If the medical record documents that the service was offered to the patient and the patient declined the test or procedure, it should be counted as a "yes" to the criteria.

Medical record documentation should indicate if the service was:

- Completed
- Offered and refused
- Not done

Denominator: Patients who present in the clinic for a non-emergent primary care visit. Some medical groups may choose to calculate a measurement on the entire clinic population.

Method/Source of Data Collection

For organizations having EMR, or a paper medical record: patients who have had an office visit of any kind within the preceding month can be randomly sampled to produce at least 20 records for review. Selected records are audited using the checklist tool (available on the ICSI Web site) to determine a patient's status on each of the preventive services listed.

Time Frame Pertaining to Data Collection

Data can be collected monthly.

Notes

While the measure is the percentage of patients with services on time, it is a better measure of the overall preventive services delivery system. It will, however, change more slowly over time and can be frustrating as an improvement measure. On-time rates by service will show improvement earlier and faster than the on-time rates by patient.

Probing Measures

Measure #1a is composed of essential component preventive services. For probing measure purposes, that measure may be further analyzed to identify the completion rate for each specific service component. This analysis would identify services for which the medical group is performing well and those services that present an opportunity for improvement. Performance results for component services may also be broken down by site or department or by age group or gender to produce information to guide improvement activities.

Other Options for Measurement

Use the same approach with the following age-appropriate preventive services delivered by the care system based on Level II services:

- Abdominal aortic aneurysm screening
- Depression screening
- Folic acid chemoprophylaxis counseling
- Hearing screening
- Hepatitis B immunization
- Herpes zoster/shingles immunization
- Human papillomavirus (HPV) immunization (females)
- Inactivated polio vaccine (IPV) immunization
- Measles, mumps, rubella (MMR) immunization
- Obesity screening
- Osteoporosis screening
- Tetanus-diphtheria immunization (Td/Tdap)
- Varicella immunization
- Vision screening

Key Implementation Recommendations

The following system changes were identified by the guideline work group as key strategies for health care systems to incorporate in support of the implementation of this guideline.

1. Prioritization and implementation of preventive services should be part of the overall system and should include the following:
 - Practice preventive services at every clinic opportunity while addressing high-priority services.
 - Individualize preventive services; regularly assess patient risk factors.
 - Provide resources around lifestyle change and available community resources.
2. Develop a plan for staff and provider education around preventive services and organizational goals for implementation of preventive services (should also include education around "level" of service and the rationale behind each level).
3. For those organizations having EMR, develop a decision support component that will generate reminders for preventive services in order to support completion of recommended Level I services.
4. For those organizations with a paper medical record, create a "tickler" system that will generate reminders for preventive services in order to support completion of recommended Level I services.
5. Develop a "catch-up" plan for those patients who are not on time with services by creating a tracking system that allows for periodic medical record audits to identify patient gaps in preventive services.
6. Develop a collaborative relationship with patients in order to activate/motivate them to practice preventive health.
7. Place throughout the facility patient education materials that focus on preventive services and the importance of each. Materials may include, but are not limited to, posters, pamphlets, videos and available Web sites, as well as services available in the community.
8. Develop a process for encouraging the elderly that it is important for them to be accompanied by a family member/caretaker at each visit.

Knowledge Products and Resources

Criteria for Selecting Resources

The following resources were selected by the Preventive Services for Adults guideline work group as additional resources for providers and/or patients. The following criteria were considered in selecting these resources.

- The site contains information specific to the topic of the guideline.
- The content is supported by evidence-based research.
- The content includes the source/author and contact information.
- The content clearly states revision dates or the date the information was published.
- The content is clear about potential biases, noting conflict of interest and/or disclaimers as appropriate.

Resources Available to ICSI Members Only

ICSI has a wide variety of knowledge resources that are *only* available to ICSI members (these are indicated with an asterisk in far left-hand column of the Resources Available table). In addition to the resources listed in the table, ICSI members have access to a broad range of materials including tool kits on CQI processes and Rapid Cycling that can be helpful. To obtain copies of these or other Knowledge Resources, go to http://www.icsi.org/improvement_resources. To access these materials on the Web site, you must be logged in as an ICSI member.

The resources in the table on the next page that are not reserved for ICSI members are available to the public free-of-charge.

Resources Available

| * | Author/Organization | Title/Description | Audience | Web Sites/Order Information |
|---|--|---|---|---|
| | Agency for Health Research and Quality | The Guide to Clinical Preventive Services: Provides the latest available recommendations on preventive interventions – screening tests, counseling, and immunizations – for more than 80 conditions. (These recommendations are made by the U.S. Preventive Services Task Force.) | Patients and Families; Health Care Professionals | http://www.ahrq.gov/clinic/prevnew.htm |
| | American Academy of Family Physicians | American Academy of Family Physicians: Professional information on clinical care research, practice management and policy. | Health Care Professionals | http://www.aafp.org |
| | American Cancer Society | American Cancer Society: A nationwide, community-based voluntary health organization that provides resources on cancer prevention. | Patients and Families; Health Care Professionals | http://www.cancer.org |
| | American Dental Association | American Dental Association: Provides fact sheets and frequently asked questions on the topic of oral health. | Patients and Families; Health Care Professionals | http://www.ada.org |
| | American Dietetic Association | American Dietetic Association: Provides food and nutrition information that is reliable and useful. Registered dietitians prepare the site. | Patients and Families; Health Care Professionals | http://www.eatright.org |
| | American Heart Association | American Heart Association: Healthy heart and stroke prevention information. | Patients and Families | http://www.americanheart.org |
| | Centers for Disease Control and Prevention | Centers for Disease Control and Prevention: Comprehensive site provides information on immunizations and CDC prevention guidelines. | Patients and Families; Health Care Professionals | http://www.cdc.gov |
| | Centers for Disease Control and Prevention | Immunization Contraindications: A guide designed to help immunization providers determine what common symptoms and conditions should contraindicate vaccination and which ones should not. It supersedes the 2000 <i>Guide to Contraindications to Childhood Vaccination</i> and, unlike that and previous guides, contains information on all licensed U.S. vaccines, not just pediatric vaccines. | Health Care Professionals | http://www.cdc.gov/vaccines/recs/vac-admin/contraindications.htm |

* Available to ICSI members only.

Resources Available

| * | Author/Organization | Title/Description | Audience | Web Sites/Order Information |
|---|---|---|---|---|
| | Centers for Disease Control and Prevention | Centers for Disease Control: The Web site gives an overview of the problem of older adult falls and how they can be prevented. In addition, the Web site provides resources/education materials and suggestions for decreasing falls in elderly patients. | Patients and Families; Health Care Professionals | http://www.cdc.gov/ncipc/duip/preventadultfalls.htm |
| | Healthfinder | Healthfinder: A to Z health information, organization, and health care topics. | Patients and Families | http://www.healthfinder.gov |
| * | ICSI | Summary Report: Tobacco Prevention and Cessation Family Health Services Minnesota (2003) | Health Care Professionals | http://www.icsi.org |
| * | ICSI | Summary Report: Preventive Services, Sustaining Improvement at Three Medical Groups (2002) | Health Care Professionals | http://www.icsi.org |
| * | ICSI | Summary Report: Primary Care Delivery System at Quello Clinic (2002) | Health Care Professionals | http://www.icsi.org |
| * | ICSI | Summary Report: Preventive Services Improvement at HealthPartners (2002) | Health Care Professionals | http://www.icsi.org |
| * | ICSI | Recorded Presentation: Preventive Services Focus Group (2002) | Health Care Professionals | http://www.icsi.org |
| | Mayo Clinic | Mayo Clinic: Provides information on current hot topics and provides the opportunity to ask a Mayo specialist your questions. | Patients and Families; Health Care Professionals | http://www.mayoclinic.com |
| | Medical College of Wisconsin | Online tool to assess 10-year coronary heart disease and stroke risk. | Health Care Professionals | http://www.mcw.edu/calculators/CoronaryHeartDiseaseRisk.htm |
| | Minnesota International Health Volunteers | Minnesota International Health Volunteers: Health education videos for Somali women. | Patients and Families; Health Care Professionals | http://www.mihv.nonprofitoffice.com |
| | National Heart, Lung, and Blood Institute | National Heart, Lung, and Blood Institute: Education to reduce illness and death from coronary heart disease related to high cholesterol. | Patients and Families; Health Care Professionals | http://www.nhlbi.nih.gov/about/ncep |
| | National Institute of Alcohol Abuse and Addiction | National Institute of Alcohol Abuse and Addiction: A pocket guide for alcohol screening and brief intervention. | Patients and Families; Health Care Professionals | http://www.niaaa.nih.gov |
| | National Institute on Media and Family | National Institute on Media and Family: Provides tools to help families evaluate their media use ratings on video games, videos and television programs. | Patients and Families; Health Care Professionals | http://www.mediafamily.org |

* Available to ICSI members only.

Resources Available

| * | Author/Organization | Title/Description | Audience | Web Sites/Order Information |
|---|--|--|---|---|
| | National Institutes of Health | National Institutes of Health: This user-friendly site helps you start a search for health information by directing you to some credible databases. | Patients and Families; Health Care Professionals | http://www.nih.gov |
| | National Safety Council | Minnesota Safety Council – Fall Prevention Checklist: A Web site created by the Minnesota Safety Council, a private, not-for-profit organization, dedicated to keeping Minnesotans safe from unintentional injuries ("accidents"). | Patients and Families; Health Care Professionals | http://www.mnsafetycouncil.org/seniorsafe/falls/index.cfm |
| * | North Clinic | Tobacco Cessation Program at North Clinic (2002) | Health Care Professionals | http://www.icsi.org |
| | Olmsted County (Minnesota) | Cardiovision 2020: A Community health initiative involving a team of health professionals and community partners to improve heart health in Olmsted County. | Patients and Families; Health Care Professionals | http://www.cardiovision2020.org |
| * | Park Nicollet Health Services | Women's Health Patient Education: "Get the Calcium You Need." | Health Care Professionals | http://www.icsi.org |
| * | Park Nicollet Health Services | Women's Health Patient Education: "Mammography and Breast Cancer Screening." | Health Care Professionals | http://www.icsi.org |
| * | Park Nicollet Health Services | Women's Health Patient Education: "When to Schedule Pap Smears." | Health Care Professionals | http://www.icsi.org |
| * | Park Nicollet Health Services | "Screening for Colon Cancer" | Health Care Professionals | http://www.icsi.org |
| * | Park Nicollet Health Services | "Guidelines for Preventive Health Care" | Health Care Professionals | http://www.icsi.org |
| | Patient Health Questionnaire (PHQ) Screeners | A diagnostic tool for mental health disorders used by health care professionals that is quick and easy for patients to complete. Created by Robert L. Spitzer, MD, Kurt Kroenke, MD, and colleagues at Columbia University. | Health Care Professionals | http://www.phqscreeners.com |
| | Quitnet | Provides fact sheets on all aspects of tobacco cessation, including motivational e-mails, chat rooms, and links to local organizations that provide support to individuals. | Patients and Families | http://www.quitnet.com |
| | Quitplan | Provides free tobacco cessation services | Patients and Families | https://www.quitnow.net/quit-plan/ |

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Resources Available

| * | Author/Organization | Title/Description | Audience | Web Sites/Order Information |
|---|---|--|---|---|
| | Shape-Up America | Provides self-assessment tools, information about the benefits of becoming more active, suggestions about different ways to approach adding physical activity, and assistance with overcoming barriers. | Patients and Families; Health Care Professionals | http://www.shapeup.org |
| | State of California | Fall Prevention Center of Excellence: Official Web site of the <i>Fall Prevention Center of Excellence</i> . Their mission is to identify best practices in fall prevention and to help communities offer fall prevention programs to older people who are at risk of falling. | Patients and Families; Health Care Professionals | www.stopfalls.org |
| | Substance Abuse and Mental Health Services Administration | Information on programs and publications for improving the quality and availability of substance abuse prevention, alcohol and drug addiction treatment, and mental health services. Includes information on the CAGE-AID screening tool. | Health Care Professionals | http://www.samhsa.gov |
| | U.S. Department of Agriculture | My Pyramid: Games and posters about good nutrition and activities for kids. "My Pyramid Plan" and "Inside the Pyramid" provide development of individual personal nutrition and activity plans. | Patients and Families; Health Care Professionals | http://www.mypyramid.gov |
| | United States Department of Agriculture (USDA) | The Food and Nutrition Information Center: This site is sponsored by the United States Department of Agriculture (USDA). It is very user friendly and filled with current information on almost any nutrition topic. | Patients and Families; Health Care Professionals | http://www.nal.usda.gov/fnic/ |
| | U.S. Department of Health and Human Services | Healthy People 2010: Comprehensive site provides information on Healthy People 2010. Leading health indicators, guidelines, data and health information are given. | Patients and Families; Health Care Professionals | http://www.healthypeople.gov |
| | U.S. Food and Drug Administration | This is a reliable and up-to-date site. It provides the most recent information available. | Patients and Families; Health Care Professionals | http://www.fda.gov |
| | Western States Stroke Consortium | Online tool to assess 10-year coronary heart disease and stroke risk. | Health Care Professionals | http://www.westernstroke.org/PersonalStrokeRisk1.xls |

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