Complete Summary

GUIDELINE TITLE

Preventive services for adults.

BIBLIOGRAPHIC SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Preventive services for adults. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2007 Oct. 87 p. [172 references]

GUIDELINE STATUS

Note: This guideline has been updated. The National Guideline Clearinghouse (NGC) is working to update this summary.

COMPLETE SUMMARY CONTENT

SCOPE
METHODOLOGY - including Rating Scheme and Cost Analysis
RECOMMENDATIONS
EVIDENCE SUPPORTING THE RECOMMENDATIONS
BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS
CONTRAINDICATIONS
QUALIFYING STATEMENTS
IMPLEMENTATION OF THE GUIDELINE
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES
IDENTIFYING INFORMATION AND AVAILABILITY
DISCLAIMER

SCOPE

DISEASE/CONDITION(S)

Preventable diseases or conditions, such as:

- Coronary heart disease
- Tobacco or alcohol use/abuse
- Infectious diseases, such as pneumococcal pneumonia, influenza, tetanus, diphtheria, pertussis, hepatitis B, herpes zoster/shingles, human papilloma virus, poliomyelitis, measles, mumps, rubella, varicella
- Cervical cancer, colorectal cancer, breast cancer
- Hypertension
- Vision impairment
- Chlamydia

- Dyslipidemia
- Folic acid deficiency
- Depression
- Hearing impairment
- Obesity
- Osteoporosis and osteoporotic fractures
- Abdominal aortic aneurysm

The guideline developers also discuss, but make no specific recommendations for, preventive services related to the following conditions:

- Anxiety and stress
- Dementia
- Dental and periodontal diseases
- Domestic violence and abuse
- Drug abuse
- Traumatic injury due to motor vehicle and bicycle accidents, fire injury, falls, hot water, firearm injuries
- Menopause
- Preconception/maternal health
- Prostate cancer
- Sexually transmitted infections (other than chlamydia)
- Skin cancer
- Unintended pregnancy
- Ovarian cancer
- Diabetes
- Anemia
- Hypothyroidism
- Tuberculosis

GUIDELINE CATEGORY

Counseling
Evaluation
Prevention
Risk Assessment
Screening

CLINICAL SPECIALTY

Family Practice
Geriatrics
Internal Medicine
Obstetrics and Gynecology
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Health Care Providers
Health Plans

Hospitals
Managed Care Organizations
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To provide a comprehensive approach to the provision of preventive services, counseling, education, and disease screening for average-risk, asymptomatic adults age 18 and over
- To increase regular use of health risk assessments
- To increase the percentage of patients with all Level I preventive services on time. (See Table 1: Preventive Services Which Providers and Care Systems *Must* Deliver [Based on Best Evidence] in the "Major Recommendations" field.)

TARGET POPULATION

Average-risk, asymptomatic adults age 18 and over

Note: This guideline generally does not address the needs of pregnant women, individuals with chronic disorders, or high-risk populations (there are occasional exceptions where noted).

INTERVENTIONS AND PRACTICES CONSIDERED

Screening

Screening maneuvers including:

- Risk stratification and health assessment
- Using nearly every patient contact to identify and address preventive service needs
- Mammogram
- Papanicolaou smear
- Chlamydia screening
- Colorectal cancer screening
- Hypertension screening via blood pressure measurement
- Lipid screening
- Problem drinking screening
- Tobacco use screening
- Vision screening via objective visual acuity testing (Snellen chart)
- Abnormal aortic aneurysm screening
- Depression screening
- Subjective hearing testing
- Height and weight measurement and calculation of body mass index (BMI)
- Osteoporosis screening via bone mineral density (BMD) testing

Counseling

Counseling and education on the following topics:

- Tobacco cessation
- Alcohol use/abuse
- Aspirin, calcium, and folic acid chemoprophylaxis (**Note**: Routine use of aspirin and nonsteroidal antiinflammatory drugs [NSAIDs] for the primary prevention of colorectal cancer in average risk individuals is not recommended)

Prevention

Immunizations, including:

- Influenza vaccine
- Pneumococcal vaccine
- Hepatitis B vaccine
- Herpes zoster vaccine
- Human papilloma virus (HPV) vaccine
- Inactivated polio virus (IPV) vaccine
- Measles, mumps, rubella (MMR) vaccine
- Tetanus-diphtheria booster and diphtheria, tetanus, acellular pertussis (DTaP) vaccine
- Varicella vaccine

Additionally, the following preventive services are discussed, but there is insufficient evidence to warrant a recommendation:

- Counseling about advance directives
- Counseling about anxiety and stress
- Clinical breast examination screening
- Routine testing for dementia
- Counseling about dental and periodontal health
- Screening for and counseling about domestic violence and abuse
- Screening for and counseling about drug abuse
- Screening for and counseling about injury prevention
- Counseling regarding hormone replacement therapy for menopause
- Counseling regarding nutrition and physical activity
- Preconception counseling
- Prostate specific antigen (PSA) screening and digital rectal exam of the prostate
- Screening for and counseling about sexually transmitted infection (other than chlamydia)
- Screening for and counseling about skin cancer
- Counseling about unintended pregnancy prevention

MAJOR OUTCOMES CONSIDERED

- Effectiveness of screening tests
- Effectiveness of counseling and education
- Effectiveness of immunization and chemoprophylaxis
- Predictive value of screening tests

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

A literature search of clinical trials, meta-analysis, and systematic reviews is performed.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

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 presented below, and are designated as positive, negative, or neutral to reflect the study quality.

Conclusion Grades:

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 of 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.

Study Quality Designations:

The quality of the primary research reports and systematic reviews are designated in the following ways on the conclusion grading worksheets:

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

Negative: indicates that these issues (inclusion/exclusion, bias, generalizability, and data collection and analysis) have not been adequately addressed.

Neutral: indicates that the report or review is neither exceptionally strong nor exceptionally weak.

Not Applicable: indicates that the report is not a primary reference or a systematic review and therefore the quality has not been assessed.

Classes of Research Reports:

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

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Each guideline, order set, and protocol is developed by a 6- to 12-member work group that includes physicians, nurses, pharmacists, other healthcare professionals relevant to the topic, along with an Institute for Clinical Systems Improvement (ICSI) staff facilitator. Ordinarily, one of the physicians will be the leader. Most work group members are recruited from ICSI member organizations, but if there is expertise not represented by ICSI members, one or two members may be recruited from medical groups or hospitals outside of ICSI.

The work group meets for seven to eight three-hour meetings to develop the guideline. A literature search and review is performed and the work group members, under the coordination of the ICSI staff facilitator, develop the algorithm and write the annotations and footnotes and literature citations.

Once the final draft copy of the guideline is developed, the guideline goes to the ICSI members for critical review.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

The guideline developers reviewed published cost analyses.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Critical Review Process

Every newly developed guideline or a guideline with significant change is sent to Institute for Clinical Systems Improvement (ICSI) members for Critical Review. The purpose of critical review is to provide an opportunity for the clinicians in the member groups to review the science behind the recommendations and focus on the content of the guideline. Critical review also provides an opportunity for clinicians in each group to come to consensus on feedback they wish to give the work group and to consider changes necessary across systems in their organization to implement the guideline.

All member organizations are expected to respond to critical review guidelines. Critical review of guidelines is a criterion for continued membership within ICSI.

After the critical review period, the guideline work group reconvenes to review the comments and make changes, as appropriate. The work group prepares a written response to all comments.

Approval

Each guideline, order set, and protocol is approved by the appropriate steering committee. There is one steering committee each for Respiratory, Cardiovascular, Women's Health, and Preventive Services. The Committee for Evidence-based Practice approves guidelines, order sets, and protocols not associated with a particular category. The steering committees review and approve each guideline based on the following:

- Member comments have been addressed reasonably.
- There is consensus among all ICSI member organizations on the content of the document.
- To the extent of the knowledge of the reviewer, the scientific recommendations within the document are current.
- Either a critical review has been carried out, or to the extent of the knowledge of the reviewer, the changes proposed are sufficiently familiar and sufficiently agreed upon by the users that a new round of critical review is not needed.

Once the guideline, order set, or protocol has been approved, it is posted on the ICSI Web site and released to members for use. Guidelines, order sets, and protocols are reviewed regularly and revised, if warranted.

Revision Process of Existing Guidelines

ICSI scientific documents are revised every 12 to 36 months as indicated by changes in clinical practice and literature. Every 6 months, ICSI checks with the work group to determine if there have been changes in the literature significant enough to cause the document to be revised earlier than scheduled.

Prior to the work group convening to revise the document, ICSI members are asked to review the document and submit comments. During revision, a literature search of clinical trials, meta-analysis, and systematic reviews is performed and reviewed by the work group. The work group meets for 1-2 three-hour meetings to review the literature, respond to member organization comments, and revise the document as appropriate.

If there are changes or additions to the document that would be unfamiliar or unacceptable to member organizations, it is sent to members to review prior to going to the appropriate steering committee for approval.

Review and Comment Process

ICSI members are asked to review and submit comments for every guideline, order set, and protocol prior to the work group convening to revise the document.

The purpose of the Review and Comment process is to provide an opportunity for the clinicians in the member groups to review the science behind the recommendations and focus on the content of the order set and protocol. Review and Comment also provides an opportunity for clinicians in each group to come to consensus on feedback they wish to give the work group and to consider changes needed across systems in their organization to implement the guideline.

All member organizations are encouraged to provide feedback on order sets and protocol, however responding to Review and Comment is not a criterion for continued membership within ICSI.

After the Review and Comment period, the work group reconvenes to review the comments and make changes as appropriate. The work group prepares a written response to all comments.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Note: This guideline has been updated. The National Guideline Clearinghouse (NGC) is working to update this summary. The recommendations that follow are based on the previous version of the guideline.

Note from the National Guideline Clearinghouse (NGC) and the Institute for Clinical Systems Improvement (ICSI): For a description of what has changed since the previous version of this guidance, refer to "Summary of Changes Report -- October 2007."

This guideline 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 ICSI guidelines (such as the Lipid Management in Adults guideline or Hypertension Diagnosis and Treatment guideline [see the NGC summary of these guidelines]) will take precedence during any further diagnosis and management.

Recommendations for preventive services in adults are presented in the form of an algorithm with 8 components, accompanied by detailed annotations. An algorithm is provided for Preventive Services for Adults. Clinical highlights and selected annotations (numbered to correspond with the algorithm) follow.

Class of evidence (A-D, M, R, X) and conclusion grade (I-III, Not Assignable) definitions are repeated at the end of the "Major Recommendations" field.

The services in this guideline are organized into four groups, based on their evidence of effectiveness and their priority ranking, as follows:

Level I Preventive Services that providers and care systems *must* deliver (based on best evidence). *(Annotation #4)*

Level II Preventive Services that providers and care systems *should* deliver (based on good evidence). *(Annotation #5)*

Level III Preventive Services for which the evidence is currently incomplete. *(Annotation #5a)*

Level IV Screening maneuvers that are not supported by evidence. *(Annotation #5b)*

Table 1. Adult Preventive Services That Providers and Care System *Must* Deliver (Based on Best Evidence) (Level I)

Service	19 to 39 Years	40 to 64 Years	Over 65 Years
Aspirin chemoprophylaxis counseling	Discuss with postmenopausal women, men above age 40, and younger men and women who are at increased risk for coronary heart disease (CHD).		
Breast cancer screening		Annual mammogram for women age 40 to 49 years with high risk factors. Mammogram every 1 to 2 years for women age 50 to 75	Mammogram every 1 to 2 years for women age 50 to 75 years.

Service	19 to 39 Years	40 to 64 Years	Over 65 Years
		years.	
Calcium chemoprophylaxis counseling	Counsel adult women to use calcium supplements to prevent fractures.		
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	Women 65 years and older with new sexual partner should resume routine screening.
Chlamydia screening	All sexually active women aged 25 years and younger, and older women at increased risk for infection		
Colorectal cancer screening		Ages 50 to 80, or if African American 45 to 80, at appropriate intervals as determined by whichever screening method is chosen.	
Hypertension screening	Blood pressure every 2 years if less than 120/80; every year if 120 to 139/80 to 89 mm Hg		
Influenza immunization	Annually throughout entire flu season for individuals age 50 and older, those at high risk, and all persons who wish to decrease the likelihood of contracting influenza.		
Lipid screening	Fasting fractionated lipid screening for men over age 34 every five 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. Re-immunize those at risk of losing immunity once after 5 years.		Immunize at 65 if not done previously. Re-immunize once if 1st received more than 5 years ago and before age 65, or an

Service	19 to 39 Years	40 to 64 Years	Over 65 Years
			appropriate immunocompromising condition is present.
Problem drinking screening and brief counseling	Screen for problem drinking among adults and provide brief counseling.		
Tobacco use screening and brief intervention	Assess adults for tobacco use and provide ongoing cessation services.		
Vision screening			Screen adults ages 65 or greater routinely.

Table 2. Adult Preventive Services That Providers and Care Systems *Should* Deliver (Based on Good Evidence) (Level II)

Service	19 to 39 Years	40 to 64 Years	Over 65 Years
Abdominal aortic aneurysm screening			Men ages 65 to 74 who have ever smoked (greater than 100 cigarettes in lifetime)
Depression screening	Routine screening for adult patients with depression if there are systems in place to ensure accurate diagnosis, effective treatment, and careful follow-up		
Folic acid chemoprophylaxis counseling	Counsel women of childbearing age routinely on use of folic acid supplements to prevent birth defects.		
Hearing screening			Subjective hearing screen followed by counseling on hearing aid devices and making referrals as appropriate
Hepatitis B	Universal	Immunize those at	

Service	19 to 39 Years	40 to 64 Years	Over 65 Years
immunization	immunization	high risk.	
Herpes zoster/shingles immunization			Immunize at age 60 or older.
Human papillomavirus (HPV) immunization	Catch up if appropriate, three-dose series		
Inactivated polio vaccine (IPV) immunization	Immunize if not previously immunized.		
Measles, mumps, rubella (MMR) immunization	Persons born during or after 1957 should have one-dose measles; a second dose may be required in special circumstances		
Obesity screening	Record height, weight, and body mass index (BMI) at least annually for screening.		
Osteoporosis screening	Assess and discuss risk factors for osteoporosis, and its primary prevention, with all patients for preventive health visits.		
Tetanus-diphtheria immunization	Immunize adults every 10 years.		
Varicella immunization	For all adults who do not have evidence of immunity to varicella, give two doses of varicella vaccine with at least 28 days between first and second doses.		

Preventive Services for Which the Evidence Is Currently Incomplete (Level III)

- Advance directives counseling
- Anxiety and stress counseling
- Clinical breast exam screening
- Dementia routine testing
- Dental and periodontal disease counseling
- Domestic violence and abuse screening and counseling
- Drug abuse screening and counseling
- Injury prevention screening and counseling
- Menopause and hormone therapy counseling
- Nutrition and physical activity counseling
- Preconception counseling

- Prostate-specific antigen (PSA) screening and digital rectal exam of the prostate
- Sexually transmitted infection counseling (other than chlamydia)
- Sexually transmitted infection screening (other than chlamydia)
- Skin cancer screening and counseling
- Unintended pregnancy prevention counseling

Screening Maneuvers That Are Not Supported by Evidence (Level IV)

- Blood chemistry panels
- CA 125 and ultrasound (for ovarian cancer screening)
- Coronary heart disease routine testing
- Diabetes routine testing
- Hemoglobin/hematocrit (for anemia screening)
- Thyroid stimulating hormone (TSH)/thyroxine (for hypothyroidism screening)
- Tuberculin skin testing
- Urinalysis

Clinical Highlights and Recommendations

- All clinic visits—whether acute, chronic, or for preventive services—are opportunities for prevention. Incorporate appropriate preventive service at every opportunity. (*Annotation #3*)
- Assess patients for risk factors at periodic intervals. (*Annotation #2*)
- Address or initiate adult preventive services that providers and care systems *must* deliver (based on best evidence) (Level I) (*Annotation #4*)
    - Aspirin chemoprophylaxis counseling
    - Breast cancer screening
    - Calcium chemoprophylaxis counseling
    - Cervical cancer screening
    - Chlamydia screening
    - Colorectal cancer screening
    - Hypertension screening
    - Influenza immunization
    - Lipid screening
    - Pneumococcal immunization
    - Problem drinking screening and brief counseling
    - Tobacco use screening and brief intervention
    - Vision screening

Preventive Services for Adults Algorithm Annotations

1. **System Alerts Patient/Parent or Provider of Needed Preventive Services**

   Clinics must determine a process or method of communicating what has been done, what needs to be done, etc. This may be a paper face sheet in the patient's chart, electronic postcard reminders, or pop-ups on a computer screen, for example. The ideal system at a minimum alerts providers, the appointment desk and others at each contact, and even better if it alerts patient and the health team independent of patient-initiated contact.

The advent of the electronic health record has supported the trend of providing appropriate preventive services exactly when indicated, therefore lessening the need for the periodic exam as an organizing construct.

2. **Perform Risk Stratification and Health Assessment at Least Every Five Years**

   In order to provide preventive services, it is first necessary to know which services are needed by individual patients. This includes both knowing when their last services were provided and what risk factors they have. This information may be most efficiently collected through the use of questionnaires or automated ways of combining information from the medical record with patient-collected information. Nursing or reception staff can collect this information, or increasingly it may be collectible through internet and web-based technologies. As important as collecting data thoroughly is having some way to update the information at regular intervals. One-on-one interviews by clinicians are the least efficient way to obtain or update this information.

3. **Use Every Opportunity for Prevention**

   Nearly every patient contact for any reason should be used to identify and address preventive service needs.

   Possible examples might include the following:

   - A 55-year-old female patient calls requesting an appointment for preventive visit, which would trigger the scheduler to ask patient about need for mammogram. The scheduler could simultaneously schedule both appointments.
   - As a 65-year-old patient is roomed for a routine visit, the rooming nurse asks whether the patient has had a flu shot yet this year. If not, the nurse relies on standing orders to give the shot.
   - A medical group establishes risk lists of patients needing particular preventive services, and assigns a nurse to periodically contact patients on the list, by mail or phone, who have not kept those services up-to-date.

   The work group recognizes that urgent or emergent visits may not always present preventive service opportunities.

Prevention Visit Schedules

There is insufficient evidence to recommend one schedule over another in terms of lowering mortality and morbidity, recognizing disability, promoting optimal growth and development, or helping patients achieve longer more productive lives. Many services can be provided during routine visits. Similarly, an assessment of preventive services needs can be incorporated into any visit. The visit schedules recommended in these guidelines may augment a clinic's ability to assure provision of preventive services, but this

may be unnecessary over time as effective clinic systems allow the services to be incorporated into other clinic visits.

There have been no studies comparing the efficacy of various scheduled frequencies of preventive services visits. Furthermore, little information is available about what patients prefer for preventive visits, although their behavior suggests that a fairly large minority either doesn't believe in the value of existing approaches or cannot afford them. Thus, all existing schedules are attempts to combine various medical opinions with the frequency required for *certain* preventive services, especially immunizations and cancer screening tests.

4. **Preventive Services That Providers and Care Systems *Must* Deliver (Based on Best Evidence) (Level I)**

Level I preventive services are worthy of attention at every visit. Busy clinicians cannot deliver this many services in any single visit. 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.

Aspirin Chemoprophylaxis Counseling

Services

Aspirin prophylaxis should be discussed with postmenopausal women, men above the age of 40, and younger men and women who are at increased risk for coronary heart disease (CHD) because of tobacco use, dyslipidemia, hypertension, diabetes, or family history of premature CHD.

Although the U.S. Preventive Services Task Force (USPSTF) found there is fair evidence that higher doses of aspirin and nonsteroidal antiinflammatory drugs (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.

Efficacy

U.S. Preventive Services Task Force guideline recommends a discussion of aspirin therapy for primary prevention of myocardial infarction with patients at risk of coronary heart disease (CHD).

Estimates of the magnitude of benefits and harms of aspirin therapy vary with an individual's risk for CHD. Estimates of benefits and harms of aspirin therapy to 1,000 individuals are as follows: CHD events avoided, 1-20; major gastrointestinal bleeding events caused, 2-4; hemorrhagic strokes caused, 0-2.

Using a risk calculator provides a more accurate estimate of cardiovascular risk. Prior to publication of the nurses' health study results, the USPSTF

concluded that the balance of benefits and harms from aspirin chemoprophylaxis is most favorable in patients at high risk for CHD (five-year risk greater than or equal to 3%), including all postmenopausal women and all men over the age 40.

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

Evidence supporting this recommendation is of classes: A, M, R

Breast Cancer Screening

Services

Screening mammogram every 1 to 2 years is recommended for women age 50 to 75 years.

Mammograms may be performed at the mutual consent of the patient and provider in women over the age of 75.

Women age 40 to 49 years with high risk factors should initiate annual screening. High risk factors include:

- Previous breast biopsy demonstrating atypical hyperplasia
- Family history of breast cancer in the patient's mother, sister, or daughter
- Past personal history of breast cancer

The evidence for mortality reduction for low-risk women of this age group is less clear.

Efficacy

The most important tool in the early detection of breast cancer is screening mammography. The USPSTF 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 to 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 (CBE) every one to two years for women aged 40 and older." This extension to the 40 to 49 year old group has been controversial.

References/Related Guidelines

See the NGC summary of the ICSI guideline Diagnosis of Breast Disease.

Evidence supporting this recommendation is of classes: M, R

Calcium Chemoprophylaxis Counseling

Services

Counsel adult women to use calcium supplements to prevent fractures.

Efficacy

Adequate calcium intake from food sources and supplements promotes bone health. When food sources do not provide enough calcium, supplements can be used to meet this goal. Bioavailability of calcium in food sources and supplements is a factor in achieving daily calcium recommendations. Calcium supplement labels should indicate lead testing.

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

19 to 50 years - 1,000 milligrams

Over 50 years - 1,200 milligrams

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.

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.

References/Related Guidelines

See the NGC summary of the ICSI guideline Diagnosis and Treatment of Osteoporosis.

Evidence supporting this recommendation is of class: R

Cervical Cancer Screening

Services

All women should be screened for cervical cancer beginning at age 21 or three years after initiating sexual intercourse, whichever is earlier. Screening should be performed every three years after three consecutive normal Pap smears over five years.

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.

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.

After age 65, there is no clear evidence for continuing Pap smears in women who have had previous normal screening. Women age 65 and older who have a new sexual partner should resume routine screening.

Human papillomavirus (HPV) testing may be used as an adjunct to Pap smear screening to help minimize unnecessary colposcopies and other interventions.

Women who have had dysplasia on prior Pap smears should continue with annual screening for five years after the last dysplastic pap smear; after that, they need only every-three-year screening.

Women with a history of CIN 2/3 and a subsequent total hysterectomy for benign disease may discontinue Pap smears after three consecutive normal tests within a ten-year period.

References/Related Guidelines

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

Evidence supporting this recommendation is of classes: C, M, R

Chlamydia Screening

Services

Routine screening for chlamydia is recommended for all sexually active women aged 25 years and younger and older women at increased risk for infection.

Risk factors include:

- Having new or multiple sex partners
- Having prior history of a sexually transmitted infection (STI)
- Not using condoms consistently and correctly

Refer to the original guideline document for information on burden of suffering from chlamydia.

Efficacy

The most efficacious means of reducing the risk of acquiring sexually transmitted infections through sexual contact is either abstinence from sexual relations or maintenance of a mutually monogamous sexual relationship with an uninfected partner. Condoms have been shown in the laboratory to prevent transmission of chlamydia trachomatis, herpes simplex virus,

trichomonas, cytomegalovirus and human immunodeficiency virus (HIV). Even under optimal conditions, however, condoms are not always efficacious in preventing transmission. Condom failures occur at an estimated rate of 10% to 15% either as a result of product failure or as a result of incorrect or inconsistent use.

Evidence supporting this recommendation is of classes: A, R

Colorectal Cancer Screening

Key Points:

- Patients between the ages of 50 and 80, or age 45 to 80 for African Americans, should be screened for colorectal cancer at appropriate intervals as determined by whichever screening method is chosen.
- Several different screening methods (fecal occult blood testing [FOBT] annually, combination of 60 cm flexible sigmoidoscopy every five years and FOBT annually, 60 cm flexible sigmoidoscopy every five years, total colon evaluation, or a combination of methods) are all effective.
- The screening method utilized should be determined by joint decision making by the patient and provider.

Services

The ICSI Colorectal Cancer Screening guideline (see NGC summary) recommends screening for colorectal cancer in average risk patients 50 to 80 years of age, or 45 to 80 for African Americans. While the best data available support screening between ages 50 and 80, otherwise healthy individuals over the age of 80 may be candidates for screening if their presumed life expectancy is eight or more years.

Average-risk patients are considered to be individuals with no personal history of polyps or colorectal cancer, no family history of colorectal cancer (one first order relative diagnosed before age 60 or two first order relatives diagnosed at any age), and no family history of adenomatous polyps (one first order relative diagnosed before age 60).

Patients with a history of prior adenomatous polyp with villous component or any adenomatous polyp greater than 10 mm, long-standing chronic ulcerative colitis, or a family history of familial polyposis coli or non-polyposis hereditary colorectal cancer are considered to be at high-risk for developing colorectal cancer. These individuals require colonoscopic surveillance every three to five years and fall outside the scope of this guideline.

There is no single "best" test for colorectal cancer screening and the final choice is often best made jointly, based on the clinical judgment of a well informed provider and the preferences of a well informed patient.

Efficacy

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

Both annual FOBT and 60 cm flexible sigmoidoscopy performed every five years have proven benefit in detecting colorectal cancer and adenomatous polyps. The guideline workgroup did not reach absolute consensus as to which screening test is preferable, but does advocate screening by one or both tests. The high false positive rate of FOBT, the inability of flexible sigmoidoscopy to visualize the entire colon, and at least one report that one time combined screening failed to detect 24% of advanced colonic neoplasia, were all noted.

If in the judgment of the provider an examination of the whole colon and rectum is desired, this can be accomplished by either colonoscopy, flexible sigmoidoscopy combined with fluoroscopic barium enema, or double contrast barium enema (DCBE). In some clinical situations computed tomography (CT) colonography may be reasonable. If the sigmoid colon is not well visualized on DCBE, a flexible sigmoidoscopy should be obtained. The interval between exams with flexible sigmoidoscopy alone or combined with fluoroscopic barium enema and between DCBE is five years. The interval between exams with colonoscopy is 10 years. At this time no clear recommendations can be made regarding the interval between CT colonography exams.

CT colonography is superior to FOBT, flexible sigmoidoscopy, and barium enema, and is a viable alternative to colonoscopy for colorectal cancer screening. Its use is limited by cost and reimbursement issues, the high number of extracolonic findings requiring further evaluation, and other issues. CT colonoscopy may be indicated in settings where the proximal colon cannot be examined by conventional colonoscopy, or in patients where colonoscopy is relatively contraindicated (e.g., anticoagulation).

References/Related Guidelines

See the NGC summary of the ICSI guideline Colorectal Cancer Screening.

Evidence supporting this recommendation is of class: R

Hypertension Screening

Key Points:

- Check blood pressure (BP) at least every two years.
- Promote a healthy lifestyle to optimize blood pressure control.
- Target blood pressure goal in context of additional cardiovascular risk factors.

Services

To detect and monitor hypertension, blood pressure should be measured at least every two years for adults with BP less than 120/80 and every year if BP is 120-139/80-89 mm 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.

Efficacy

Periodic Screening in Adults at Patient Visits

Hypertension is an important public health problem that affects 25 to 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.

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.

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.

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 (see NGC summary). Recommend blood pressure confirmation and follow-up within two months if the blood pressure is 140 to 159/90 to 94. Recommend blood pressure confirmation and follow-up within one month if the blood pressure is greater than 160/100.

Counseling Messages

- If BP 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.

References/Related Guidelines

See the NGC summary of the ICSI guideline Hypertension Diagnosis and Treatment.

Evidence supporting this recommendation is of classes: B, C, M, R

Influenza Immunization

Services

Provide immunization annually throughout entire flu season for individuals age 50 and older, those at high risk, and all persons who wish to decrease the likelihood of contracting influenza.

References/Related Guidelines

See the NGC summary of the ICSI guideline Immunizations.

Evidence supporting this recommendation is of class: R

Lipid Screening

Key Points:

- Screen men over age 34 and women over age 44 with serum cholesterol fractionation measurement every five years.
- The decision to screen men aged 20 to 34, and women aged 20 to 44, should be based on risk for coronary heart disease (CHD) and the individual preferences of the patient.
- Patients with low-density lipoprotein (LDL)-cholesterol 130 mg/dL or more, or high-density lipoprotein (HDL)-cholesterol less than 40 mg/dL, who have a triglyceride level of 200 mg/dL or more should follow treatment recommendations as outlined in the NGC summary of the ICSI guideline Lipid Management in Adults.

Services and Counseling Messages

A fasting cholesterol fractionation (total cholesterol, calculated LDL-cholesterol, HDL-cholesterol and triglyceride) is recommended 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 to 34 years and women aged 20 to 44 years with first-degree relatives with total cholesterol greater than 300 or history of premature CHD.

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 NGC summary of the ICSI guideline Lipid Management in Adults.

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 which would not be affected by knowledge of their lipid status (e.g., those with comorbid conditions such as terminal cancer).
- 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, or/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.

No clinical trials address the treatment of dyslipidemia among men aged 20 to 34 years and among women aged 20 to 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 or low HDL are risk factors for vascular disease.

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.

References/Related Guidelines

See the NGC summary of the ICSI guideline Lipid Management in Adults.

Evidence supporting this recommendation is of classes: A, B, C, M, R

Pneumococcal Immunization

Services

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

References/Related Guidelines

See the NGC summary of the ICSI guideline Immunizations

Evidence supporting this recommendation is of class: R

Problem Drinking Screening and Brief Counseling

Services

The goal is to 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., risky/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:

- Women: greater than 7 drinks/week or greater than 3 drinks/occasion
- Men: greater than 14 drinks/week or greater than 4 drinks/occasion

This can be done by having the clinician or (preferably) rooming nurse simply ask about the quantity drunk, using a simple questionnaire with the same questions on it, or using a formal validated screening questionnaire, of which the AUDIT is best (10 questions, created by the World Health Organization [WHO], extensively validated, and included in Appendix B, "Counseling and Education Tools: Problem Drinking" of the original guideline document).

Other questionnaires, especially the 4 question CAGE (also in Appendix B of the original guideline document) are primarily designed to identify those with dependence, so don't include questions about the quantity/frequency.

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." It gave these recommendations a B rating.

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.
- 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 not to ride with someone under the influence of alcohol and to prevent him or her from driving.

References/Related Guidelines

See Appendix B, "Counseling and Education Tools: Problem Drinking" in the original guideline document for the CAGE Questionnaire and AUDIT Structured Interview.

Evidence supporting this recommendation is of classes: M, R

Tobacco Use Screening and Brief Intervention

Services

Establish tobacco use status for all patients. All forms of tobacco should be screened. Provide ongoing cessation services to all tobacco users at every opportunity.

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.

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. Tobacco cessation services are most effective when offered on a regular basis to all patients who use tobacco. 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.
- Assist users who are willing to make a quit attempt.
- Arrange follow-up.

These components are best carried out when the entire office staff is organized to provide these services.

Three treatment elements are effective for tobacco cessation intervention: pharmacotherapy, 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.

While readiness stage intervention is commonly used, evidence does not strongly support it.

The recommended intervention includes promoting a smoke-free living environment because secondhand smoke is a major contributor to tobacco-related health problems.

Structured physician clinical-based smoking cessation counseling is more effective than usual care in reducing smoking rates. The addition of telephone-based counseling may result in further improvements in cessation. *[Conclusion Grade II: See Conclusion Grading Worksheet A -- Annotation #4 (Smoking Cessation Counseling) in the original guideline document]*

Counseling Messages

- Advise tobacco users to quit.
- Assess user's willingness to make a quit attempt.
- Provide counseling depending on readiness-to-quit stage. Provide a motivational intervention if the user is not ready to make a quit effort.
- Assist in quitting if ready to make a quit effort. Negotiate a quit date. Counsel to support cessation and build abstinence skills. Discuss pharmacotherapy. Offer phone line for more assistance.
- Arrange follow-up.

Evidence supporting this recommendation is of class: R

Vision Screening

Services

Objective vision testing (Snellen chart) for asymptomatic patients is recommended only for elderly adults.

Efficacy

Vision screening has been recommended for elderly adults by the USPSTF based upon separate evidence of high prevalence of under-corrected impairments, the accuracy of screening tests, the effectiveness of eye glasses, and the willingness of some individuals to follow-through with additional screening and purchase of eye glasses. No studies have directly demonstrated a relationship between vision screening and improved usual corrected vision, improved quality of life, or activities of daily living.

A review of epidemiologic studies conducted in the United States, United Kingdom, and Australia concluded that the prevalence of under-corrected visual impairment is about 10% between the ages of 65 and 75 and 20% above the age of 75. These summary estimates include only one U.S. study, but are generally consistent with other U.S. studies.

Evidence supporting this recommendation is of classes: A, B, C, R

5. **Preventive Services That Providers and Care Systems *Should* Deliver (Based on Good Evidence) (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

Key Points:

- Screening for abdominal aortic aneurysms in men ages 65 to 74 who have *ever* smoked (greater than 100 cigarettes in lifetime) has been shown to decrease the incidence of abdominal aortic aneurysm rupture mortality (but not all-cause mortality).
- Age, male gender, and smoking are the strongest risk factors for abdominal aortic aneurysm development.
- If a man does not have an abdominal aortic aneurysm identified on his first screen after age 65, future rupture or death is very unlikely.

Screening

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

For *men* ages 65 to 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.

Refer to the original guideline document for information on efficacy of abdominal aortic aneurysm screening.

Evidence supporting this recommendation is of classes: A, R

Depression Screening

Services

The USPSTF has recommended routine depression screening 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" (B level evidence). There is now considerable evidence from many randomized trials that it is possible to improve treatment (both medications and counseling) 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

There are many instruments that have been well tested and validated for screening, ranging from two questions to the patient health questionnaire (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. See the NGC summary of the ICSI guideline Major Depression in Adults in Primary Care for example instruments and recommendations about management.

Efficacy

When combined with systematic management, screening can be very effective.

Counseling Messages

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

Evidence supporting this recommendation is of classes: C, M, R

Folic Acid Chemoprophylaxis Counseling

Services

Counsel women of childbearing age (15 to 45) to consume 400 micrograms of folic acid per day from food sources and/or supplements.

Efficacy

Neural tube defects (NTDs) are common birth defects that affect approximately 3,000 pregnancies each year. The occurrence of NTDs is reduced by 50 to 70% with the daily periconceptional consumption of 400 micrograms of folic acid. 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.

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; citrus fruits and berries.
- Take a vitamin supplement containing folic acid.

References/Related Guidelines

See the NGC summary of the ICSI guideline Routine Prenatal Care.

Evidence supporting this recommendation is of classes: A, C, D

Hearing Screening

Services

Subjective hearing screening (by questionnaire) followed by counseling on the availability of hearing aid devices and making referrals as appropriate is recommended for older adults.

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. 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 to 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%.

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

Evidence supporting this recommendation is of classes: A, C

Hepatitis B Immunization

Services

Universal Routine Vaccination

Hepatitis B vaccination is routinely recommended for those at high risk for exposure to this disease, as well as all infants, children, adolescents, and 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.

References/Related Guidelines

See the NGC summary of the ICSI guideline Immunizations.

Evidence supporting this recommendation is of class: B

Herpes Zoster/Shingles Immunization

Services

Zostavax® is a lyophilized preparation of the Oka/Merck strain of live, attenuated varicella zoster virus (VZV) used in the prevention of herpes zoster (shingles) and postherpetic neuralgia. On October 25, 2006, the Advisory Committee on Immunization Practices (ACIP) voted to recommend **ZOSTAVAX® (Zoster Vaccine Live [Oka/Merck]) be given to adults 60 years of age and older** to help protect against shingles and postherpetic neuralgia. The vaccine is for subcutaneous administration and is given as a single dose. A history of chicken pox or primary VZV infection is not required before administration. A history of prior shingles disease is not a contraindication. Duration of protection is at least four years, but total duration is unknown. The efficacy of vaccine appears to decrease with age, reaching levels of less than 20% protection in those over 80 years old.

ZOSTAVAX® should not be administered to individuals:

- With a history of anaphylactic/anaphylactoid reaction to gelatin or neomycin
- With a history of primary or acquired immunodeficiency states including leukemia lymphomas of any type, or other malignant neoplasms affecting the bone marrow or lymphatic system; or acquired immunodeficiency syndrome (AIDS) or other clinical manifestations of infection with human immunodeficiency viruses (see manufacturer warnings)
- On immunosuppressive therapy, including high-dose corticosteroids (>20 mg/day for three months or longer)
- With active untreated tuberculosis
- Who are or may be pregnant.

See also "Varicella Immunization" section later in this annotation.

References/Related Guidelines

See the NGC summary of the ICSI guideline Immunizations.

Evidence supporting this recommendation is of A, M, R

Human Papillomavirus (HPV) Immunization

Services

A new vaccine for Human Papillomavirus (HPV) has been licensed for women ages 9 through 26, and the ACIP has recommended routine use of the vaccine for all 11 to 12 year old females, and catch-up use of the vaccine for females age 12 through 26. This vaccine contains non-infectious self-assembling viral particles for four strains of HPV and alum adjuvant. The strains included are 6, 11, 16, and 18. Strains 16 and 18 account for 70% of oncogenic infections, and strains 6 and 11 account for 90% of venereal warts. This vaccine is similar to hepatitis B vaccines in both its manufacturing and components, differing only in the antigen used.

A three-dose series is recommended routinely for all females at age 12. Catch-up is worth doing up through age 26. While substantial numbers of older females have HPV infection, most have only one strain and will benefit from the vaccine. In economic models, the most cost effective schedule is to routinely immunize all women at age 12 and to do catch-up through age 26. When considering indirect costs, this strategy is cost saving. It is not necessary or desirable to test for previous HPV infection when starting the immunization series for sexually active women.

References/Related Guidelines

See the NGC summary of the ICSI guideline Immunizations.

Inactivated Polio Vaccine (IPV) Immunization Services

Most adults living in the U.S. are immune as a result of vaccination received as children. Furthermore, adults in the U.S. in general have little risk of exposure to wild-type poliovirus. Vaccination is recommended for non-immune adults who are at a greater risk of exposure to wild-type polioviruses, including the following:

- Travelers to areas or countries where polio is or may be epidemic or endemic
- Members of communities or specific population groups with polio
- Laboratory workers handling specimens that may contain polio viruses
- Health care professionals in close contact with patients who may be excreting wild-type polio viruses

Incompletely immunized adults, those who previously received less than a full primary course of the oral or the inactivated polio vaccine, should receive the remaining required doses of IPV vaccine, regardless of the length of time since the past doses or the forms of the vaccine. Unimmunized adults should undergo primary immunization with the inactivated polio virus vaccine. This is recommended over a minimum of seven months.

References/Related Guidelines

See the NGC summary of the ICSI guideline Immunizations.

Measles, Mumps, Rubella (MMR) Immunization

Services

Adults who are lacking documentation of vaccination or evidence of disease and who were born during or after 1957 should receive one dose of MMR. A second dose of MMR is recommended for adults who:

- Were recently exposed to measles or in an outbreak setting
- Were previously vaccinated with killed measles vaccine
- Were vaccinated with an unknown vaccine during 1963-1967
- Are students in postsecondary educational institutions
- Work in health care facilities
- Plan to travel internationally

References/Related Guidelines

See the NGC summary of the ICSI guideline Immunizations.

Obesity Screening

Key Points:

- Record height, weight, and body mass index (BMI) at least annually.

Services

Record height, weight and BMI at least annually. Record physical activity (e.g., Health Risk Assessment Questionnaire) at least every five years.

A BMI greater or equal to 30 is defined as obese, and a BMI of 25 to 29 is defined as overweight. Intensive intervention for obese individuals, based on BMI, is recommended by the U.S. Preventive Services to help control weight. Provide intensive intervention for obese patients or refer to programs offering intensive intervention.

Efficacy

The BMI is reliable and valid for identifying adults at increased risk for mortality and morbidity due to obesity or overweight.

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.

The ICSI guideline, Prevention and Management of Obesity (Mature Adolescents and Adults) (see NGC summary), 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.

The USPSTF concludes that there is insufficient evidence to recommend for or against routine behavioral counseling to promote either a healthy diet or physical activity. 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 it is estimated that they see over 11% of the population every month. 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.

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.

References/Related Guidelines

Refer to Appendix C, "Physical Activity Energy Expenditure", and Support for Implementation Section, Knowledge Resources in the original guideline document.

See USDA Dietary Guidelines for Americans:
http://www.healthierus.gov/dietaryguidelines/

USDA Food Pyramid: www.mypyramid.gov

Also see the NGC summaries of ICSI guidelines Prevention and Management of Obesity (Mature Adolescents and Adults), Lipid Management in Adults, Diagnosis and Treatment of Osteoporosis, and Hypertension Diagnosis and Treatment.

Evidence supporting this recommendation is of classes: B, C, D, M, R

Osteoporosis Screening

Key Messages:

- Assess and discuss risk factors for osteoporosis with all patients presenting for preventive health visits.
- Routinely record serial height measurements and observe for kyphosis.
- Recommend bone mineral density testing for patients at risk for osteoporosis.

Services

The ICSI guideline, Diagnosis and Treatment of Osteoporosis (see NGC summary) recommends assessing and discussing risk factors for osteoporosis, and its primary prevention, with all patients presenting for preventive health visits.

Record accurate serial height measurements with a stadiometer and observe posture for kyphosis. Patients with significant acquired kyphosis and/or height loss of one inch should have lateral vertebral assessment with dual x-ray absorptiometry (DXA) or thoracic and lumbar spine radiographs and bone density testing.

All women over age 65, as well as younger women at risk for osteoporosis and subsequent fracture should have bone mineral density testing (BMD) to further define their fracture risk and guide treatment.

Refer to the original guideline document for information on risk factors for osteoporosis.

Central site (spine, hip) bone-density testing is strongly recommended. There is not adequate data to recommend peripheral site (forearm, calcaneal) bone-density testing.

Counseling Messages

Counsel patients regarding osteoporosis prevention and treatment, emphasizing smoking cessation, regular load-bearing exercise, calcium and vitamin D supplementation.

Address pharmacologic options for prevention and treatment of osteoporosis with appropriate patients at risk for or who currently have signs and symptoms of osteoporosis.

References/Related Guidelines

Refer to the NGC summary of the ICSI guideline, Diagnosis and Treatment of Osteoporosis, for specific details regarding pharmacologic management and monitoring of patients with osteopenia or osteoporosis.

Evidence supporting this recommendation is of class: R

Tetanus-Diphtheria Immunization (Tdap)

Services

Adolescents and Adults through Age 64

With the licensure of Tdap (tetanus-diphtheria-acellular pertussis formulated for patients age 11 to 64), recommendations have changed.

Pertussis appears to be endemic in middle and high schools. Although mortality is very low in patients age 11 to 65 years, pertussis causes substantial morbidity in this age. Thus, the availability of a safe tetanus-diphtheria-acellular pertussis booster (Tdap) for adolescents and adults means it should be routinely given to these age groups. In most situations, Tdap will substitute for Td. Immunization should be provided to those who may expose infants less than six months of age, as these infants are the most vulnerable to the disease.

Tdap can be administered if at least 18 months since last Td-containing dose.

Given the epidemiology of the disease, the most important groups to immunize with Tdap are listed below. In these groups consider giving a Tdap if more than three years have elapsed since the last Td.

1. Middle and high school age patients
2. Others with high exposure to middle and high school age patients (teachers, health care workers, etc.)
3. Those who might expose infants less than six months of age to pertussis (postpartum, new parents, siblings of infants, day care workers, health care workers, etc.)

Primary Immunization of Adults Age 18-64

All adults should have completed a primary Td series. A complete series includes two 0.5 cc intramuscular doses given four weeks apart and a third dose given 6 to 12 months after the second dose. With the licensure of the adult Tdap, if possible, the first injection should be Tdap and the other two Td (Tdap is not tested or licensed as a repeated immunization).

For all adults, a 0.5 cc intramuscular booster dose is recommended every 10 years thereafter. Pregnancy is not a contraindication to immunization. See the NGC summary of the ICSI guideline Routine Prenatal Care for Td recommendations during pregnancy. Post partum immunization of women with Tdap is recommended if it has been at least three years since the last Td or 10 years since last Tdap or DTP.

A schedule of a single Td booster dose between 50 and 65 years has recently been considered cost effective, but evidence about the adequacy of protection against diphtheria with this approach is currently lacking.

Tdap can be administered if at least 18 months since last Td-containing dose.

Age 65 and Older

Patients age 65 and older should be given Td. It is likely that Tdap will be a valuable vaccine for the elderly, but studies of the vaccine in that age group have not been published.

With the licensure of the adult Tdap, one of the three injections should be Tdap and the other two Td (Tdap is not tested or licensed as a repeated immunization).

References/Related Guidelines

See the NGC summary of the ICSI guideline Immunizations.

Evidence supporting this recommendation is of classes: C, R

Varicella Immunization

Services

For adolescents and adults without evidence of immunity, give a dose of varicella vaccine followed by a second dose at an interval of at least 28 days.

Evidence of immunity to varicella includes:

- Documentation of age-appropriate varicella vaccination, which is one dose of vaccine for preschool-aged children 12 months or more of age and two doses of vaccine for school-aged children, adolescents, and adults
- History of health care provider diagnosis of varicella illness (if mild or atypical case, providers should seek epidemiologic link with a typical case or laboratory evidence obtained at the time of the illness)
- History of health care provider diagnosis of herpes zoster
- Serologic evidence of immunity or culture evidence of infection
- Born in the United States before 1980.

See also "Herpes Zoster/Shingles Immunization" section previously in this annotation.

References/Related Guidelines

See the NGC summary of the ICSI guideline Immunizations.

5a. Preventive Services for Which the Evidence Is Currently Incomplete (Level III)

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 on a patient-by-patient basis. 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.

Refer to the original guideline document for information on Level III services including

- Advance directives counseling
- Anxiety and stress counseling
- Clinical breast exam screening
- Dementia routine testing
- Dental and periodontal disease counseling
- Domestic violence and abuse screening and counseling
- Drug abuse screening and counseling
- Injury prevention screening and counseling
- Menopause and hormone therapy counseling
- Nutrition and physical activity counseling
- Preconception counseling
- Prostate specific antigen (PSA) screening and digital rectal exam (DRE) of the prostate
- Sexually transmitted infection (STI) (other than chlamydia) screening and counseling
- Skin cancer screening and counseling
- Unintended pregnancy prevention counseling

5b. Screening Maneuvers That Are Not Supported by Evidence (Level IV)

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

Refer to the original guideline document for information on Level IV services including

- Blood chemistry panels
- CA 125 and ultrasound (for ovarian cancer screening)
- Coronary heart disease (CHD) routine testing
- Diabetes routine testing
- Hemoglobin/hematocrit (for anemia screening)

- Thyroid-stimulating hormone (TSH)/thyroxine (for hypothyroidism screening)
- Tuberculin skin testing (routine)
- Urinalysis

Definitions:

Conclusion Grades:

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 of 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.

Classes of Research Reports:

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

CLINICAL ALGORITHM(S)

A detailed and annotated clinical algorithm is provided for Preventive Services for Adults.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is classified for selected recommendations (see "Major Recommendations").

In addition, key conclusions contained in the Work Group's algorithm are supported by a grading worksheet that summarizes the important studies pertaining to the conclusion. The type and quality of the evidence supporting these key recommendations (i.e., choice among alternative therapeutic approaches) is graded for each study.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Overall Benefits

Appropriate use of a comprehensive approach to the provision of preventive services, counseling, education, and disease screening for low-risk, asymptomatic adults as demonstrated by:

- Increased regular use of health risk assessments
- Increased percentage of patients with all Level I preventive services on time

POTENTIAL HARMS

Aspirin Chemoprophylaxis

Aspirin therapy has been associated with an increased rate of gastrointestinal bleeding and hemorrhagic stroke. Estimates of the magnitude of benefits and harms of aspirin therapy vary with an individual's risk for coronary heart disease (CHD).

Colorectal Cancer Screening

- Fecal occult blood testing (FOBT) is associated with high false-positive rate.
- Flexible sigmoidoscopy is associated with inability to visualize the entire colon.

CONTRAINDICATIONS

CONTRAINDICATIONS

ZOSTAVAX® should not be administered to individuals:

- With a history of anaphylactic/anaphylactoid reaction to gelatin or neomycin
- With a history of primary or acquired immunodeficiency states including leukemia lymphomas of any type, or other malignant neoplasms affecting the bone marrow or lymphatic system; or acquired immunodeficiency syndrome (AIDS) or other clinical manifestations of infection with human immunodeficiency viruses (see manufacturer warnings)
- On immunosuppressive therapy, including high-dose corticosteroids (> 20 mg/day for three months or longer)
- With active untreated tuberculosis
- Who are or may be pregnant

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- This clinical guideline is designed to assist clinicians by providing an analytical framework for the evaluation and treatment of patients, and is not intended either to replace a clinician's judgment or to establish a protocol for all patients with a particular condition. A guideline will rarely establish the only approach to a problem.

- This clinical guideline should not be construed as medical advice or medical opinion related to any specific facts or circumstances. Patients are urged to consult a health care professional regarding their own situation and any specific medical questions they may have.
- 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.
- It is the guideline development group's 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, the group does not expect that to be common and 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.
- 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
    - Counseling messages for those clinicians who want to provide such counseling or whose patients express an interest in receiving this information
- Evidence is insufficient to warrant recommendations for a number of preventive services. Refer to the original guideline document for more information (see "Guideline Availability" field in this summary).

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Once a guideline is approved for general implementation, a medical group can choose to concentrate on the implementation of that guideline. When four or more groups choose the same guideline to implement and they wish to collaborate with others, they may form an action group.

In the action group, each medical group sets specific goals they plan to achieve in improving patient care based on the particular guideline(s). Each medical group shares its experiences and supporting measurement results within the action group. This sharing facilitates a collaborative learning environment. Action group learnings are also documented and shared with interested medical groups within the collaborative.

Currently, action groups may focus on one guideline or a set of guidelines such as hypertension, lipid treatment, and tobacco cessation.

Detailed measurement strategies are presented in the original guideline document to help close the gap between clinical practice and the guideline recommendations. Summaries of the measures are provided in the National Quality Measures Clearinghouse (NQMC).

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. Develop a process that allows patients to complete a risk assessment questionnaire prior to preventive visits, and update as necessary. This questionnaire then becomes part of the medical record.
2. The results of the health risk assessment questionnaire are used to identify needs for counseling and other preventive services.
3. The provision of needed preventive services is documented and monitored.
4. Develop a process that identifies patients (routine office visits) behind in their preventive visit schedule and create a catch-up plan.
5. Develop a risk-assessment questionnaire that allows for easy identification of counseling needs.
6. Risk-assessment questionnaires should be in a consistent and easily accessible place in the patient's chart.

IMPLEMENTATION TOOLS

Chart Documentation/Checklists/Forms
Clinical Algorithm
Patient Resources
Pocket Guide/Reference Cards
Quality Measures
Resources

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

RELATED NQMC MEASURES

- Preventive services for adults: percentage of patients with all Level I preventive services on time according to the guideline delivery schedule.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Preventive services for adults. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2007 Oct. 87 p. [172 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1995 Jun (revised 2007 Oct)

GUIDELINE DEVELOPER(S)

Institute for Clinical Systems Improvement - Private Nonprofit Organization

GUIDELINE DEVELOPER COMMENT

Organizations participating in the Institute for Clinical Systems Improvement (ICSI): Affiliated Community Medical Centers, Allina Medical Clinic, Altru Health System, Aspen Medical Group, Avera Health, CentraCare, Columbia Park Medical Group, Community-University Health Care Center, Dakota Clinic, ENT Specialty Care, Fairview Health Services, Family HealthServices Minnesota, Family Practice Medical Center, Gateway Family Health Clinic, Gillette Children's Specialty Healthcare, Grand Itasca Clinic and Hospital, HealthEast Care System, HealthPartners Central Minnesota Clinics, HealthPartners Medical Group and Clinics, Hutchinson Area Health Care, Hutchinson Medical Center, Lakeview Clinic, Mayo Clinic, Mercy Hospital and Health Care Center, MeritCare, Mille Lacs Health System, Minnesota Gastroenterology, Montevideo Clinic, North Clinic, North Memorial Care System, North Suburban Family Physicians, Northwest Family Physicians, Olmsted Medical Center, Park Nicollet Health Services, Pilot City Health Center, Quello Clinic, Ridgeview Medical Center, River Falls Medical Clinic, Saint Mary's/Duluth Clinic Health System, St. Paul Heart Clinic, Sioux Valley Hospitals and Health System, Southside Community Health Services, Stillwater Medical Group, SuperiorHealth Medical Group, University of Minnesota Physicians, Winona Clinic, Ltd., Winona Health

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GUIDELINE COMMITTEE

Committee on Evidence Based Practice

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

In the interest of full disclosure, ICSI has adopted the policy of revealing relationships work group members have with companies that sell products or services that are relevant to this guideline topic. The reader should not assume that these financial interests will have an adverse impact on the content of the guideline, but they are noted here to fully inform readers. Readers of the guideline may assume that only work group members listed below have potential conflicts of interest to disclose.

Leif Solberg, MD receives grant support from Novartis and the Robert Wood Johnson Foundation.

Michael Maciosek, PhD receives grant support from the Robert Wood Johnson Foundation and Wellpoint Foundation.

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

ICSI's conflict of interest policy and procedures are available for review on ICSI's website at www.icsi.org.

GUIDELINE STATUS

Note: This guideline has been updated. The National Guideline Clearinghouse (NGC) is working to update this summary.

GUIDELINE AVAILABILITY

Electronic copies of the updated guideline: Available from the Institute for Clinical Systems Improvement (ICSI) Web site.

Print copies: Available from ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; Web site: www.icsi.org; e-mail: icsi.info@icsi.org.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Preventive services for adults. Executive summary. Bloomington (MN): Institute for Clinical Systems Improvement, 2006 Oct. 1 p. Electronic copies: Available in Portable Document Format (PDF) from the Institute for Clinical Systems Improvement (ICSI) Web site.
- Appendices A-C of the original guideline document provide various counseling and educational tools.
- ICSI pocket guidelines. April 2006 edition. Bloomington (MN): Institute for Clinical Systems Improvement, 2006. 298 p.

Print copies: Available from ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; Web site: www.icsi.org; e-mail: icsi.info@icsi.org.

PATIENT RESOURCES

The following is available:

- Preventive services for adults. Bloomington (MN): Institute for Clinical Systems Improvement, 2007 Oct. 55 p.

Electronic copies: Available in Portable Document Format (PDF) from the Institute for Clinical Systems Improvement (ICSI) Web site.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on May 5, 1999. The information was verified by the guideline developer on July 6, 1999. This summary was updated by ECRI on April 15, 2002, and March 14, 2003. The updated information was verified by the guideline developer on May 15, 2003. This summary was updated again by ECRI on March 22, 2004, November 10, 2004, December 30, 2005, January 25, 2007, and December 20, 2007.

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