



INSTITUTE FOR CLINICAL
SYSTEMS IMPROVEMENT

Health Care Guideline: Preventive Services for Children and Adolescents

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The information contained in this ICSI Health Care Guideline is intended primarily for health professionals and the following expert audiences:

- physicians, nurses, and other health care professional and provider organizations;
- health plans, health systems, health care organizations, hospitals and integrated health care delivery systems;
- medical specialty and professional societies;
- researchers;
- federal, state and local government health care policy makers and specialists; and
- employee benefit managers.

This ICSI Health Care Guideline should not be construed as medical advice or medical opinion related to any specific facts or circumstances. If you are not one of the expert audiences listed above you are urged to consult a health care professional regarding your own situation and any specific medical questions you may have. In addition, you should seek assistance from a health care professional in interpreting this ICSI Health Care Guideline and applying it in your individual case.

This ICSI Health Care 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. An ICSI Health Care Guideline rarely will establish the only approach to a problem.

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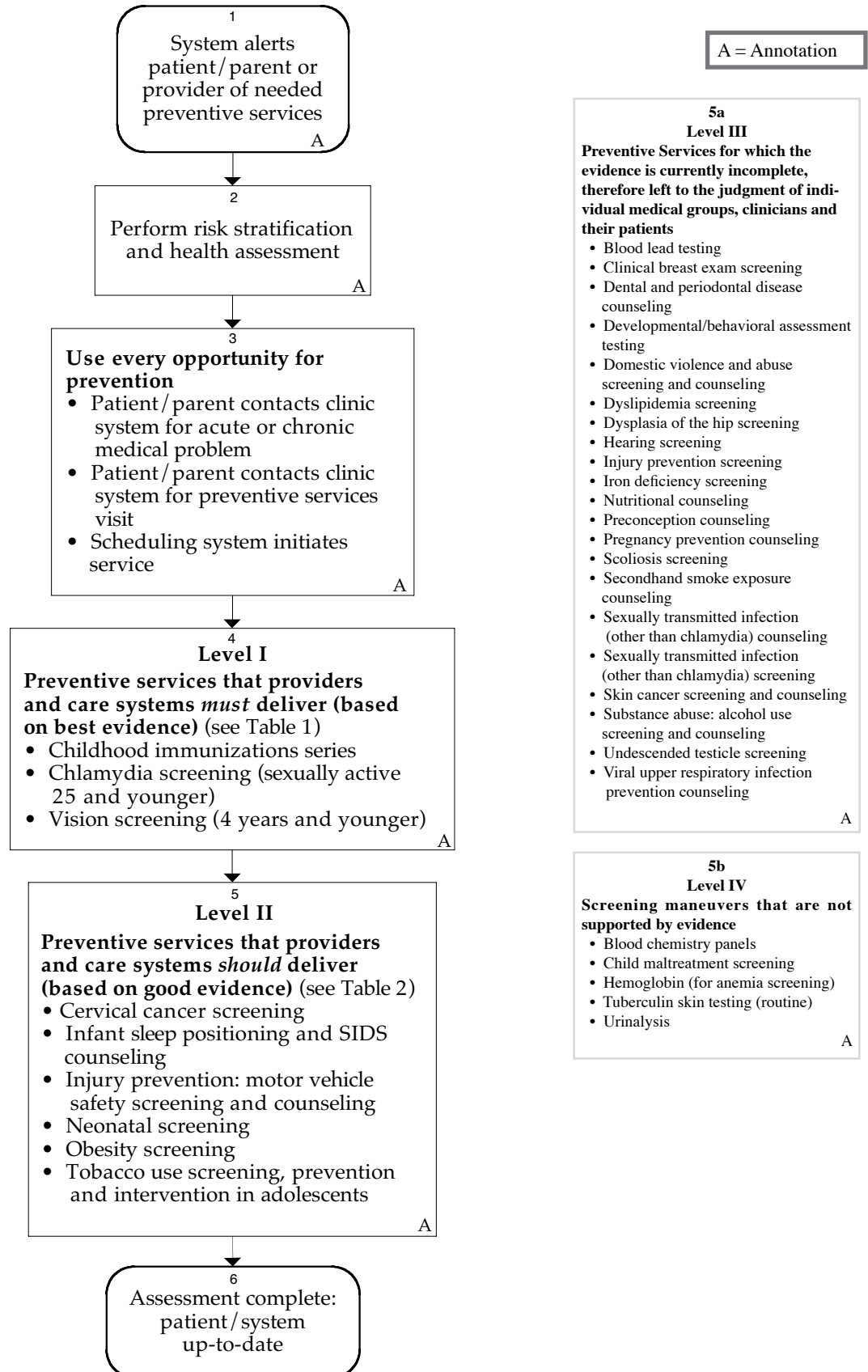


Table 1: Child Preventive Services That Providers and Care Systems *Must* Deliver (Based on Best Evidence) (Level I)

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.

Childhood Immunizations Series

Routine Immunization Schedule for Infants, Children and Adolescents

Vaccine	Birth	1 mo	2 mo	4 mo	6 mo	12 mo	15 mo	18 mo	24 mo	4-6 yr	11-12 yr	15-18 yr
DTaP			X	X	X	X				X	Tdap	
IPV			X	X		X				X		
MMR (MMRV)	Combined measles, mumps, rubella and varicella vaccine (MMRV) is preferred for children 12 months through 12 years of age over separate injection of equivalent component vaccines.					X				X		
Varicella						X			X		X, verify second dose completed	
Pneumococcal (PCV7)			X	X	X	X						
Hib			X	X	X	X						
Rotavirus			X	X	X							
Hep B Schedule 1	X	X			X							
Hep B Schedule 2		X		X	X							
Influenza					X (6-59 months annual-tiv)					X, annually	X, annually	
Hep A						X	X					
Meningococcal										X	X, if previously not received	
Human Papillomavirus										X (3-dose series)	X, (catch up if appropriate, 3-dose series)	

Please check manufacturer specifications for dosing, as all intervals may not be needed.

Service	0-2 years	2-6 years	7-12 years	13-18 years
Chlamydia Screening				All sexually active women aged 25 years and younger
Vision Screening	Recommended for children 4 years old and younger. By age 5, should be performed as part of preschool screening.			

Table 2: Child 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.

Service	0-2 years	2-6 years	7-12 years	13-18 years
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.
Infant Sleep Positioning and SIDS Counseling	Place infants to sleep on their back.			
Injury Prevention: Motor Vehicle Safety Screening and Counseling	Car seat when riding in a motor vehicle. Rear facing until 1 year and 20 pounds.	Car seat/booster seat/seat belt when riding in a motor vehicle.		
Neonatal Screening	Newborn metabolic screening performed prior to hospital discharge > 24 hours of age.			
Obesity Screening		Record height, weight and BMI annually		
Tobacco Use Screening, Prevention and Intervention in Adolescents	Establish tobacco use and secondhand exposure, offer tobacco cessation on a regular basis.			

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.

- Blood lead testing
- Clinical breast exam screening
- Dental and periodontal disease counseling
- Developmental/behavioral assessment testing
- Domestic violence and abuse screening and counseling
- Dyslipidemia screening
- Dysplasia of the hip screening
- Hearing screening
- Injury prevention screening
- Iron deficiency screening
- Nutritional counseling
- Preconception counseling
- Pregnancy prevention counseling
- Scoliosis screening
- Secondhand smoke exposure counseling
- Sexually transmitted infection (other than chlamydia) counseling
- Sexually transmitted infection (other than chlamydia) screening
- Skin cancer screening and counseling
- Substance abuse: alcohol use screening and counseling
- Undescended testicles screening
- Viral upper respiratory infection prevention counseling

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.

- Blood chemistry panels
- Child maltreatment screening
- Hemoglobin (for anemia screening)
- Tuberculin skin testing (routine)
- Urinalysis

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Foreword

Scope and Target Population

To provide a comprehensive approach to the provision of preventive services, counseling, education, and disease screening for average-risk, asymptomatic individuals from birth through age 18. There are occasional exceptions to this for high-risk populations where noted.

This guideline targets asymptomatic children seeking health care who would benefit from preventive services. This resource is intended to assist in the prioritization of screening maneuvers, testing 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 ICSI Prevention and Management of Obesity [Mature Adolescents and Adults] guideline) will take precedence during any further diagnosis and management.

Clinical Highlights and Recommendations

- All clinic visits – whether acute, chronic or for preventive service – are opportunities for prevention. Incorporate appropriate preventive services at every opportunity. (*Annotation #3*)
- Assess patients for risk factors at periodic intervals. (*Annotation #2*)
- Address or initiate child preventive services that providers and care systems *must* deliver (based on best evidence) (Level I). (*Annotation #4*)
 - Childhood Immunization Series
 - Chlamydia Screening
 - Vision Screening

Priority Aims

1. Increase regular use of health-risk assessments.
2. Increase the percentage of patients who are on time with recommended immunizations. See Table 1: Child Preventive Services That Providers and Care Systems *Must* Deliver (Based on Best Evidence) (Level I): Childhood Immunizations Series.
3. Reduce missed opportunities for administering immunizations.
4. Decrease the percentage of patients who are behind with recommended immunizations by creating a catch-up plan.
5. Increase the percent of sexually active female patients under the age of 25 who are screened for chlamydia.
6. Increase percentage of children age four years and younger who have had vision screening.

Key Implementation Recommendations

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

1. Develop a process that allows parents/guardians to complete a risk assessment questionnaire prior to periodic well-child 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 in the medical record 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 and monitoring of counseling needs.
6. Risk-assessment questionnaires should be in a consistent and easily accessible place, in the patient's chart.
7. Develop electronic data systems to track the immunization status of patients under the provider's care, with the capability to produce reminders and recalls of upcoming or overdue immunizations.
8. Remove barriers to immunization services.

Related ICSI Scientific Documents

Related Guidelines

- Immunizations
- Domestic Violence
- Routine Prenatal Care
- Diagnosis and Treatment of Respiratory Illness in Children and Adults
- Prevention and Management of Obesity (Mature Adolescents and Adults)
- Diagnosis and Treatment of Otitis Media in Children
- Initial Management of Abnormal Cervical Cytology (Pap Smear) and HPV Testing

Technology Assessment Reports

- Screening Tests (#9, 1993)
- Pediatric Visit Schedules: Impact on Morbidity and Utilization of Resources (#75, 2003)
- HPV DNA Testing for Cervical Cancer (#56, 2001)
- Cranial Orthoses for Deformatrenal Plagiocephaly (#82, 2004)
- Treatment of Obesity in Children and Adolescents (#90, 2005)
- Vision Therapy (#68, 2003)

Patient and Family Guidelines

- Diagnosis and Treatment of Otitis Media in Children for Patients and Families

Disclosure of Potential Conflict 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 Web site at <http://www.icsi.org>.

Introduction to ICSI Document Development

Each guideline, order set or protocol is developed by a 6- to 12-member work group that includes physicians, nurses, pharmacists and other health care professionals relevant to the topic, along with an 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.

Prospective work group members are asked to disclose any potential conflicts of interest relevant to the topic of the document; disclosure forms are reviewed for unacceptable conflicts. At the beginning of each work group meeting, the potential conflicts of interest that have been disclosed are reviewed by the work group.

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 literature citations.

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

Critical Review Process

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 needed 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 reviews and approves 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.

Document Revision Process

ICSI scientific documents are revised every 12-36 months as indicated by changes in clinical practice and literature. Every six 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 one to two 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.

Evidence Grading System

A. Primary Reports of New Data Collection:

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

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

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

Algorithm Annotations

Introduction

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

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

For pediatric care, the majority of preventive services are often centered around well-child visits. While these visits can serve as a framework for recommended interventions, it is important to recognize that any visit can be used as an opportunity for initiating preventive services. Because there is limited evidence for many interventions in pediatrics, those services that have direct evidence should be given highest priority. Other interventions and counseling should be done on a discretionary basis, determined by the risks and needs identified for that individual.

Organizing a Practice for Delivery of Preventive Services

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

Prioritization Among Preventive Services

Because there is a very large number of clinical preventive services, and because there are often insufficient time and resources to address all of them, the work group thought it would be useful to prioritize them. Therefore, they are ranked among those services with evidence of effectiveness, based upon the sum of their clinically preventable burden and cost-effectiveness.

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

This has allowed us to group services into four groups, based on evidence of effectiveness and priority ranking, as follows:

- | | |
|-----------|--|
| Level I | Preventive Services that providers and care systems <i>must</i> deliver (based on best evidence). (<i>Annotation #4</i>) |
| Level II | Preventive Services that providers and care systems <i>should</i> deliver (based on good evidence). (<i>Annotation #5</i>) |
| Level III | Preventive Services for that the evidence is currently incomplete. (<i>Annotation #5a</i>) |
| Level IV | Screening maneuvers that are not supported by evidence. (<i>Annotation #5b</i>) |

Algorithm Annotations

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.

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.

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.

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

Opportunity for Prevention

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

Counseling Services

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

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

Nevertheless, there is no question that the elimination of the unhealthy behaviors addressed in this document would significantly reduce morbidity and mortality in the general population. Modifiable health behaviors account for up to 50% of premature deaths in this country (*Flegal, 2005*). Furthermore, the main problem is the lack of good controlled trials of such counseling, not that there are trials showing mixed or no effects. Therefore, clinicians may choose to provide such counseling, even though we do not yet have a solid evidentiary basis for it.

See also Appendix A, "Counseling Messages."

Systematic Delivery of Care

Achieving the goal of most effectively providing preventive services requires a coordinated effort of the patient and all individuals providing care to that patient. Standing orders, task delegation, reminders and other automated systems are essential to ensuring the consistent delivery of preventive services. This guide should help support awareness of the needed preventive services for providers and can be a valuable resource

Algorithm Annotations

for understanding the evidence behind the services offered. We encourage all providers of health care to be aware of the services needed at each visit. Reliance on the individual clinician alone to recall services that are needed is not sufficient to provide consistent delivery of these needed interventions. It is not advisable to rely solely on any one individual to deliver preventive services.

Physical Exam

The Preventive Services work group has begun a more thorough analysis of the evidence surrounding the use of the physical exam during the provision of preventive services for children. In many areas, there is insufficient evidence surrounding individual components of the physical exam. There are expert recommendations supporting individual components, but study of these elements has been limited by several factors, including the technical difficulty of consistent performance of some exam components, the relative low frequency of the diseases that screening is searching for and lacking, inconclusive or inadequate evidence of the effectiveness of intervention. We have begun to break out individual components of the exam into a separate section of this document. We plan to expand that section in future revisions to more completely visit all of the components of physical examination. We recognize that changing these elements will be difficult for some providers and some patients. Therefore, we leave the inclusion of specific components to the desires of individual medical groups. We encourage medical groups to focus on the provision of services that clearly have strongest evidence supporting their delivery.

Prevention Visit Schedules

The work group acknowledges that there are many visit schedules offered by both national (i.e., American Academy of Pediatrics [AAP]) and local advisory bodies, such as the Minnesota Cover All Kids Coalition. It is important to note that there is a paucity of data to support any particular visit schedule. The federal government requires individual states to provide preventive services as part of their participation in federally funded health care programs. Each state is responsible for setting up its own recommended schedule. Most states use the American Academy of Pediatrics Recommendations for preventive pediatric health care as the basis for their requirements. Providers should take into consideration the frequency of required visits by their own individual state for this population as they design their system of care.

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.

Please see Appendix B, "Visit Schedule" for a sample of well child visits.

Supporting evidence is of classes: C, M

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

Clinics must determine some way 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 examples. 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 care 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

In order to provide these services, it is first necessary to know which services are needed by individual patients. This includes both knowing when the last services were provided and what risk factors are present. This information may be most efficiently collected through the use of questionnaires or automated means 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 once, though, 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.

References/related guidelines:

See the Support for Implementation section, Knowledge Resources: Preventive Risk Assessment Forms for sample forms.

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 mother of a 15-month-old patient calls, requesting an appointment for a sore throat; if not contraindicated, this would trigger the scheduler to ask patient about need for immunizations.
- A father of a five-year-old patient calls to schedule a routine visit during the fourth quarter of the year. The scheduler/receptionist could ask patient about flu shot status and facilitate the process for completion of this service.
- A new patient accesses the Internet to schedule a preventive service visit. The interactive system reminds patient to bring or arrange to have mailed his/her medical records. The system also presents an option to complete an automated health-risk assessment form.

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

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.

Algorithm Annotations

Childhood Immunizations Series

Routine Immunization Schedule for Infants, Children and Adolescents

Vaccine	Birth	1 mo	2 mo	4 mo	6 mo	12 mo	15 mo	18 mo	24 mo	4-6 yr	11-12 yr	15-18 yr
DTaP			X	X	X	X				X	Tdap	
IPV			X	X	X					X		
MMR (MMRV)	Combined measles, mumps, rubella and varicella vaccine (MMRV) is preferred for children 12 months through 12 years of age over separate injection of equivalent component vaccines.					X				X		
Varicella						X				X		
Pneumococcal (PCV7)			X	X	X	X						
Hib			X	X	X	X						
Rotavirus			X	X	X							
Hep B Schedule 1	X	X			X							
Hep B Schedule 2		X		X	X							
Influenza					X (6-59 months annual-tiv)					X, annually	X, annually	
Hep A						X	X					
Meningococcal										X		X, if previously not received
Human Papillomavirus										X (3-dose series)		X, (catch up if appropriate, 3-dose series)

Please check manufacturer specifications for dosing, as all time materials may not be needed.

Counseling messages

Educate parents to immunize children according to age-appropriate schedule.

References/related guidelines:

See the ICSI Immunizations guideline for current immunization schedules and annotations to the basic schedule above.

Chlamydia Screening

Services

Routine screening for chlamydia is recommended for all sexually active women aged 25 years and younger (*U.S. Preventive Services Task Force, 2001b; Centers for Disease Control and Prevention, 2002*).

Algorithm Annotations

Risk factors include:

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

Burden of suffering

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

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. Even under optimal conditions, however, condoms are not always efficacious in preventing transmission. Condom failures occur at an estimated rate of 10%-15% either as a result of product failure or as a result of incorrect or inconsistent use.

(Centers for Disease Control and Prevention, 2002; U.S. Preventive Services Task Force, 2001b)

Supporting evidence is of classes: A, R

Vision Screening

Service

Vision screening is recommended for children four years old and younger. Screening should be used to detect amblyopia, strabismus and defects in visual activity. By age five, vision screening should be performed in the clinic or school as part of preschool screening (*U.S. Preventive Services Task Force, 2004d*).

Efficacy

No direct evidence demonstrates that vision screening and early treatment in children leads to improved visual acuity and or other outcomes such as school performance. The U.S. Preventive Services Task Force concluded that effectiveness of screening in preschool children is supported by indirect evidence that screening is effective in identifying strabismus and amblyopia, treatment of strabismus and amblyopia is effective, and more intensive screening leads to improved visual acuity compared to usual screening (*U.S. Preventive Services Task Force, 2004d*). A single randomized control trial demonstrated that children randomized to more intensive screening between 8 and 37 months of age had a lower prevalence of severe amblyopia, and at 7.5 years of age lower prevalence of amblyopia after treatment (*Williams, 2001*).

A prospective study of two matched cohorts of over 700 preschool children each in Ontario found that 3% of children screened before entry to school had moderate to severe vision impairment (visual acuity 20/50 or greater) compared to 6% of children in the matched cohort screened 6-12 months later, indicating that effectiveness of treatment is approximately 50% (*Feldman, 1980*). Those found to have vision problems using the illiterate E screening instrument were referred to their family doctor.

Counseling messages

Normal objective vision screening performed at schools need not be repeated by clinics for average-risk, asymptomatic children (*Williams, 2001*).

Supporting evidence is of classes: A, B, 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.

Cervical Cancer Screening

Cervical cancer screening is considered a high-priority service for the general population of sexually active women, and thus it has been assigned to Level I for the adult population (see Preventive Services for Adults guideline). However, cervical cancer mortality is extremely low in adolescents and young women (less than 1 per 1,000,000) (*Centers for Disease Control and Prevention, 2006*), and there is no direct evidence that cervical cancer screening for adolescents is effective in preventing cancer. Therefore, screening has been assigned to Level II for adolescents, based upon indirect evidence of effectiveness and an expected small health benefit.

Service

All women should be screened for cervical cancer beginning at age 21 or three years after initiating sexual intercourse, whichever is earlier (*Saslow, 2002*). Screening should be performed every three years after three consecutive normal Pap smears over five years (*U.S. Preventive Services Task Force, 2003c; Sawaya, 2003*).

Human papillomavirus (HPV) testing may be used as an adjunct to Pap smear screening to help minimize unnecessary colposcopies and other interventions (*Solomon, 2001*).

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.

References/related guidelines

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

Supporting evidence is of classes: C, M, R

Infant Sleep Positioning and Sudden Infant Death Syndrome (SIDS) Counseling

Service

Ask how child is positioned for sleep. Inform parents of importance of back-sleeping position. Demonstrate the appropriate sleeping position when the patient is under medical care.

Efficacy

Stomach and side sleeping have been identified as a major risk factor for sudden infant death syndrome in various studies (*Taylor, 1996*). Since 1992, the frequency of stomach sleeping has decreased from over 70% to 20% in U.S. infants and in that time, the sudden infant death syndrome rate has decreased by over 50% (*American Academy of Pediatrics, 2005c*). Sudden infant death syndrome does continue to occur and there

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is evidence that some populations of patients (*Schlaud, 1999*) and some health care providers (*Bullock, 2004*) have not received adequate information about proper sleeping position. There is fair evidence that counseling about sleeping position and demonstration of appropriate sleeping position by health care providers increases the percentage of parents who choose to place their child in a back-sleeping position (*Colson, 2002; Schlaud, 1999*). Other modifiable environmental risk factors have been identified. This has led to further recommendations, including sleeping in the same room with parents but not in the same bed and the offering of pacifiers during sleep (*American Academy of Pediatrics, 2005c*). There has been concern expressed about the possible negative impact of pacifier use on breast-feeding and its known benefits for infants.

Burden of suffering

According to the annual summary of Vital Statistics: 2004, sudden infant death syndrome is one of five causes attributing to more than half of all infant deaths in 2002 (*Hoyert, 2006*). In 1993 an estimated 58% of infants in the United States were placed to sleep on their stomachs (*Taylor, 1996*). Infants who sleep on their stomachs or side are at increased risk for sudden infant death syndrome.

Counseling message

Infants should be placed on their back for sleep. Side sleeping is no longer recognized as an alternative position. Parents should be advised about the appropriate sleeping position starting in the newborn nursery. Health care workers should be careful to place babies on their back to demonstrate to parents the appropriate sleeping position. Continued work to educate all potential caregivers of infants should be supported.

Infant sleep surfaces should be firm and there should be no loose bedding or soft objects around the infant.

Parents should be encouraged not to smoke, as this has many important health benefits. Smoking during pregnancy has been shown to be associated with increased risk of sudden infant death syndrome (*American Academy of Pediatrics, 2005c*).

A proximate but separate sleeping environment and the use of pacifiers have been recommended (*American Academy of Pediatrics, 2005c*). These should be discussed with parents in the context of fully supporting breast-feeding.

Supporting evidence is of classes: C, D, M, R

Injury Prevention: Motor Vehicle Safety Screening and Counseling**Service**

Ask about the use of car seats, booster seats and seat belts in the family.

Ask about helmet use in motorcycle riders.

Efficacy

Modest benefits of counseling were found in some studies for seat belt and car seat use. This benefit was most efficacious for intensive counseling sessions (*Moyer, 2004*). There is generally little information from clinical studies on the ability of physicians to influence patients to refrain from driving while intoxicated. Recommendations urging physicians to counsel patients to use occupant restraints have been issued by a number of organizations. Since motor vehicle injury represents one of the leading causes of death in the U.S. and years of potential life lost, interventions of even modest effectiveness are likely to have enormous public health implications (*U.S. Preventive Services Task Force, 1996a*).

A recent study found that child safety seats are more effective than lap-shoulder safety belts for children ages two to three years, when seated in the rear. The study also concluded that laws requiring child safety seats for children younger than four years have a sound basis and recommend they remain in force (*Zaloshnja,*

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2007). Another study on children ages two through six years was conducted for effectiveness on child restraint systems over seat belt use alone. The study's data indicated a 21% reduction in mortality risk for children two years through six years when a child restraint system was used over seat belts. The study recommends continued promotion of child restraint systems through laws and with education and disbursement programs (Elliott, 2006).

Burden of suffering

Injuries are the fifth leading cause of death in the U.S. and the leading cause of death in persons under the age of 45. Motor vehicle injuries account for about half of these deaths. Motor vehicle injuries are the leading cause of death in persons aged 15-24 (U.S. Preventive Services Task Force, 1996a).

Approximately 80% of Americans use seat belts (Minnesota Office of Traffic Safety, 2005). Use of occupant protection systems has been shown to reduce the risk of motor vehicle injury by about 40% to 50%. It has been estimated that the proper use of lap and shoulder belts can decrease the risk of moderate to serious injury to front seat occupants by 45%-55% and can reduce crash mortality by 40%-50%. Alcohol is involved in about 40% of fatal motor vehicle crashes. The proportion of fatally injured drivers having illegally high blood alcohol concentrations is highest for those aged 21-44.

Child safety seats appear to be effective. It has been reported that unrestrained children are over 10 times as likely to die in a motor vehicle crash than are restrained children, although these data come from studies with important design limitations. Other studies suggest that child safety seats can reduce serious injury by 67% and mortality by 71%. Child restraints may also reduce noncrash injuries to child passengers by preventing falls both within and out of the vehicle (U.S. Preventive Services Task Force, 1996a). Belt-positioning booster seats have been shown to decrease the risk of injury by 59% in children aged 4-7 years (Durbin, 2003). In 2006 a study was published around cost-outcomes for booster seats and children ages four to seven years old. The study found that belt positioning booster seats offer a sound return on investment. They recommend seat use laws should be passed, publicized and enforced (Miller, 2006).

By wearing safety helmets, persons who operate or ride on motorcycles can reduce their risk of injury or death from head trauma in the event of a crash. Head injury rates are reduced by about 75% in motorcyclists who wear safety helmets (U.S. Preventive Services Task Force, 1996a).

Counseling messages**Age Group****Counseling messages****Birth-9 Years**

- Install and use federally approved child safety seats.
- Discuss the fact that infants should face the rear of the vehicle until they are both 1 year of age and 20 lbs, and should not be placed in any seat with an air bag. (Best: middle rear seat) (American Academy of Pediatrics, 2002).
- All children under 4 years of age must ride in appropriate car seat.
- Discuss the fact that children between 4 and 9 years and weighing less than 80 pounds should be in a belt-positioning booster seat (American Academy of Pediatrics, 2002).

All Individuals

- Discuss always wearing a safety belt when driving or riding in a car (Minnesota Statute 169.686). Discuss the fact that 50% of death and disability from motor vehicle accidents can be prevented when passengers routinely wear seat belts (U.S. Preventive Services Task Force, 1996a).
- Do not drive or ride in a motor vehicle when the driver is under the influence of alcohol or drugs.
- Discuss the fact that passengers should not ride in cargo areas of any vehicle.
- The safest way to travel is to ensure that EVERYONE in the vehicle is correctly buckled up and that all children under age 13 ride in the back seat.

- For air bag safety, drivers should try to maintain at least 10 inches between themselves and the steering wheel. Front passenger seats should be moved as far back as possible (Minnesota Department of Public Safety).
- Motorcycle riders should always wear helmets to reduce the risk of head injury.

Supporting evidence is of classes: B, C, M, R

Neonatal Screening

Service

Metabolic screens and other interventions in the first week of life should be performed according to state law.

Efficacy

Newborn metabolic screening is designed to detect infants with inborn errors of metabolism. Early identification in many cases can avert a poor outcome for a child with various interventions depending on the condition. Approximately 4,000 infants per year are identified with a condition through the newborn metabolic screening program. Each state varies on the test required to be done by law, but a uniform approach with all states using mass spectrometry is being promoted by various national groups (<http://www.mchb.hrsa.gov/screening>).

Counseling message

All infants should receive a newborn metabolic screening test prior to hospital discharge, ideally when greater than 24 hours of age. Infants who receive screening before 24 hours of age should receive a repeat test before the second week of age (*American Academy of Pediatrics, 2000d*).

System alerts should provide notice of positive results. Appropriate follow-up services must be provided for any child with a positive test.

Supporting evidence is of class: R

Obesity Screening

Service

Record height, weight and body mass index annually beginning at age two as part of a normal visit schedule. Monitor body mass index.

Efficacy

The U.S. Preventive Services Task Force concluded there was "insufficient evidence to recommend for or against routine screening for overweight in children and adolescents." However, in a separate summary article they noted, "Because existing trials report modest short- to medium-term improvements (~10-20% decrease in percentage of over weight) overweight improvements among children and adolescents seem possible (*Whitlock, 2005*). They found "fair" evidence that body mass index is a reasonable measure for identifying those who are overweight (*U.S. Preventive Services Task Force, 2005b*). See Appendix C, "Body Mass Index-for-Age Percentiles."

The ICSI Prevention and Management of Obesity (Mature Adolescents and Adults) guideline recommends measuring height, weight and body mass index annually. This guideline also recommends addressing weight maintenance for those with body mass index in the normal range (18.5-24.9) because a substantial proportion may become overweight in the future. Children with body mass indexes in the overweight range were about five times more likely to become overweight as adults. Those in the obese range were up to 20 times more likely to be overweight. Among boys, an elevated body mass index was also a predictor of hypertension in young adulthood (*Field, 2005*). Overweight and obesity during childhood were found to be strong

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predictors of obesity and coronary heart disease risks in young adults who were part of the Bogalusa Heart Study (Janssen, 2005).

Plotting body mass index to note trends in weight change above or below the growth chart is recommended by the U.S. Department of Health and Human Services (2005) and could be started at two years. For children below the 85th percentile, encourage wholesome eating and activity and reevaluate annually. Those between the 85th and 95th percentiles are considered overweight (rather than obese; however, obesity is a billable code, overweight is not). Further medical screening and behavioral management should be considered (Himes, 1994); body mass index is not a precise indicator of the proportion of fat and lean tissue (Demerath, 2006).

There is general consensus that energy expended in physical activity has the potential to affect energy balance and weight regulation. There is some evidence that physical activity can minimize weight gain (Jakicic, 2002) and it reduces obesity-associated comorbidities, especially glucose intolerance and hyperlipidemia (Kang, 2002; Roberts, 2003). However, physical activity alone cannot be expected to overcome unwholesome eating habits. Both must be balanced to prevent excessive weight gain.

Additional topics receiving notice include soft drinks, portion sizes and television viewing or other sedentary activities. Decreasing caloric soft drink consumption can have a beneficial effect on body weight (Ebbeling, 2006) and adolescents still obtain about half of their beverages at home (French, 2003), where there could be parental oversight. Television viewing not only affects lack of activity but it also communicates behaviors related to food and diet that may not be wholesome (Eisenmann, 2002).

Counseling messages

Encourage wholesome eating and physical activity.

2-18 years**Encourage**

- Consumption of fruits, vegetables, whole grains and low-fat dairy products
- Limiting total fat, especially saturated, trans fats and cholesterol
- Daily participation of 30-60 minutes of moderate to vigorous physical activity appropriate for age
- Regular meals

Discourage

- Foods with added sugars
- Sweetened beverages
- Television and video games; limit to one hour per day

(U.S. Department of Health and Human Services, 2005)

References/related guidelines

<http://www.heathierus.gov>

http://www.cdc.gov/healthyyouth/physicalactivity/promoting_health/#download

<http://www.mypyramid.gov>

Knowledge Resources section, "Resources Available"

ICSI's Technology Assessment Report on Treatment of Obesity in Children and Adolescents

ICSI's Prevention and Management of Obesity (Mature Adolescents and Adults)

Supporting evidence is of classes: A, B, D, M, R

Tobacco Use Screening, Prevention and Intervention in Adolescents

Service

Establish tobacco use and secondhand smoke exposure and reassess at every opportunity. (See section on Secondhand Smoke Exposure.)

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

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

The key components of successful tobacco cessation interventions are to:

- Ask about tobacco use and smoke exposure at every opportunity.
- Advise all users to quit.
- Assess willingness to make a quit effort.
- Assist users' willingness to make a quit attempt.
- Arrange follow-up.

Efficacy

Tobacco use is the single most preventable cause of death and disease in our society. There is good evidence that tobacco cessation interventions are best carried out when the entire clinical staff is organized to provide these services. The recommended clinical intervention incorporates the scientifically based concept of readiness stages for behavior change. It appears that these stages can focus the clinician message and make it more effective and feasible (*Fiore, 2000; U.S. Preventive Services Task Force, 2003b; Prochaska, 1992*).

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. The success of this approach in the adult population has led to the adoption of the same approach in the pediatric population. [*Conclusion Grade II: See Conclusion Grading Worksheet A – Annotation #5 (Smoking Cessation Counseling)*]

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

The U.S. Public Health Service guideline cites a review of adolescent cessation programs in a variety of settings and concluded that such programs produce quit rates that exceed naturally occurring quit rates. In contrast, the U.S. Preventive Services Task Force found "little evidence addressing the effectiveness of screening and counseling children and adolescents to prevent the initiation of tobacco use and to promote its cessation in a primary care setting, but clinicians may use their discretion in conducting tobacco-related discussions with this population, since the majority of adult smokers begin tobacco use as a child."

(*Fiore, 2000; U.S. Preventive Services Task Force, 2003b; Prochaska, 1992*)

Counseling message

For children and adolescents aged 10 years and above and the child or adolescent is using tobacco:

- Emphasize short-term negative effects of tobacco use.
- Advise tobacco users to quit.
- Assess user's willingness to make a quit attempt.

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- 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. Offer phone line for more assistance.
- Arrange follow-up to occur soon after the quit date.

For all ages:

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

Supporting evidence is of class: R

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.

Blood Lead Testing

Service

The work group does not recommend blood lead screening for average risk children. It does recognize federal requirements made on providers.

Per the U.S. Preventive Services Task Force, routine screening for elevated blood lead levels in asymptomatic children aged one to five who are at average risk is not recommended. The U.S. Preventive Services Task Force found insufficient evidence to recommend for or against screening in asymptomatic children aged one to five who are at increased risk (*Rischitelli, 2006; U.S. Preventive Services Task Force, 2006c*).

The guideline from the Centers for Disease Control and Prevention (1997) endorses universal screening at age one and two years and children 36-72 months of age who have not been previously screened, if they meet one of the following criteria:

- Child resides in areas with greater than 27% of the housing built before 1950
- In populations where the percentage of one and two year olds with elevated blood lead levels greater than 12%
- Child receives services from public assistance for the poor, such as Medicaid or women, infants and children;
- For children in other areas, the Centers for Disease Control and Prevention recommends targeted screening based on risk assessment. See counseling message below.

The Centers for Disease Control and Prevention recommends that each state develop a statewide plan that would supersede the Centers for Disease Control and Prevention's general recommendation. Contact the state department of health or local public health agency for more information on screening recommendations for your area and follow-up of positive results.

Algorithm Annotations

Efficacy

Two cost-effectiveness analyses have been published that support the switch from targeted to universal blood lead testing at a community prevalence of 12%-14% (children with elevated blood lead level greater than 12%) (*Kemper, 1998; Briss, 1997*).

Burden of suffering

Childhood lead poisoning is a serious preventable environmental health problem in the U.S. It is currently estimated that some 890,000 U.S. children have blood lead levels greater than or equal to 10 micrograms/dL (*Briss, 1997*).

Blood levels as low as 10 ug/dL have been associated with harmful effects on a child's ability to learn. Very high levels greater than 70 ug/dL can lead to seizures, coma and death.

Because the risk for childhood lead exposure varies widely, the recommendation for screening efforts should be targeted to children at elevated risk for exposure.

Counseling message

Initial blood lead screening, which can consist of a capillary blood lead test, should be done at around one and two years of age and for children up to six years of age who have not previously been screened if parent or guardian answers "yes" or "don't know" to the following questions:

- a. During the past six months, has the child lived in or regularly visited a home, child care or other building built before 1950? This question could apply to a facility such as a home day care center or the home of a babysitter or relative.
- b. During the past six months has the child lived in or regularly visited a home, child care or other building built before 1978 with recent or ongoing repair, remodeling or damage (such as water damage or chipped paint)?
- c. Has the child or his/her sibling, playmate or housemate had an elevated blood lead levels?

References/related guidelines

<http://www.cdc.gov/nceh/lead/guide/guide97.htm>

<http://www.ahrq.gov/clinic/uspstf/uspstflead.htm>

Supporting evidence is of classes: M, R

Clinical Breast Exam Screening

Efficacy

Evidence is insufficient to recommend for or against routine clinical breast exam alone to screen for breast cancer (*U.S. Preventive Services Task Force, 2002b*).

References/related guidelines

See the ICSI Diagnosis of Breast Disease guideline.

Supporting evidence is of class: R

Dental and Periodontal Disease Counseling

Service

Ask about dental hygiene practices in the home.

Algorithm Annotations

Efficacy

The effectiveness of clinician counseling in affecting dental outcomes has not been adequately evaluated (Moyer, 2004). Fluoride supplementation is recommended, but outcome evidence is limited (Moyer, 2004).

Counseling messages

Age Group Counseling and Education Messages

- | | |
|----------------------|--|
| Birth-2 years | <ul style="list-style-type: none">• Discourage the practice of putting infants and children to bed with a bottle.• Encourage women to breast-feed.• Encourage healthy eating habits to reduce the risk of dental caries.• Supplement with .25 mg/dl fluoride starting at six months if water source is less than .3ppm. |
| 2-18 years | <ul style="list-style-type: none">• Encourage regular dental visits.• Encourage brushing teeth daily with fluoridated toothpaste and flossing.• Encourage healthy eating habits to reduce the risk of dental caries. |

Children at high risk for dental caries should be referred to the appropriate health care source.

Supporting evidence is of class: R

Developmental/Behavioral Assessment Testing

Service

Perform developmental and behavioral assessment of infants and children at well-child visits.

Efficacy

Developmental assessment can be broken into several major categories including motor skills, language development and social development. Analysis of these different areas has been limited in the past.

Language development

The U.S. Preventive Services Task Force has recently completed an analysis of the data surrounding screening for speech and language disorders for children under five years of age (Nelson, 2006). The evidence analysis showed that there were many screening instruments available, but that there was insufficient evidence to show which instrument was the best to use. There was not evidence to support the strategy of identifying any specific risk factors to target intervention. There was fair to good evidence that intervention can be helpful in the short term in both the two- to three-year and the three- to five-year age groups. There was insufficient evidence about interventions in the age groups under two years. There were not any studies that showed effectiveness of intervention over the long term. There were not any studies to look at the potential harms of screening (Nelson, 2006).

Social development

Amongst health care providers and the public, there is increasing concern with disorders of social development (Autistic Spectrum disorders) (Barbarese, 2006). There has been recent research into screening for these disorders because of the general consensus and fair evidence that early intervention, particularly with behavioral therapy, leads to improved outcomes (Eikeseth, 2002; Barbarese, 2006). There is still a lack of higher-quality research studies to support this conclusion (Rogers, 1998). The result of the research done on screening has shown a variability of specificity and sensitivity of screening instruments and questions. There have not been enough high-quality studies to support the use of a particular methodology (Rydz, 2005; Rydz, 2006; Mawle, 2005). There is expert opinion that longitudinal surveillance with some structured

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methodology of assessment is the best tool available at this time to detect this problem based on current evidence (Rydz, 2005; Rydz, 2006). This approach, however, has not been well studied. Many experts have raised concerns that there may need to be more encounters with patients between 9 and 36 months of age to provide assessment for these issues than are currently included in various preventive services schedules. The nature and type of encounter is subject to much debate. Some studies have pointed to evaluation by individuals of different levels of training other than physicians may be able to be part of the developmental screening process (Johnson, 2006). But these studies are not adequate to make a particular recommendation. Research into these areas continues and hopefully will lead to the clearer definition of a more precise and effective screening or surveillance strategy. Research into intervention should continue, as well, to better define the optimal treatment strategy. The work group suggests considering that longitudinal surveillance by a health care provider with some structured screening methodology is the best available approach at this time, though the available research does not support the use of any specific screening tool or question at this point.

Burden of suffering

Speech and language delay has been shown to affect 5%-8% of preschool age children (Nelson, 2006). Developmental delay or behavioral disorders have estimated to affect 12%-16% of children (American Academy of Pediatrics, 2001b). The frequency of Autistic Spectrum disorders is six per 1,000 (Hirtz, 2007).

Counseling message

Routine screening for problems with development can allow for early identification of developmental issues. Early intervention has been proposed by multiple authors as important to supporting children with developmental delay. The components of developmental surveillance include eliciting and addressing parental concerns, obtaining a relevant developmental history, observation of the child in the office and proper referrals when necessary. Specific developmental and behavioral screening tools should be administered at the discretion of the provider to identify children who need more comprehensive evaluation. There have been no specific studies as to the frequency of evaluation for developmental concerns, although several groups support frequent screening on various schedules (American Academy of Pediatrics, 2006).

References/related guidelines

Centers for Disease Control and Prevention, Child Development tools:

<http://www.cdc.gov/ncbddd/child/tools.htm>

Supporting evidence is of classes: C, M, R

Domestic Violence and Abuse Screening and Counseling**Service**

Take a violence history by asking the following questions:

- When you and your partner argue, are there ever any put-downs or name-calling?
- Is your partner ever extremely jealous?
- Does your partner ever control who you see, how you spend money, where you go?
- Have you ever been hit, pushed, restrained or choked during an argument?
- Ask males age 15-24 about previous violent behavior, current drug/alcohol use, availability of guns.

Algorithm Annotations**Efficacy**

Insufficient evidence exists to recommend for or against screening of parents or guardians for the physical abuse or neglect of children (*U.S. Preventive Services Task Force, 2004b*).

Studies show that patients favor inquiries about abuse, believe that doctors can help with these problems and will share this information if asked directly (*Friedman, 1992; Hamberger, 1992*).

Counseling messages

The medical community is uniquely positioned to play an important role in the prevention of violence and abuse in children. Employers can also contribute to prevention ideas and programs. Clinicians should also be alert for symptoms and signs of drug abuse and dependence, various presentations of family violence, and suicidal ideation in persons with established risk factors. There must also be sensitivity to cultural differences in values and behavioral norms across the many ethnic and racial groups in the area (*U.S. Department of Health and Human Services, Public Health Service, 1991*).

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

References/related guidelines

See the ICSI Domestic Violence guideline.

Supporting evidence is of classes: D, R

Dyslipidemia Screening**Service**

Cholesterol testing is recommended for children over the age of two years at increased risk for the genetic forms of hypercholesterolemia (familial hyperlipidemia [FH] and others). Routine cholesterol screening in low-risk children and adolescents is not indicated. Once a child or adolescent has been screened between the ages of 2 and 20 years, he or she does not require repeat screening. There is some criticism about these guidelines in the literature, identifying the lack of studies in children and inconsistency between this guideline and the recommendations for adults from the American College of Physicians (*Newman, 2000; American College of Physicians, 1996*).

Measurement of a nonfasting serum total cholesterol is recommended for children and young adults who have either a parent or grandparent with a history of cardiovascular disease (CVD), peripheral vascular disease, or cerebrovascular disease prior to the age of 55, or a parent with a cholesterol level greater than 240 mg/dL. For children whose parental history is unobtainable, particularly for those with other risk factors, physicians may choose to measure cholesterol levels (*AAP Committee on Nutrition 1998; National Cholesterol Education Program, 1991*).

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A total cholesterol of 200 mg/dL or greater is the cutoff for individuals at risk for familial hyperlipidemia and warrants a fasting lipoprotein analysis. Individuals with a low-density lipoprotein greater than or equal to 164 may have familial hyperlipidemia and require further evaluation (*Gillman, 1992; Kwiterovich, 1989; Mogadam, 1990*). Further evaluation of children and young adults with borderline high total cholesterol levels (170 to 199 mg/dL) is also recommended (*National Cholesterol Education Program, 1991; AAP Committee on Nutrition, 1998*).

Efficacy

There are many risk factors for the development of cardiovascular disease; cholesterol is just one of these. Universal cholesterol screening has not been shown to be an effective or efficient means of identifying individuals at risk for development of cardiovascular disease (*National Cholesterol Education Program, 1991; U.S. Preventive Services Task Force, 2001c*). Familial hyperlipidemia is amenable to screening. Nearly all children with familial hyperlipidemia have a first-degree relative with either a history of a cardiovascular disease event at an early age or a history of a serum total cholesterol greater than or equal to 240 mg/dL (*Starc, 1991*). Children with familial hyperlipidemia have been shown to have blood vessel changes consistent with early atherosclerosis (increased carotid artery intima-media thickness) at a young age, and treatment with statins causes regression of this finding in affected children (*Rodenburg, 2004*). Other studies have also demonstrated that statin therapy is safe and effective in children with familial hyperlipidemia (*Wiegman, 2004*).

Children and young adults with elevated cholesterol who do not meet the criteria for familial hyperlipidemia do require further testing and possible dietary modification (*American Academy of Pediatrics, 1998*). Dietary intervention has been shown to be safe at reducing low-density lipoprotein-cholesterol levels in pubertal children, although the effect was modest (*DISC Collaborative Research Group, 1995*). Several studies have shown that children and adolescents with high cholesterol are likely to have high levels as adults, without treatment (*Freedman, 1985; Lauer 1988*). However, in another study a substantial number of individuals with high cholesterol levels in childhood have had normalization of their levels without intervention (*Lauer, 1990*).

There have been several studies that have determined that the parent history screening criteria are ineffective in identifying all children at risk for hypercholesterolemia (*O'Loughlin, 2004; Resnicow, 1993; Starc, 1991*). The work group recognizes that the American Academy of Physicians selective screening recommendation is problematic, but also acknowledge the need to try to identify children and adolescents who are at high risk for the complications of hypercholesterolemia.

Burden of suffering

Hypercholesterolemia is one of the most frequently identified cardiovascular disease risk factors in childhood, with 14%-25% of children in the United States reported to have borderline or high levels (*Dennison, 1990; National Cholesterol Education Program, 1991*). Most cases of elevated cholesterol in childhood are the result of environmental factors (dietary excess of saturated fat and cholesterol, inactivity, obesity, cigarette smoking, medication), expressed within a framework of genetic susceptibility (*Williams, 1995*). A smaller number of these children has secondary hypercholesterolemia (liver, kidney or thyroid disorders) or a genetic hypercholesterolemia condition, such as familial hyperlipidemia. Familial hyperlipidemia has an autosomal dominant pattern of inheritance and can be diagnosed at any age. Patients with this condition have total cholesterol levels greater than 240 mg/dL (average 300 mg/dL) and low-density lipoprotein levels greater than 160 mg/dL (average 240 mg/dL). Tendon xanthomas often develop in the second decade of life. Familial hyperlipidemia occurs in about 0.2% of the population, and people with this condition have a 50% risk for a major coronary event by age 50 (*Kwiterovich, 1989; Park, 2002*).

Supporting evidence is of classes: A, B, C, D, R, X

Dysplasia of the Hip Screening

Service

Developmental dysplasia of the hip describes an abnormal relationship between the head of the femur and the acetabulum of variable degrees of severity. The proper relationship between these two structures allows normal hip development. Screening for disorders of the hip can be performed by physical examination or radiologic tests. The recommendations for screening vary among different sources. In 2000, a clinical practice guideline was produced by the American Academy of Pediatrics supporting universal physical exam screening of the hip by "a properly trained health care provider," with follow-up by an orthopedic surgeon if there was clinical suspicion of developmental dysplasia of the hip. They specifically recommended against the use of ultrasound as a screening tool in otherwise normal infants. High-risk patient populations were defined (*American Academy of Pediatrics, 2000b*). In 2006, the U.S. Preventive Services Task Force stated the "evidence is insufficient to recommend routine screening for developmental dysplasia of the hip as a means to prevent adverse outcomes" (*U.S. Preventive Services Task Force, 2006b*).

Efficacy of screening

Screening of the hip for dysplasia consists of two physical examination techniques: the Ortolani and Barlow tests. These tests attempt to determine instability of the hip by provocative maneuvers. Details of these tests are outlined in the American Academy of Pediatrics guideline (*Committee on Quality Improvement, 2000*). They are more sensitive at a young age. Later in infancy, other physical exam findings can show evidence of abnormal hip position, including limited abduction of the hip and asymmetry of thigh folds and leg length discrepancy. The presence of these later signs is variable. A child may not present with abnormality until he or she begins to walk. There is concern expressed on the part of the U.S. Preventive Services Task Force that there is a lack of data on the sensitivity and specificity of these tests (*Shipman, 2006*). Ultrasound has been shown to be very sensitive in detecting abnormalities of the hip. Both parties agree that routine screening with ultrasound is not supported by the evidence because it may identify patients who do not need treatment. The U.S. Preventive Services Task Force raised specific concerns about the lack of evidence surrounding the natural course of the disease process. They felt that it may be likely that hip abnormalities will resolve on their own over time. They cited some evidence supporting this; however, the studies in question were somewhat flawed as they excluded patients who subsequently developed frank dislocation, which is the most severe manifestation of the disease process, and the age at which they were assessed was variable (*Shipman, 2006*).

The difficulty in the analysis of the natural course of the disease is that though there is no direct evidence that screening improves outcomes, there is fair quality evidence that late presenting disease has been shown to have worse outcomes (*Shipman, 2006*). Thus, leaving the population unscreened could leave those patients with disease who are not detected based on clinical presentation at risk for more complications.

Efficacy of intervention

There are two main interventions for the hip with developmental dysplasia. A nonoperative intervention is the Pavlik Harness, which holds the hip in a position of stable abduction and flexion. More severe disease and disease that does not resolve with nonoperative intervention may require surgery. In the era of routine screening, there have been studies to show decreased incidence of operative intervention. The U.S. Preventive Services Task Force states that the evidence is unclear as to whether this decrease is due to early detection or other factors. The evidence review states that the evidence of effectiveness of nonsurgical interventions is limited because of a lack of comparison to no intervention (*Shipman, 2006*). They also raised concerns about the occurrence of avascular necrosis of the femoral head (AVN) as a consequence of both surgical and non-surgical interventions. There was a high variability of the occurrence of this complication in the studies cited. There was limited and weak evidence showing that avascular necrosis of the femoral head would not occur in the natural course of the disease if left untreated. There were several other possible

Algorithm Annotations

adverse outcomes of screening listed, but evidence supporting these as actual problems was weak or not found at all (*Shipman, 2006*).

Recommendation

The previous American Academy of Pediatrics recommendation was for universal screening of all infants using serial physical examination, with further evaluation by an orthopedic surgeon if abnormalities were discovered. The U.S. Preventive Services Task Force made a specific alteration to the I (insufficient to recommend for or against) rating, stating "that evidence is insufficient to recommend routine screening for developmental dysplasia of the hip in infants as a means to prevent adverse outcomes." It is the feeling of our committee that the evidence of potential harm is less conclusive than was expressed in the U.S. Preventive Services Task Force report. We also feel that the evidence for screening is not of high enough quality to recommend for universal screening. Therefore, we would leave this recommendation in the Level III category and allow individual providers to determine the value of screening on the basis of personal skill and risk factors. We would encourage better quality studies to more clearly establish the efficacy of treatment and the value of universal screening.

Supporting evidence is of classes: M, R

Hearing Screening**Service**

It may be useful to ask about problems in these areas at any age and to use the answers and any indications as reasons for objective testing (*U.S. Preventive Services Task Force, 1996g*).

Efficacy

There is insufficient evidence to recommend newborn hearing screening by any method (*U.S. Preventive Services Task Force, 2001a*). Screening for asymptomatic hearing impairment beyond age three is not recommended, although thorough follow-up should be provided of potential cases identified by symptoms or through school-based screening programs (*U.S. Preventive Services Task Force, 2001a*).

The U.S. Preventive Services Task Force found insufficient evidence of effectiveness to recommend universal newborn hearing screening. Only retrospective studies with significant methodologic flaws have concluded that hearing screening improves long-term language outcomes. Due to low prevalence of sensor neural hearing loss, false-positive rates are very high. Roughly 95% of positive tests are false-positives. Although benefits of screening other than language skills are plausible, the U.S. Preventive Services Task Force found no evidence that any benefit exists to balance the harm of false-positives.

After age three, undetected hearing problems are rare, and the majority of cases can be identified by thorough examination of children with otitis media with effusion. As with newborns, there is insufficient evidence on the effectiveness of early detection in asymptomatic children (*U.S. Preventive Services Task Force, 2001a*).

Supporting evidence is of class: R

Injury Prevention Screening**Service**

Ask about helmet use when riding a bicycle.

Ask about smoke detector use, cigarette smoking and fire prevention in the home.

Ask what temperature the water heater is set at.

Algorithm Annotations

Ask about possible choking hazards in the home.

Ask about training for choking treatment and cardiopulmonary resuscitation.

Ask about safety measures to prevent falls in the home.

Ask about firearms in the home and how they are stored.

Ask about water safety in the home and around swimming pools.

Ask about cardiopulmonary resuscitation training.

Ask about the availability of the poison control number in the home and safety measures to prevent accidental poisonings.

Efficacy

Bicycle safety

Data on effectiveness of bicycle helmet safety from two case-controlled studies provide evidence that the risk of head injury among bicyclists is reduced as much as 69%-80% (*Thompson, 1989*). Counseling bicyclists to avoid riding near motor vehicle traffic is based on evidence that nearly 95% of bicycle fatalities occur as a result of a collision with a motor vehicle.

Families who recalled being counseled about wearing helmets while biking reported 44% compliance, compared to 19% helmet use by families that did not receive counseling (*Quinlan, 1998*). Other studies have also shown a positive effect from counseling (*Moyer, 2004*).

Burns

Several studies have shown that counseling patients to install smoke detectors has been successful (*Bass, 1993; Moyer, 2004*). However, smoke detectors often fail to operate due to incorrect installation or inadequate testing, and some occupants may be unable to hear or respond to the alarm signal. For these reasons, it is important that smoke alarm counseling emphasize the importance of correct installation and biannual testing to ensure proper operation. Evidence is lacking regarding frequency of smoke detector testing, but the work group feels biannual testing is prudent. Several studies have documented compliance when parents are instructed to turn down their hot water heater (*Bass, 1993*).

Falls

Parents report that walker-related injuries occur in 12%-40% of infants who use walkers. Studies have shown that a walker-related injury does not prevent parents from using the walker again for the injured child or siblings (*American Academy of Pediatrics, 2001c*).

Falls in children are often from stairs or furniture; collapsible gates have been advocated as a means of protecting children from stairways. Although the efficacy of stairway gates has not been studied, there is evidence that window guards can reduce child falls from apartment windows. Counseling parents to prevent falls has been somewhat effective (*American Academy of Pediatrics, 2001c*).

Firearm safety

Most unintentional injuries from firearms involve adolescent and young adult males, and about 65%-78% of these injuries occur in or around the home. Over 90% of firearm accidents involving children occur at home; a study in children aged 0-14 found that 40% involved a firearm stored in the room where the shooting occurred.

Poisoning

Childhood poisoning can be reduced by placing medications in child-resistant containers (*American Academy of Pediatrics, 2003a*). Carbon monoxide detector use could prevent many of the 2,100 U.S. deaths from CO poisoning each year (*Yoon, 1998*).

Education has been shown to motivate parents to display poison control center telephone numbers (*Quinlan, 1998*). Other studies have found counseling to be ineffective in promoting safety (*Moyer, 2004*).

Iron Deficiency Screening

Service

Evidence is insufficient to recommend for or against routine screening for iron deficiency anemia in asymptomatic children (*U.S Preventive Services Task Force, 2006*).

Routine iron supplementation for asymptomatic children aged six to twelve months who are at increased risk for iron deficiency anemia is recommended. High-risk groups would include recent immigrants, children with a history of prematurity or low birth weight and adolescent females who are fad dieters or who are obese. Evidence is insufficient to recommend for or against routine iron supplementation for asymptomatic children aged six to twelve months who are at average risk for iron deficiency anemia (*U.S Preventive Services Task Force, 2006*).

Efficacy

Inadequate intake of dietary iron in infants and young children is the most common nutritional deficiency for this age group in the United States. It continues to raise concern because it has been linked to health problems and developmental issues. Iron deficiency anemia is one more severe manifestation of iron deficiency. There has been considerable ongoing debate as to the best approach to this problem. Screening for iron deficiency, and in particular iron deficiency anemia, has been recommended in the past utilizing measurement of hemoglobin or hematocrit at 6-12 months of age. Further study has raised a number of concerns about this screening methodology. The method of screening hemoglobin or hematocrit alone is not sensitive to discovering iron deficiency because a significant percentage of patients are iron deficient but not anemic (*White, 2005*). It also suffers from a lack of specificity because there are other causes of anemia that are not related to iron deficiency. Other testing methods for iron deficiency have been studied. These have not been shown to adequately meet the criteria of an ideal screening test (*Crowell, 2006; Biondich, 2006*). Consideration should be given to several factors when deciding what to do for screening, including risk assessment for iron deficiency, evaluation for other types of anemia and testing at later ages.

Supporting evidence is of classes: B, D, R

Nutritional Counseling

Service

Ask what children typically eat and drink and about daily activity.

Efficacy

The U.S. Preventive Services Task Force found "no controlled trials of routine behavioral dietary counseling for children or adolescents in the primary care setting." "Dietary counseling practices of primary care clinicians indicate limited attention to diet modification" (*U.S. Preventive Services Task Force, 2003f*). However, the effectiveness of nutritional counseling in changing the dietary habits of patients has been demonstrated in a number of trials (*Lu, 2001; Mant, 1997; Smith, 2005*).

Despite the lack of demonstrated effectiveness, intervention is encouraged, due to the numerous benefits associated with consumption of a healthy diet and prevention of obesity. Parents play a direct role in

Algorithm Annotations

children's eating patterns through their behaviors, attitudes and feeding styles (Patrick, 2005). There are studies that indicate adequate or modified intake of specified dietary factors may help prevent or reduce the risk of certain diseases or conditions. Fiber intake from cereals, vegetables and fruits is associated with lower risk of cardiovascular disease and cancers (Mozaffarain, 2003; Pereira, 2004). Modest weight loss and increases in physical activity have been demonstrated to reduce cardiovascular risk factors such as hypertension, dyslipidemia and type 2 diabetes. Reduced caloric intake and increased physical activity has been shown to reduce the risk of diabetes and to decrease insulin resistance (Eyre, 2004).

Counseling messages

Birth-2 years

- Encourage:**
- Breast-feeding exclusively for the first six months
 - Supplementing breastfed infants with iron no later than age six months with iron fortified cereals
 - Breast-feeding or formula up to one year
 - Use of iron-fortified formula. Use iron-fortified cereals through two years and older
 - Supplementing for breast-feeding with 200 IU/day vitamin D within two months
 - Introduction of solid foods when developmentally ready, about 4-6 months; juices after 6 months. Use 100% juices and limit to 4-6 ounces daily.
 - Wean from the bottle by end of first year.
(American Academy of Pediatrics, 2005a; American Academy of Pediatrics, 2003b; American Academy of Pediatrics, 2001e)

- Discourage:**
- Cow's milk during first 12 months (American Academy of Pediatrics, 1992; Ziegler, 1999)
 - Reduced-fat milk before two years; use whole milk (American Academy of Pediatrics, 2005a)
 - Foods with added sugars and sweetened beverages (U.S. Department of Health and Human Services, 2005a)
 - Excessive intake of any beverage (Skinner, 2004)

- 2-18 years**
- Encourage consumption of fruits, vegetables, whole grains and low-fat dairy products
 - Limit total fat, especially saturated fat, trans fats and cholesterol
 - Discourage foods with added sugars and caloric carbonated beverages
 - Encourage regular meals

(U.S. Department of Health and Human Services, 2005)

References/related guidelines:

http://www.heathierus.gov/dietary_guidelines

<http://www.mypyramid.gov>

Also see ICSI's Prevention and Management of Obesity (Mature Adolescents and Adults) guideline.

Supporting evidence is of classes: A, B, C, D, M, R

Preconception Counseling

Service

The work group feels that comprehensive preconception counseling is important for women who are seeking to become pregnant. Due to time constraints during a routine health maintenance visit, however, it may be more practical to provide comprehensive preconception counseling during a separate preconception counseling visit.

Counseling messages

- 13-18 years**
- Inform all women of childbearing age of the deleterious effects of teratogens in early pregnancy, often before the pregnancy is diagnosed.
 - Encourage women who are seeking to become pregnant to schedule a preconception counseling visit. (See the ICSI Routine Prenatal Care guidelines.)

References/related guidelines:

See the ICSI Routine Prenatal Care guidelines for more information.

Pregnancy Prevention Counseling

Services

Preventive counseling should be given at preventive care visits beginning at age 12, or earlier if sexually active. These visits will frequently include education and counseling regarding contraception and pregnancy. These messages should also be given as indicated by clinical discretion (e.g., vaginitis, sexual transmitted infection [STI] symptoms).

Efficacy

The exact prevalence of unwanted pregnancies in the U.S. is uncertain due to difficulties in data collection, but it is thought to represent a significant proportion of pregnancies, especially among adolescent and young adult parents (*U.S. Preventive Services Task Force, 1996b*).

Counseling message

When to counsel and educate

Preventive counseling should be given at preventive care visits beginning at age 12, or earlier if sexually active. These visits will frequently include education and counseling regarding contraception and pregnancy. These messages should also be given as indicated by clinical discretion (e.g., vaginitis, sexually transmitted infection symptoms).

Empathy, confidentiality and a non-judgmental, supportive attitude are important when discussing issues of sexuality.

Age Group	Counseling and Education Messages
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- | | |
|--------------------|---|
| 12-18 years | <ul style="list-style-type: none">• Counsel to prevent unintended pregnancy.• Obtain a sexual history from all adolescents.• Inform adolescents that abstinence is the most effective way to prevent pregnancy. |
|--------------------|---|

Messages should be delivered verbally and educational materials should also be given. Detailed information on contraceptive methods should be discussed if indicated. Counseling should take into account individual preferences, concerns, abilities and risks (including sexually transmitted infection risk) for each patient and his or her partner.

Algorithm Annotations

- Counsel to prevent unintended pregnancy.
- Obtain a sexual history from all adolescents and adults.
- Inform adolescents that abstinence is the most effective way to prevent pregnancy and sexually transmitted infections.
- Provide detailed education and information regarding contraceptive methods.
- To enhance acceptance of contraceptive methods, health benefits such as decreased sexually transmitted infection risk and the benefits of oral contraceptive pill should be discussed:
 - Women using oral contraceptives are at a reduced risk of developing ovarian and endometrial cancer.
 - Women who use barrier contraceptives or spermicides are at a reduced risk of developing cervical cancer.

References/related guidelines

Additional counseling and education tools are available through the ICSI Knowledge Resources in the Support for Implementation section of this guideline.

Supporting evidence is of class: R

Scoliosis Screening

Service

Physical examination of the back for signs of scoliosis has been a long-standing practice. The screening test involves the patient bending forward with arms placed together and observing for asymmetry of the back with or without a measurement tool. This screening is often done outside the medical practice setting. Patients with abnormal physical exams are evaluated with plain films of the spine. This allows a determination of the degree of curvature of the spine. Patients with more advanced curvature may then be referred on for intervention, including bracing and possible surgery. This screening recommendation specifically excludes patients with other medical conditions that can lead to scoliosis, including neuromuscular problems and congenital deformities. It also excludes those patients who develop scoliosis before adolescence.

Efficacy

There was no evidence discovered to show that screening programs have a significant impact to reduce burden of disease, compared to detection of disease without screening. In particular, school screening programs were found to be ineffective and may cause an increase in unnecessary testing. There are some mixed-quality studies to show that extensive bracing (23 hours per day) can be more effective than short-term bracing or no intervention. The patients who benefited from this intervention were those with more severe disease who likely would have been detected without screening.

Burden of suffering

The U.S. Preventive Services Task Force found that there was fair evidence that detection of patients by screening may result in moderate harms related to unnecessary brace wear and referral to specialists.

Recommendation

The U.S. Preventive Services Task Force gave screening of adolescents for scoliosis a D rating and recommends against routine screening for scoliosis.

Secondhand Smoke Exposure Counseling

Service

Establish tobacco use and secondhand smoke exposure and reassess at every opportunity. (See "Tobacco Use Screening, Prevention and Brief Intervention in Adolescents" section for a patient who is using tobacco). Advise all patients/parents that secondhand smoke exposure is harmful for the patient. Encourage a smoke-free living and working environment for patients, and assist the exposed patient/parent to communicate to other household members about decreasing smoke in their house. Encourage the patient/parent to support smoking cessation efforts among other household members who use tobacco.

Offer tobacco cessation services on a regular basis to all household members who use tobacco.

Efficacy

Tobacco use is the single most preventable cause of death and disease in our society. In this guideline, all of the attention devoted to encouraging cessation by smokers in the child's environment is because:

it is important for the person's health to quit smoking,

we know that children whose parents smoke are much more likely to begin smoking as they grow older, and

intensive efforts to reduce environmental smoke by encouraging avoidance of smoking in the infants' vicinity have been unsuccessful.

The U.S. Public Health Service guideline concluded that advising parents to stop smoking reduces childhood secondhand smoke exposure and may reduce parental smoking rates. In contrast, the U.S. Preventive Services Task Force found limited studies with mixed results that address the effect of parental counseling on reducing secondhand exposure of children and reducing parental smoking rates.

(Fiore, 2000; U.S. Preventive Services Task Force, 2003b; Prochaska, 1992)

Counseling message

For infants and children from birth to 10 years old:

- If child is exposed to smoke, counsel adult accompanying the child about harmful effect of secondhand smoke, and promote a smoke-free household.

For children and adolescents aged 10 years and above and the child or adolescent is not using tobacco, but a parent, sibling or friend is using tobacco:

- Counsel child or adolescent and the accompanying adult about the harmful effect of secondhand smoke, and promote a smoke-free household.
- Assist patient in developing refusal skills.

For all ages:

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

Supporting evidence is of class: R

Algorithm Annotations**Sexually Transmitted Infection (Other than Chlamydia) Counseling**

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

Efficacy

There have been few studies examining the effectiveness of physicians in influencing the sexual behavior of patients. Studies of clinic-based educational programs, which in some cases have included physician counseling as a component, have reported increased rate of return for test-of-cure and reduced incidence of certain sexually transmitted infections, but these studies involved select populations and provided little evidence of change in sexual behavior. Although it has not been proven that physicians can change the sexual behavior of patients, there is evidence that the frequency of high-risk behaviors can be reduced in response to information provided through public education. Clinicians can play an important role in asymptomatic persons by reinforcing and clarifying educational messages, providing literature and community resource references and dispelling misconceptions about unproven modes of transmission.

(U.S. Preventive Services Task Force, 1996b)

The most efficacious means of reducing the risk of human immunodeficiency virus or other 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. Even under optimal conditions, however, condoms are not always efficacious in preventing transmission. Condom failures occur at an estimated rate of 10%-15% either as a result of product failure or as a result of incorrect or inconsistent use.

Counseling message

Empathy, confidentiality and a nonjudgmental, supportive attitude are important when discussing issues of sexuality. Messages should be delivered both verbally and in the form of educational materials.

- 12-18 years**
- Reinforce the fact that abstinence is the most effective means to decrease sexually transmitted infections risk, and there is increased risk of contracting sexually transmitted infections associated with multiple partners.
 - Reinforce the fact that a mutually monogamous relationship with a partner known not to be infected is effective in decreasing sexually transmitted infections risk.
 - Encourage safer sexual practices including regular use of latex condoms.
 - Reinforce increased risk of contractive sexually transmitted infections associated with multiple partners.
 - Reinforce avoiding sexual contact with high-risk partners (e.g., intravenous drug users, commercial sex workers, and persons with numerous sexual partners).
 - Emphasize that alcohol/drug use is associated with high-risk sexual behavior.
 - Inform women at risk that spermicides and female barrier contraceptive methods (e.g., diaphragm or cervical cap) can reduce the risk of gonorrhea and chlamydia.

References/related guidelines

See the "Resources Available" in the Support for Implementation section of this guideline.

Supporting evidence is of class: R

Algorithm Annotations**Sexually Transmitted Infection (Other than Chlamydia) Screening**

There is insufficient evidence to recommend universal screening of average risk persons for human immunodeficiency virus, gonorrhea or genital herpes simplex (*Handsfeld, 1974; Potterat, 1987; U.S. Preventive Services Task Force, 2005; U.S. Preventive Services Task Force, 2004c; U.S. Preventive Services Task Force, 2007*).

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

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

Supporting evidence is of classes: C, D, R

Skin Cancer Screening and Counseling**Service**

There is insufficient evidence to recommend for or against routine screening for skin cancer in the primary care setting, or to recommend for or against counseling in regards to sun exposure or use of sunscreen.

Efficacy of counseling

Evidence-based reviews do not show sufficient evidence that physician counseling prevents skin cancer. The use of sunscreen may show modest benefit in preventing squamous cell cancer noted in one trial. However, another trial showed sunscreen was associated with a higher incidence of sunburn as users may not apply correctly and have a false sense of security about the degree of protectiveness. There is evidence that some community-based interventions show the most effectiveness in reducing sun exposure (*U.S. Preventive Services Task Force, 2001d*).

Burden of suffering

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

Counseling message

Although there is not sufficient evidence to recommend routine total body exams, it is prudent for clinicians to examine the skin when the opportunity arises during a physical examination. While the effectiveness of counseling has not been established, the U.S. Preventive Services Task Force has recommended counseling patients at increased risk for skin cancer to avoid excess sun exposure.

The recommended counseling messages include:

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

Algorithm Annotations

(<http://www.ahrq.gov/clinic/3rdU.S.PreventiveServicesTaskForce/skacoun/skcounsum.htm>)

Supporting evidence is of class: R

Substance Abuse: Alcohol Use Screening and Counseling

Service

Ask the amount and frequency of alcohol consumed.

Ask if adolescents drive after drinking.

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 to provide a brief intervention.

A brief intervention 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.

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 (*U.S. Preventive Services Task Force, 2004a*).

The recommended office intervention incorporates the scientifically based concept of readiness stages for behavior change. It appears that these stages can focus the clinician message and make it more effective and feasible (*Fiore, 2000; U.S. Preventive Services Task Force, 2004a; Prochaska, 1992*).

The success of this approach in the adult population has led to the adoption of the same approach in the pediatric population.

Counseling messages

Reinforce do not drink and drive.

Age Group

Counseling and Education Messages

7-12 years

- Reinforce alcohol abuse prevention and education.

13+ years

- Don't ride with someone who is under the influence of alcohol.
- Prevent others from driving in this condition: "Friends don't let friends drive drunk."
- Reinforce not drinking and driving, and the dangers of it.
 - Abstinence if driving
 - Have a designated driver
- Discuss characteristics of dependency.
- Assess current use of alcohol (by history and/or use of standardized screening questionnaire).
- Advise all females of the harm of alcohol on a fetus and advise them to limit or cease alcohol intake.

Algorithm Annotations

Counseling method

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

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

(U.S. Preventive Services Task Force, 2004a; Whitlock, 2004; Beich, 2003)

References/related guidelines

See Appendix D, "Counseling and Education Tools: Problem Drinking," "CAGE Questionnaire" and "AUDIT Structured Interview."

Supporting evidence is of classes: M, R

Undescended Testicle Screening

Service

Assessment by physical exam of the descent of testicles in males.

Burden of suffering

Undescended testicle occurs in 2% to 5% boys born at term. It can spontaneously resolve, but 1%-2% can have a persistent undescended testicle (Toppari, 1999). Descended testes can be pulled back into the inguinal canal at a later age if the spermatic cord does not lengthen adequately as a boy grows (Hutson, 2005).

Efficacy

The efficacy of screening for undescended testes has not been studied. There is good quality evidence that early treatment of undescended testicle by surgical intervention results in a significant decrease in the frequency of testicular cancer in adults (Pettersson, 2007; Dieckmann, 2004; Forman, 1994). There is also some evidence that early intervention with surgery reduces the risk of fertility problems in adult males (Hutson, 2004; AAP, 1996). The straightforward nature of the exam for this problem and the efficacy of treatment warrant periodic screening for undescended testicles at routine preventive services checkups. The age of intervention has been a point of discussion. It is clear that intervention before puberty is very important. Generally, most recommendations are for intervention before one year of age (American Academy of Pediatrics, 1996; Hutson, 2004).

Supporting evidence is of classes: B, R

Viral Upper Respiratory Infection Prevention Counseling

Service

Use good handwashing technique.

Efficacy

Convey this message at a well-child visit, preferably just before or sometime during the cold and flu season (November through April) (Roberts, 1983; Vickery, 1983).

Algorithm Annotations

Counseling messages

Handwashing is the most effective way to prevent the spread of the common cold. Viral upper respiratory infection is most contagious at the onset of symptoms and while febrile.

For infants and toddlers:

- Discourage visitors who have an acute illness, a fever or contagious disease.
- Prevent child with viral upper respiratory infection from sharing toys and pacifiers with other children.
- Clean these items with soap and hot water, as feasible, to reduce opportunities for viral transmission.
- Use and teach good handwashing.
- Ask visitors to wash their hands before handling baby.
- Check day care handwashing and infection control measures.
- Consider day care options that reduce exposure to other children.
- Encourage and support mothers to continue breast-feeding.

References/related guidelines

See the ICSI Diagnosis and Treatment of Respiratory Illness in Adults and Children guideline.

Supporting evidence is of class: A

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.

Blood Chemistry Panels

This recommendation refers to multiple chemistry tests, often grouped in a 6-18 test group or panel, collected without indication, in hopes of identifying diseases unsuspected on clinical grounds. Most evaluations of benefits have concluded that in a well population, multiple chemical screens find few unsuspected conditions and create considerable worry, as well as subsequent diagnosis testing with its own costs and hazards. These screens may be useful for patients suspected of having serious illness, but even for those patients, the selection of specific tests is usually more efficacious (*Romm, 1986*).

Supporting evidence is of class: R

Child Maltreatment Screening

Efficacy

Screening procedures (checklists, self-administered questionnaires, standardized interviews or clinical judgment) used to identify individuals at risk of maltreating children have not been found effective. Most experts recommend excluding their use from the periodic health examination (*MacMillan, 1993*).

Effectiveness of screening

There has been intensive investigation over the past 20 years towards identifying people at risk of committing physical child abuse or neglect. Methods of screening include self-administered checklists or questionnaires

Algorithm Annotations

and standardized interviews (e.g., Family Stress Checklist; Dunedin Family Services Indicator; Child Abuse Potential Inventory; Michigan Screening Profile of Parenting). The major problems with these instruments are the high false-positive rate and the potential harm of mislabeling people as child abusers. For this reason most advocate that efforts at predicting high-risk individuals be abandoned in favor of identifying high-risk communities (*Dubowitz, 1990; Dubowitz, 1989; MacMillan, 1993; Olds, 1986*).

Research into risk indicators has been conducted primarily in the area of physical abuse and sexual abuse. Limited information is available about neglect (*MacMillan, 1993*).

Research has shown that home visitation during infancy has led to decreased reports of abuse and neglect, fewer emergency room visits, fewer accidents and fewer hospital admissions. This decrease was particularly noted to be of benefit among teenage, unmarried and poor parents. For this reason, the Canadian Task Force included home visitation referrals for selected populations in their 1993 recommendations for primary prevention of child maltreatment.

This has not been studied, but it has been suggested by many experts to make greater use of the routine well-child visits to explore issues related to violence and abuse (e.g., constructive alternatives to spanking, violence history, sex education, TV viewing) (*Dubowitz, 1990; Elliot, 1993; Jenny, 1986; Stringham, 1998*).

Burden of suffering

2.7 million children in 1.3 million families reported in 1991:

- 43% substantiated
- 24% physical abuse
- 15.5% sexual abuse
- 47% neglect
- Many episodes go unreported
- 5,000 children die due to maltreatment each year

Minnesota Department of Education survey reported in 1988-89:

- 14% girls, 10% boys report physical abuse
- 5% girls, 1% boys report sexual abuse by family member
- 11% girls, 2% boys report sexual abuse by non-family member
- 16% girls report forced sexual contact by date or friend

Estimated annual cost of caring for children seriously hurt approaches \$500 million. No price tag exists for the potential lifelong emotional/psychological trauma (*Sugg, 1992; U.S. Department of Health and Human Services, 1991*).

Counseling messages

Include infant home visitation referrals routinely for prevention of child maltreatment for teenage, unmarried and poor people.

Regular home visits provide social support, parenting and life skills training. Depending on the community, this level of support may be organized through the physician's office. For many years, family physicians in small rural counties made it a practice to visit new mothers at home. Others have had office staff function as home visitors or they use selected volunteers. Metropolitan areas generally rely on public health nurses (*Bethea, 1999; Dubowitz, 1990; Elliot, 1993; MacMillan, 1993; Olds, 1986*).

Algorithm Annotations

Risk indicators for physical abuse:

- Low socioeconomic status
- Low maternal age
- Large family
- Single-parent family
- Parent's childhood experience with physical maltreatment
- Spousal violence
- Social isolation/lack of social support
- Unplanned pregnancy or negative attitude towards pregnancy

Risk indicators for sexual abuse:

- Family without natural parent
- Poor marital relationship between parents
- Stepfather present
- Unhappy family life

Supporting evidence is of classes: A, D, R

Hemoglobin (for Anemia Screening)

Routine testing for anemia is not recommended for asymptomatic children or adolescents in the absence of clinical indications. The burden of suffering and the low benefits of detection of anemia do not warrant the cost of routine testing. Hemoglobin screenings requested by schools, camps or other organizations for asymptomatic older children are unnecessary and should not be performed (*U.S. Preventive Services Task Force, 1996d*).

Supporting evidence is of class: R

Tuberculin Skin Testing (Routine)

Service

Routine tuberculin skin testing is not recommended for populations at low risk for infection with *M. tuberculosis* (TB).

High-risk groups for developing tuberculosis should be tested using 5 tuberculin units (TU) of purified protein derivative (PPD) injected intradermally by standard "mantoux" technique. Repeat screening should be determined by the likelihood of continued exposure to infectious tuberculosis.

Efficacy

There is not good evidence to recommend screening persons in average-risk groups, which are in the primary scope of this guideline; however, there is good evidence to support screening of high-risk groups as outlined above.

Algorithm Annotations

Counseling messages

Recommend tuberculosis screening for the following high-risk groups:

- Close contacts to individuals with known or suspected tuberculosis
- Persons infected with human immunodeficiency virus
- Alcoholics and injection drug users
- Persons at increased risk for disease if infection occurs (ex: immunosuppression)
- Residents and employees of long-term care facilities (ex: correctional institutions, nursing homes, mental institutions and homeless shelters)
- Health care workers exposed to high-risk individuals
- Persons immigrating from endemic areas, especially Asia, the Middle East, Africa and Latin America
- Medically underserved, low-income populations
- High-risk racial or ethnic minority populations
- Infants, children and adolescents exposed to adults in high-risk categories

(U.S. Preventive Service Task Force, 1996; U.S. Department of Health and Human Services, 1995)

Supporting evidence is of class: R

Urinalysis

The guideline recommends against screening as a part of routine well-child care. The efficacy of screening children for asymptomatic bacteriuria to prevent pyelonephritis and renal scarring has not been established. This screening strategy is costly, fails to prevent subsequent complications and should not be included as a part of well-child care. Other findings (proteinuria, hematuria) are rarely significant in asymptomatic children but often lead to anxiety and unnecessary testing (*Kemper, 1992*).

Supporting evidence is of class: R

Appendix A – Counseling Messages

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

Appropriate Counseling Approaches

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

WHO is to Counsel and Educate

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

HOW to Effectively Deliver Messages

Parents and older children

A wide variety of counseling and education messages are recommended for various services. Delivering them all in one visit or setting may be overwhelming; therefore, it is desirable to spread out the messages across several visits whenever possible. Once compliance has been attained, intermittent reinforcement messages may be desirable for some behaviors.

Especially for younger children, the parent is the one who needs to understand the risk and be ready to make changes. Multiple factors and perceptions may be associated with a parent's readiness to help his or her child lose weight (*Rhee, 2005*), and the same may be true for other risks. Whether working with a parent or older child, communicating in a direct manner and making clear recommendations is encouraged. Recognition of health risks and physician's concerns may heighten the parent/older child's awareness.

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

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

The Five A's

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

- **Assess:** Ask about/assess behavioral health risk(s) and factors affecting choice of behavior change goals/methods.

Appendix A – Counseling messages

- **Advise:** Give clear, specific and personalized behavior change advice, including information about personal health harms/benefits.
- **Agree:** Collaboratively select appropriate treatment goals and methods based on the patient's interest in and willingness to change the behavior.
- **Assist:** Using behavior change techniques (self-help and/or counseling), aid the patient in achieving agreed-upon goals by acquiring the skills, confidence, and social/environmental supports for behavior change, supplemented with adjunctive medical treatments when appropriate (e.g., pharmacotherapy for tobacco dependence, contraceptive drugs/devices).
- **Arrange:** Schedule follow-up contacts (in person or by telephone) to provide ongoing assistance/support and to adjust the treatment plan as needed, including referral to more intensive or specialized treatment.

(Whitlock, 2002)

Interviewing younger children using the five-stage model.

In communicating with younger children, you may find the following helpful:

- Establish a rapport.
- Gather data emphasizing strengths. Paraphrase, reflect the child's feelings, summarize frequently. Keep questions and concepts concrete and avoid abstract talk. Identify positive aspects.
- Determine goals. Ask what the child wants to happen. Accept a child's goals but focus on concrete, short-term goals.
- Generate alternative solutions and actions.
- Allow time to try new behaviors and ideas.

Adapted from Handbook of Pediatric Nutrition, 3rd ed., Samour PQ, King K., who adapted from Ivey AE, Ivey MB and Simek-Morgan L. Counseling and Psychotherapy: A Multicultural Perspective, 4th ed. 1997.

Appendix B – Visit Schedule

The schedule of visits will largely be determined by completion of necessary preventive services and screening maneuvers listed for each age group. The schedule recommended within this guideline is a synthesis of the recommendations of various groups, including the U.S. Preventive Services Task Force, Bright Futures, American Academy of Pediatrics and AAFP (*Bright Futures, 1993; Institute for Clinical Systems Improvement, 2003; U.S. Preventive Services Task Force, 1996*). There is insufficient evidence to recommend one visit schedule over another in terms of lowering child mortality and morbidity, recognizing disability, promoting optimal growth and development or helping children achieve longer more productive lives. Some visit schedules, such as the child and teen checkup schedules, are designed to serve a possibly higher-risk population of children. For the purposes of this guideline, a reasonable schedule to allow for the needed preventive services and screening maneuvers is as follows.

Birth to 24 months

Preventive service visits are recommended within the first two weeks after birth and at 2, 4, 6-9, 12 and 15 months of age.

2 to 6 years

Preventive service visits are recommended at age 2 and between ages 4-6.

The visit at two years of age is primarily a counseling visit. The discretion of both the clinician and the parent or guardian should be used in determining whether to schedule this visit.

7 to 12 years

Preventive service visits are recommended between the ages of 7 and 9 and at age 12.

Patients in the preteen years who are seen in the clinic for an acute or preventive visit should be informed of the health risks for the upcoming teen years and encouraged to visit in the future to discuss these risks.

13 to 18 years

One to two preventive care visits are recommended between the ages of 13 and 18 years. (The second visit is at the preference of clinician and parent/guardian.) Adolescent preventive visits are primarily for counseling. Visits are dependent upon the child's developmental stage and behaviors and other factors. The discretion of both the clinician and the parent or guardian should be used in determining whether to schedule a second adolescent visit.

Additional visits may be useful if there has been a significant change in an adolescent's behavior or environment.

Supporting evidence is of class: R

Related guidelines/references

ICSI Immunization guideline

Appendix D – Counseling and Education Tools: Problem Drinking

CAGE Questionnaire

- C - Have you ever felt you should **CUT** down on your drinking?
- A - Have people ever **ANNOYED** you by criticizing your drinking?
- G - Have you ever felt bad or **GUILTY** about your drinking?
- E - Have you ever had a drink in the morning to steady your nerves or to get rid of a hangover (**EYE-OPENER**)?

Item responses on the CAGE are scored 0 or 1, with a higher score an indication of alcohol problems. A total score of 2 or greater is considered clinically significant.

Source: National Institute on Alcohol Abuse and Alcoholism

AUDIT Structured Interview*

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

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

Source: National Institute on Alcohol Abuse and Alcoholism

Appendix E – Injury Prevention Counseling Messages

Counseling Message: Bicycle Safety

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

Counseling Message: Poisoning

Birth-12 years

- Reinforce having the national poison control phone number readily accessible (1-800-222-1222).
- Use child-resistant containers for medications, toxic substances and matches.
- Dispose of expired or unused portions of medications.
- Syrup of ipecac is no longer recommended in households.

Counseling Message: Burns

Birth-12 years

- Encourage the use of flame-resistant sleepwear.
- Reinforce setting the household hot water heater at or below 120° F.

All individuals

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

Counseling Message: Choking

Birth-6 years

- Discuss avoiding foods that children commonly choke on (hot dogs, peanuts, popcorn, hard candy, raw carrots).
- Discuss avoiding other nonfood items that children commonly choke on (balloons, age-inappropriate items such as small toys).
- Discuss avoiding eating while walking or running.
- Teach back blows and chest thrusts to parents of infants; teach Heimlich maneuver to parents of children greater than one year of age. Encourage CPR training.

Appendix E – Injury Prevention Counseling messages

Counseling Messages: Falls

Birth-2 years

- Use window and stairway guards/gates to prevent falls from stairways, balconies and windows.
- Discourage walker use.
- Prevent falls from changing tables by never leaving child unattended.

2-6 years

- Assess and control environment to reduce likelihood of falls from stairs, balconies, windows, etc.

Counseling Message: Firearm Safety

13-18 years

- Teach firearm safety (proper handling, hunting practices including wearing orange fluorescent clothing).

All individuals

- Ask about firearms in the home.
- Discuss storing unloaded firearms in a locked place.
- Keep ammunition in a safe/locked place separate from the firearm.

Counseling Message: Water Safety

Never leave children alone near water.

Birth-6 years

- Reinforce never leaving infants or young children alone in a bath or near standing water.
- Install isolation fences around swimming pools.
- Encourage cardiopulmonary resuscitation training.

7-12 years

- Discuss the fact that swimming lessons are not a substitute for adult supervision.
- Encourage cardiopulmonary resuscitation training.

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Brief Description of Evidence Grading

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

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

II. CONCLUSION GRADES

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

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

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

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

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

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

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

- indicates that these issues have not been adequately addressed;

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

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

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Conclusion Grading Worksheet A – Annotation #5 (Smoking Cessation Counseling)

Work Group's Conclusion: 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

Author / Year	Design Type	Class	Quality	Population Studied / Sample Size	Primary Outcome Measure(s) / Results (e.g., p-value, confidence interval, relative risk, odds ratio, likelihood ratio, number needed to treat)	Authors' Conclusions / Work Group's Comments (italicized)
Katz, et al., 2004	RCT	A	+,-,0	<p>Applied AHRQ Smoking Cessation Guideline among 8 community-based clinics in Southern Wisconsin</p> <ul style="list-style-type: none"> 2163 pts 18 years old or greater who smoked average of one or more cigarettes per day across the baseline period and intervention period (about 11 to 12 months long for each period) 1008 pts in study group vs. 1155 patients in control group Intervention included tutorial for clinicians, vital signs stamp on encounter forms to prompt clinicians to perform recommended counseling, offers of transdermal nicotine patches and proactive telephone counseling Control physicians provided with AHRQ guideline background information only (all received full training at end of trial) 	<ul style="list-style-type: none"> Follow-up interviews took place at 2 and 6 months During the intervention period, more patients at experimental sites as compared to control sites were asked about smoking status, willingness to quit, setting a quit date, discussing pharmacotherapy, and other counseling activities (all statistically significant) Pts at test sites were more likely than those at control sites to report abstinence at 2-month and 6-month follow-up (adjusted OR = 3.4, p < 0.001) Using biochemically confirmed abstinence at 6 months, there was no significant difference between the groups in terms of abstinence Effects of intervention on quit rates and continuous abstinence were statistically significant for pts smoking 10 or more cigarettes per day but not for those smoking less than 10/day Among those smoking 10 or more cigs./day, pts were more likely to be abstinent on biochemical testing than lighter smokers (adjusted OR 2.0, p=0.06, borderline insignificant) 	<ul style="list-style-type: none"> Implementation of the AHRQ guideline was associated with a 5.6% absolute increase in the 6-month quit rate, similar to transdermal nicotine therapy and counseling in a meta-analysis Results overall suggest that intake clinicians can effectively implement the AHRQ guideline protocol to improve the delivery of smoking cessation advice and pharmacotherapy Limitations: biochemical confirmation not performed in all participants, thus relying more on self-report; the study intervention did not target care providers; enrollment target not reached, which may have led to decreased power in terms of noting differences between groups

**Conclusion Grading Worksheet A –
Annotation #5 (Smoking Cessation Counseling)**

Author /Year	Design Type	Class	Quality +, -, θ	Population Studied/Sample Size	Primary Outcome Measure(s)/Results (e.g., p-value, confidence interval, relative risk, odds ratio, likelihood ratio, number needed to treat)	Authors' Conclusions/ Work Group's Comments (<i>italicized</i>)																														
Zhu, et al., 2002	RCT	A	θ	<p>-- RCT embedded within service of California Smokers' Helpline</p> <p>-- Callers were randomly allocated to a treatment group (1973 callers) and a control group (1309 callers)</p> <p>-- Only subjects "ready to quit" assigned to the protocol</p> <p>-- All subjects received self-help materials</p> <p>-- Treatment group received up to 7 telephone counseling sessions (average was 3 sessions) within 3 months of date of contact; structured counseling protocol was used to minimize variability</p> <p>-- Follow-up assessments took place at 1, 3, 6, and 12 months</p> <p>-- Subjects in control group could request counseling after randomization if they called back for it</p>	<p>-- No significant differences were noted between groups in baseline characteristics</p> <p>-- Of the 1309 subjects assigned to the control group, 35.4% called back to request counseling (control subgroup A); otherwise, subjects were assigned to control subgroup B in treatment group; 72.1% of treatment participants received counseling</p> <p>-- 69.9% of patients followed at 12 months</p> <p>-- Intention to treat (ITT) analysis used, resulting in the following rates of abstinence (p < 0.001):</p> <table border="1"> <thead> <tr> <th>Follow-up time</th> <th>Treatment group</th> <th>Control group</th> </tr> </thead> <tbody> <tr> <td>1 month</td> <td>23.7%</td> <td>16.5%</td> </tr> <tr> <td>3 months</td> <td>17.9%</td> <td>12.1%</td> </tr> <tr> <td>6 months</td> <td>12.8%</td> <td>8.6%</td> </tr> <tr> <td>12 months</td> <td>9.1%</td> <td>6.9%</td> </tr> </tbody> </table> <p>-- Analysis factoring out subjects in control group who received counseling, as well as corresponding treatment group, showed the following rates of abstinence (p < 0.001):</p> <table border="1"> <thead> <tr> <th>Follow-up time</th> <th>Treatment group</th> <th>Control group</th> </tr> </thead> <tbody> <tr> <td>1 month</td> <td>20.7%</td> <td>9.6%</td> </tr> <tr> <td>3 months</td> <td>15.9%</td> <td>6.7%</td> </tr> <tr> <td>6 months</td> <td>11.7%</td> <td>5.2%</td> </tr> <tr> <td>12 months</td> <td>7.5%</td> <td>4.1%</td> </tr> </tbody> </table> <p>12-month abstinence rates for subjects making at least one attempt to quit were 23.3% in the treatment group and 18.4% in the control group (p < 0.001)</p>	Follow-up time	Treatment group	Control group	1 month	23.7%	16.5%	3 months	17.9%	12.1%	6 months	12.8%	8.6%	12 months	9.1%	6.9%	Follow-up time	Treatment group	Control group	1 month	20.7%	9.6%	3 months	15.9%	6.7%	6 months	11.7%	5.2%	12 months	7.5%	4.1%	<p>-- Telephone counseling protocols that have previously been shown to be effective have also been shown effective in a real world setting</p> <p>-- Absolute effect between treatment and control groups in terms of counseling intervention was limited due to high rate of counseling in control group and the fact that about 28% of treatment group received no counseling</p> <p>-- Most smokers relapsed at 12 months, limiting clinical effect of counseling intervention</p>
Follow-up time	Treatment group	Control group																																		
1 month	23.7%	16.5%																																		
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**Conclusion Grading Worksheet A –
Annotation #5 (Smoking Cessation Counseling)**

Author/Year	Design Type	Class	Quality +,-,Ø	Population Studied / Sample Size	Primary Outcome Measure(s) / Results (e.g., p-value, confidence interval, relative risk, odds ratio, likelihood ratio, number needed to treat)	Authors' Conclusions / Work Group's Comments (italicized)
Goldstein, et al., 2003	Non-randomized controlled trial	C	Ø	<p>-- Took representative samples of 259 primary care physicians and 2346 adult smokers; intervention and control groups were assigned based on geographic location (i.e., some locations were assigned to treatment, some locations to control)</p> <p>-- Groups consisted of controls (n=1253), physician-only intervention (n=376), physician + home intervention (n=332) and home-only intervention (n=385)</p> <p>-- Known as the Physicians Counseling Smokers (PCS) Project</p> <p>-- Community-based study (Rhode Island)</p> <p>-- For the intervention group, an academic detailing intervention was provided to physicians over a period of 15 months, with subsequent counseling practices and patients' motivation to quit; material consisted of counseling skills training, patient education resources, and other resources; control group physicians were given only a manual with instructions on smoking cessation</p> <p>-- Smokers needed at least one visit to a physician during the study intervention period</p>	<p>-- At 24 months follow-up, 35% to 37% of patients in all groups were lost to follow-up</p> <p>-- Pts who were advised to quit by an experimental group physician were more likely to quit than pts who received advice from a control physician (p = 0.03)</p> <p>-- At 24 months, the quit rate among those residing in the PCS-office based intervention geographic area was 25%, compared to 20% in the control area (p = 0.003)</p> <p>-- The physician + home intervention slightly outperformed the physician-only and home-only interventions at 18 and 24 months (no p-value provided)</p> <p>-- Using the subset of patients who indicated that they visited an <i>enrolled</i> physician at least once during the intervention period (819 patients), 33% of pts who visited an intervention group physician had quit smoking, as compared to 22.6% in the control group (p = 0.006)</p>	<p>-- Principal finding is that smokers who reside in geographic areas where the PCS office-based academic detailing intervention was provided were more likely to self-report that they quit smoking at 24 months than smokers who resided in control areas</p> <p>-- Office-based PCS in intervention improved smoking cessation rates by improving physicians' adoption of smoking cessation interventions and protocols</p> <p>-- Authors state that limitations include: lack of randomization; other pt and provider characteristics linked to geographic areas may be unknown; no intention-to-treat analysis; and high attrition (although no known difference in attrition population from those completing follow-up)</p>

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

The subdivisions of this section are:

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

Priority Aims and Suggested Measures

1. Increase regular use of health-risk assessments.

Possible measure for accomplishing this aim:

- a. Percentage of patients who have a current risk-assessment tool in their medical record.

2. Increase the percentage of patients who are on time with recommended immunizations. (See Table 1: Child Preventive Services That Providers and Care Systems *Must* Deliver [Based on Best Evidence] Level I: Childhood Immunization Series; also see the ICSI Immunization guideline.)

Possible measures for accomplishing this aim:

- a. The percentage of children at any visit who are on time with recommended immunizations.

- b. The percentage of two year olds on time with their primary series of immunizations:

- DtaP – diphtheria, tetanus toxoids and acellular pertussis vaccine
- IPV – inactivated poliovirus
- MMR – measles, mumps and rubella
- PCV7 – pneumococcal
- VZV – varicella vaccine
- Hib – haemophilus influenza type b conjugate vaccine
- Hep B – Hepatitis B vaccine – schedule 1
- Hep B - Hepatitis B vaccine – schedule 2
- Hep A - Hepatitis A vaccine
- Rota - rotavirus vaccine

- c. The percentage of adolescents who are on time with recommended immunizations:

- Hep B - Hepatitis B vaccine
- Hep A – Hepatitis A vaccine
- HPV – human papillomavirus vaccine
- MMR - measles, mumps and rubella
- MCV4 - meningococcal
- Tdap – tetanus, diphtheria toxoids and acellular pertussis vaccine
- To persons without evidence of immunity: VZV – Varicella vaccine

- d. The percentage of children age 6-59 months and over who are on time with recommended influenza vaccine.

Priority Aims and Suggested Measures

3. Reduce missed opportunities for administering immunizations.

Possible measure for accomplishing this aim:

- a. The percentage of patients not on time with immunizations and without contraindication who had an encounter and received immunizations.

4. Decrease the percentage of patients who are behind with recommended immunizations by creating a catch-up plan.

Possible measure for accomplishing this aim:

- a. The percentage for patients not on time with immunizations who have a catch-up plan documented in the medical record.

5. Increase the percentage of sexually active female patients under the age of 25 who are screened for chlamydia.

Possible measure for accomplishing this aim:

- a. The percentage of sexually active female patients under age 25 with documentation of chlamydia screening in the medical record. (See Child Preventive Services That Providers and Care Systems *Must Deliver* [Level I].) (2008 HEDIS: women age 16-25 and sexually active)

6. Increase percentage of children age four years and younger who have had vision screening.

Possible measure for accomplishing this aim:

- a. The percentage of children age four years and younger with documentation of vision screening in the medical record. (See Child Preventive Services That Providers and Care Systems *Must Deliver* [Level I].)

Priority Aims and Suggested Measures

Measurement Specifications

Possible Success Measure #2a

Increase the percentage of patients who are on time with recommended immunizations.

Population Definition

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

Data of Interest

of patients on time with recommended immunizations

Total # of patients who present in the clinic for a nonemergent primary care visit

Numerator/Denominator Definitions

Numerator: A patient must be on time with all applicable immunizations to meet the criteria. For an immunization to be counted as administered, it should be documented with a date of service.

Medical Record documentation should indicate if the service was:

- Completed
- Offered and refused
- Not done

If a service was offered to the patient and the patient/parent of a minor patient refused the service (test or procedure), it should be counted as a "yes" to the criteria.

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

Method/Source of Data Collection

Patients who have had an office visit of any kind within the preceding month can be randomly sampled to produce a sample of at least 20 records for review. Selected records are audited using the checklist tool to determine a patient's status on each of the preventive services listed.

Time Frame Pertaining to Data Collection

Data can be collected monthly.

Priority Aims and Suggested Measures

Other Options for Measurement

Use the same approach with age appropriate preventive services that providers and care systems should deliver based on good evidence (Level II).

Cervical cancer screening

Motor vehicle safety

Infant sleep positioning and sudden infant death syndrome counseling

Neonatal screening

Obesity screening

Tobacco use screening prevention and intervention in adolescents

Data Collection Worksheet

Auditor: _____ Date: _____

See Immunization table and correlating Annotation for specific administration criteria

Audit item	Pt. #1	Pt. #2	Pt. #3	Pt. #4	Pt. #5	Total #
Age: _____						
Gender: _____						
Preventive visits per recommended schedule						
Risk assessment last visit (Y/N)						
Infants and children who are on time with recommended immunizations: <ul style="list-style-type: none"> • DtaP • IPV • MMR • PCV7/PPV23 • VZV • Hib • Hep B – schedule 1 • Hep B – schedule 2 • Hep A • Rotavirus 						
Adolescents who are on time with recommended immunizations: <ul style="list-style-type: none"> • Hep A • Hep B • HPV • MMR • MCV4 • Tdap To persons without evidence of immunity: <ul style="list-style-type: none"> • VZV 						
Chlamydia screening <ul style="list-style-type: none"> • Sexually active females < age 25 						
Vision screening Children age 4 and <						
Percent up-to-date N = total # of + marks D = total # of 0 and + marks						

Data Collection Worksheet

1. > = greater or more than, < = fewer or less than
2. Preventive visits on recommended schedule.
3. Risk Assessment = completion of a form that assesses risks.
4. Chlamydia screening = Chlamydia testing is recommended for all sexually active women 25 years and younger.
5. Vision Screening = Recommended for children four years old and younger. By age five, vision screening should be performed in the clinic or school as part of preschool screening.
6. Immunizations = on time status assessed.

Immunizations:**Age:**

DTaP (see Annotation #1 of Immunization guideline)	4 shots – 2 to 18 months and 1 shot 4 to 6 years Tdap – 11 to 12 years
IPV (see Annotation #2 of Immunization guideline)	3 shots – 2 to 18 months, and 1 shot - 4 to 6 years
MMR (see Annotation #3 of Immunization guideline)	1 shot – 12 to 24 months, and 1 shot 4 to 6 years
MMRV	(see Annotation #3 of Immunization guideline)
PCV7 (see Annotation #5 of Immunization guideline)	2 shots – 2 months to 23 months
PPV23	(see Annotation #5 of Immunization guideline)
Hep A (see Annotation #10 of Immunization guideline)	2 shots – 12 to 24 months
Hep B (Schedule 1 – see Annotation #8 of Immunization guideline)	3 shots – Birth to 18 months
Hep B (Schedule 2 - see Annotation #8 of Immunization guideline)	3 shots – 1 to 18 months
Hib (see Annotation #6 of Immunization guideline)	4 shots – 2 to 15 months
Varicella (see Annotation #4 of Immunization guideline)	1 shot – 12 to 15 months, and 1 shot 4 to 6 years
Meningitis (see Annotation #11 of Immunization guideline)	1 shot – age 11 to 12 (1 shot – age 13 to 18 if not previously received)
Rotavirus (see Annotation #7 of Immunization guideline)	3 doses – 2 to 6 months
Human Papillomavirus (see Annotation #12 of Immunization guideline)	3 shots – 11 to 12 years (catch-up if appropriate, 3 dose series age 15 to 18)
Influenza (see Annotation #9 of Immunization guideline)	6 to 29 months

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 parents/guardians to complete a risk assessment questionnaire prior to periodic well-child 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 in the medical record 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 and monitoring of counseling needs.
6. Risk-assessment questionnaires should be in a consistent and easily accessible place, in the patient's chart.
7. Develop electronic data systems to track the immunization status of patients under the provider's care, with the capability to produce reminders and recalls of upcoming or overdue immunizations.
8. Remove barriers to immunization services.

Knowledge Resources

Criteria for Selecting Resources

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

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

Resources Available to ICSI Members Only

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

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

Resources Available

*	Title/Description	Audience	Author/Organization	Web Sites/Order Information
	The Guide to Clinical Preventive Services provides the latest available recommendations on preventive interventions – screening tests, counseling, and immunizations for more than 80 conditions. The 3rd Edition, 2000-2002, updates recommendations from the 2nd Edition and evaluates new topics. Reviews and recommendations will be released as they are completed. These recommendations are made by the U.S. Preventive Services Task Force.	Patients and Families/Health Care Professionals	Agency for Health Research and Quality	http://www.ahrq.gov/clinic/prevnew.htm
	Comprehensive site provides information on immunizations and CDC prevention guidelines.	Patients and Families/Health Care Professionals	Centers for Disease Control and Prevention	http://www.cdc.gov
	Comprehensive site provides information on Healthy People 2010. Leading health indicators, guidelines, data and health information is given.	Patients and Families/Health Care Professionals	U.S. Department of Health and Human Services	http://www.healthypeople.gov
	Provides information on safety issues, advocacy and research.	Patients and Families/Health Care Professionals	American Academy Pediatrics	http://www.aap.org
	A nationwide, community-based voluntary health organization that provides resources on cancer prevention.	Patients and Families/Health Care Professionals	American Cancer Society	http://www.cancer.org
	Provides fact sheets and frequently asked questions on the topic of oral health.	Patients and Families/Health Care Professionals	American Dental Association	http://www.ada.org
	The 2005 Dietary Guidelines for Americans provides advice for people > 2 years on dietary habits that promote health and reduce risk of major chronic disease.	Patients and Families	Department of Health and Human Services	http://www.healthierus.gov/dietaryguidelines
	Provides fact sheets for preconception counseling to prevent birth defects.	Patients and Families/Health Care Professionals	March of Dimes	http://www.modimes.org
	Provides tools to help families evaluate their media use ratings on video games, videos and television programs.	Patients and Families/Health Care Professionals	National Institute on Media and Family	http://www.mediafamily.org

* Available to ICSI members only.

Resources Available

*	Title/Description	Audience	Author/Organization	Web Sites/Order Information
	Provides safety information regarding bikes, car seats, product recalls and other injury prevention information.	Patients and Families	National SAFEKIDS Campaign	http://www.safekids.org
	Provides fact sheets on all aspects of tobacco cessation, including motivational e-mails, chat rooms and links to local organizations that provide support to individuals.	Patients and Families	Quitnet	http://www.quitnet.org
	Provides self-assessment tools, information about the benefits of becoming more active, suggestions about different ways to approach adding physical activity, and assistance with overcoming barriers.	Patients and Families/ Health Care Professionals	Shape-Up America	http://www.shapeup.org
	Professional information on clinical care research, practice management and policy.	Health Care Professionals	American Academy of Family Physicians	http://www.aafp.org
	This site provides both professional literature and patient-based information.	Patients and Families/ Health Care Professionals	American Academy of Pediatrics	http://www.aap.org
	This site sponsored by the American Dietetic Association provides food and nutrition information that is reliable and useful. Registered Dietitians prepare the site.	Patients and Families/ Health Care Professionals	American Dietetic Association	http://www.eatright.org
	Healthy heart and stroke prevention information.	Patients and Families	American Heart Association	http://www.americanheart.org
	Community health initiative involving a team of health professionals and community partners to improve heart health in Olmsted County.	Patients and Families/ Health Care Professionals	Cardiovision 2020	http://www.cardiovision2020.org
	A-Z health information organizations and health care topics.	Patients and Families	HealthFinder	http://www.healthfinder.gov
	Provides information on current hot topics and provides the opportunity to ask a Mayo specialist your questions.	Patients and Families/ Health Care Professionals	Mayo Clinic	http://www.mayoclinic.org
	Education to reduce illness and death from coronary heart disease related to high cholesterol.	Health Care Professionals	National Heart, Lung, and Blood Institute	http://www.nhlbi.nih.gov/about/ncep

* Available to ICSI members only.

Resources Available

*	Title/Description	Audience	Author/Organization	Web Sites/Order Information
	This user-friendly site helps you start a search for health information by directing you to some credible databases.	Patients and Families/ Health Care Professionals	National Institutes of Health	http://www.nih.gov
	This site is sponsored by the United States Department of Agriculture (USDA). It is very user friendly and filled with current information on almost any nutrition topic.	Patients and Families/ Health Care Professionals	The Food and Nutrition Information Center	http://www.nal.usda.gov/fnic/
	This is a reliable and up-to-date site. It will provide you with the most recent information available.	Patients and Families/ Health Care Professionals	U.S. Food and Drug Administration	http://www.fda.gov
	Healthy Youth	Health Care Professionals	Centers for Disease Control	http://www.cdc.gov/healthyyouth/index.htm
	Food Pyramid: Games and posters about good nutrition and activities for kids. My Pyramid Plan and Inside the Pyramid provide development of individual personal nutrition and activity plans.	Patients and Families/ Health Care Professionals	U.S. Department of Agriculture	http://www.mypyramid.gov
	A pocket guide for alcohol screening and brief intervention.	Health Care Professionals	National Institute of Alcohol Abuse and Addiction	http://www.niaaa.nih.gov
	Immunization Contraindications: A guide designed to help immunization providers determine what common symptoms and conditions should contraindicate vaccination and which ones should not. It supersedes the 2000 Guide to Contraindications to Childhood Vaccination and, unlike that and previous Guides, contains information on all licensed U.S. vaccines, not just pediatric vaccines.	Health Care Professionals	Centers for Disease Control and Prevention	http://www.cdc.gov/vaccines/recs/vac-admin/contraindications.htm
*	Summary Reports Tobacco Prevention and Cessation Family Health Services Minnesota (2003)	Health Care Professionals	ICSI	http://www.icsi.org
*	Summary Reports Pediatric Immunization Rate Improvement at Park Nicollet Health Services (2003)	Health Care Professionals	ICSI	http://www.icsi.org

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Resources Available

*	Title/Description	Audience	Author/Organization	Web Sites/Order Information
*	Recorded Presentations Summary Reports Preventive Services, Sustaining Improvement at Three Medical Groups (2002)	Health Care Professionals	ICSI	http://www.icsi.org
*	Summary Reports Preventive Services Focus Group (2002)	Health Care Professionals	ICSI	http://www.icsi.org
*	Summary Reports Preventive Services Improvement at HealthPartners (2002)	Health Care Professionals	ICSI	Go to: http://www.icsi.org for order information, or call: 952-814-7060
*	Summary Reports Primary Care Delivery System at Quello Clinic (2002)	Health Care Professionals	ICSI	Go to: http://www.icsi.org for order information, or call: 952-814-7060
*	Tool kit Preventive Risk Assessment Forms	Health Care Professionals	ICSI	Go to: http://www.icsi.org for order information, or call: 952-814-7060
*	Tool kit Tobacco Cessation Program at North Clinic (2002)	Health Care Professionals	ICSI	Go to: http://www.icsi.org for order information, or call: 952-814-7060
*	Tool kits Preventive Risk Assessment Forms	Health Care Professionals	ICSI	Go to: http://www.icsi.org for order information, or call: 952-814-7060

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