



Complete Summary

GUIDELINE TITLE

Identifying infants and young children with developmental disorders in the medical home: an algorithm for developmental surveillance and screening.

BIBLIOGRAPHIC SOURCE(S)

Council on Children With Disabilities, Section on Developmental Behavioral Pediatrics, Bright Futures Steering Committee, Medical Home Initiatives for Children With Special Needs Project Advisory. Identifying infants and young children with developmental disorders in the medical home: an algorithm for developmental surveillance and screening. Pediatrics 2006 Jul;118(1):405-20. [45 references] [PubMed](#)

GUIDELINE STATUS

This is the current release of the guideline.

All clinical reports and policy statements from the American Academy of Pediatrics automatically expire 5 years after publication unless reaffirmed, revised, or retired at or before that time.

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SCOPE

DISEASE/CONDITION(S)

Developmental disorders

GUIDELINE CATEGORY

Counseling
Diagnosis

Evaluation
Management
Risk Assessment
Screening

CLINICAL SPECIALTY

Family Practice
Pediatrics
Preventive Medicine

INTENDED USERS

Health Care Providers
Physicians

GUIDELINE OBJECTIVE(S)

To provide an algorithm as a strategy to support health care professionals in developing a pattern and practice for addressing developmental concerns in children from birth through 3 years of age

TARGET POPULATION

Children from birth to 3 years of age

INTERVENTIONS AND PRACTICES CONSIDERED

Developmental Surveillance and Screening

1. Eliciting and attending to the parents' concerns about their child's development
2. Documenting and maintaining a developmental history
3. Making accurate observations of the child
4. Identifying the presence of risk and protective factors
5. Documenting the process and findings.
6. Administering standardized developmental screening tools at 9, 18, and 30 months of age
7. Scheduling early return visits as appropriate
8. Referring children for intervention
9. Coordination of developmental and medical evaluations
10. Initiation of chronic condition management in children with identified special needs

MAJOR OUTCOMES CONSIDERED

- Risk for developmental disabilities
- Accuracy (sensitivity/specificity) of screening tools for risk of developmental disabilities

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Summary

Developmental surveillance should be a component of every preventive care visit. Standardized developmental screening tools should be used when such surveillance identifies concerns about a child's development and for children who appear to be at low risk of a developmental disorder at the 9-, 18-, and 30-month* visits.

When a child has a positive screening result for a developmental problem, developmental and medical evaluations to identify the specific developmental disorders and related medical problems are warranted. In addition, children who have positive screening results for developmental problems should be referred to early developmental intervention and early childhood services and scheduled for earlier return visits to increase developmental surveillance.

Children diagnosed with developmental disorders should be identified as children with special health care needs; chronic-condition management for these children should be initiated.

Recommendations

For the Medical Home

1. Perform developmental surveillance at every preventive visit throughout childhood, and ensure that such surveillance includes eliciting and attending to parents' concerns, obtaining a developmental history, making accurate and informed observations of the child, identifying the presence of risk and protective factors, and documenting the process and findings.
2. Administer a standardized developmental screening tool for children who appear to be at low risk of a developmental disorder at the 9-, 18-, and or 30-month* visits and for those whose surveillance yields concerns about delayed or disordered development.
3. Schedule early return visits for children whose surveillance raises concerns that are not confirmed by a developmental screening tool.
4. Refer children about whom developmental concerns are raised to early intervention and early-childhood programs.
5. Coordinate developmental and medical evaluations for children who have positive screening results for developmental disorders.
6. Initiate a program of chronic-condition management for any child identified with a developmental disorder.
7. Document all surveillance, screening, evaluation, and referral activities in the child's health chart.
8. Establish working relationships with state and local programs, services, and resources.

9. Use a quality-improvement model to integrate surveillance and screening into office procedures and to monitor their effectiveness and outcomes.

For Policy and Advocacy

10. Provide appropriate payment for developmental surveillance, screening, and evaluation.
11. Teach child health professionals, through training and continuing education programs, to conduct developmental surveillance and screening as an integral responsibility of the medical home.

*Note: Because the 30-month visit is not yet a part of the preventive care system and is often not reimbursable by third-party payers at this time, developmental screening can be performed at 24 months of age. In addition, because the frequency of regular pediatric visits decreases after 24 months of age, a pediatrician who expects that his or her patients will have difficulty attending a 30-month visit should conduct screening during the 24-month visit.

CLINICAL ALGORITHM(S)

A clinical algorithm titled "Developmental surveillance and screening algorithm within a pediatric preventive care visit" is provided in the original guideline document.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting each recommendation is not specifically stated.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Early identification of developmental disabilities through surveillance and screening can lead to timely evaluation, diagnosis and appropriate treatment, including developmental intervention.

POTENTIAL HARMS

If a test incorrectly identifies a child as delayed, it will result in overreferrals. If a test incorrectly identifies a child as normal, it results in underreferrals. For developmental screening tests, scoring systems must be developed that minimize underreferrals and overreferrals.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Implementing the Algorithm

Choosing Developmental Screening Tools

Although all developmental screening tools are designed to identify children with potentially delayed development, each one approaches the task in a different way. There is no universally accepted screening tool appropriate for all populations and all ages. Currently available screening tools vary from broad general developmental screening tools to others that focus on specific areas of development, such as motor or communication skills. Their psychometric properties vary widely in characteristics such as their standardization, the comparison group used for determining sensitivity and specificity, and population risk status.

Broad screening tools should address developmental domains including fine and gross motor skills, language and communication, problem solving/adaptive behavior, and personal-social skills. Screening tools also must be culturally and linguistically sensitive. Many screening tools are available, and the choice of which tool to use depends on the population being screened, the types of problems being screened for in that population, administration and scoring time, any administration training time, the cost of the tool, and the possibilities for adequate payment.

Screening tests should be both reliable and valid, with good sensitivity and specificity.

- Reliability is the ability of a measure to produce consistent results.
- The validity of a developmental screening test relates to its ability to discriminate between a child at a determined level of risk for delay (i.e., high, moderate) and the rest of the population (low risk).
- Sensitivity is the accuracy of the test in identifying delayed development.
- Specificity is the accuracy of the test in identifying individuals who are not delayed.

If a test incorrectly identifies a child as delayed, it will result in overreferrals. If a test incorrectly identifies a child as normal, it results in underreferrals. For developmental screening tests, scoring systems must be developed that minimize underreferrals and overreferrals. Trade-offs between sensitivity and specificity occur when devising these scoring systems. Sensitivity and specificity levels of 70% to 80% have been deemed acceptable for developmental screening tests. These values are lower than generally accepted for medical screening tests because of the challenges inherent in measuring child development and the absence of specific curative and clearly effective treatments. However, combining developmental surveillance and periodic screening increases the opportunity for identification of undetected delays in early development. Overidentification of children using standardized screening tools may indicate that this group of children includes some with below-average development and/or significant psychosocial risk factors. These children may benefit from other community programs as well as closer monitoring of their development by their families, pediatric health professionals, and teachers or caregivers.

Table 1 in the original guideline document provides a list of developmental screening tools and their psychometric testing properties. These screening tools vary widely in their psychometric properties. This list is not exhaustive; other standardized, published tools are available. The guideline developers look forward to further evaluation/validation of available screening instruments as well as the continued development of new tools with stronger properties. Child health professionals are encouraged to familiarize themselves with a variety of screening tools and choose those that best fit their populations, practice needs, and skill level.

Incorporating Surveillance and Screening in the Medical Home

A quality-improvement approach may be the most effective means of building surveillance and screening elements into the process of care in a pediatric office. Improving developmental screening and surveillance should be regarded as a "whole-office" endeavor and not simply a matter of clinician continuing education or the addition of tasks to well-child visits. Front-desk procedures, such as appropriate scheduling for screening visits and procedures for flagging children with established risk factors, need to be explicitly designed by the office staff. Nonphysician staff may need training in the administration of developmental screening tools. The input of consumers is crucial to developing an effective system and can be accomplished by adding a parent to an office planning team, by using parent focus groups, or by administering parent questionnaires. Specific to developmental screening could be consumer opinion about preferences for completing questionnaires in the office or before the visit, how they would like to be informed about the results of screening, how parents of children with identified conditions associated with developmental delay would like to have their children's development monitored, or feedback on parental satisfaction with their child's developmental screening or feedback on the referral process.

Refer to the original guideline document for *Current Procedural Terminology* (CPT) codes for developmental screening and other information related to screening payment.

IMPLEMENTATION TOOLS

Clinical Algorithm

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness
Timeliness

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

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

DATE RELEASED

2006 Jul

GUIDELINE DEVELOPER(S)

American Academy of Pediatrics - Medical Specialty Society

SOURCE(S) OF FUNDING

American Academy of Pediatrics

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Section on Developmental Behavioral Pediatrics
Bright Futures Steering Committee
Medical Home Initiatives for Children With Special Needs Project Advisory
Committee

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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GUIDELINE AVAILABILITY

Electronic copies: Available from the [American Academy of Pediatrics \(AAP\) Policy Web site](#).

Print copies: Available from American Academy of Pediatrics, 141 Northwest Point Blvd., P.O. Box 927, Elk Grove Village, IL 60009-0927.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on August 18, 2006. The information was verified by the guideline developer on September 1, 2006.

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