

Developmental Screening Tool Selection Subcommittee

October 2, 2007



Committee Goals

- Develop and recommend a list of “approved” tools for use in the Maryland Healthy Kids program (EPSDT) for general developmental screening
 - Develop and recommend a smaller list of “recommended” tools for use in the Maryland Healthy Kids program for general developmental screening

Why?

- There are many tools available with variable psychometric characteristics and variable utility in a primary care setting
 - Some insurers in Maryland have expressed desire to have clear guidelines for providers regarding acceptable tools for use in developmental screening and billing 96110
 - Primary care providers have expressed need for guidance in terms of tool selection
 - Maryland children should be screened with the best available tools

Tonight's Goals

- Develop a list of tool selection criteria
- Develop a list of general developmental screening tools to review

Selection Criteria

- AAP
- Meisels
- Glascoe
- First Signs, Inc.
- Other states (Minnesota)

Proposed Selection Criteria

- Availability
- Instrument Purpose
- Developmental Domains
- Age Span
- Psychometrics
 - Standardization
 - Reliability
 - Validity
 - Sensitivity
 - Specificity

Proposed Selection Criteria

- Utility
 - Administration and scoring time
 - Training required
 - Reading level (Parent-report tools)
 - Cost
 - Availability in other languages

Availability

- Criteria: Instrument must be currently published and nationally distributed

Instrument Purpose

- Criteria: The instrument must be designed specifically for developmental screening, rather than for diagnostic evaluation/assessment or some other purpose

Developmental Domains

- Criteria: For general developmental screening, the instrument must include fine and gross motor, language, problem-solving/adaptive behavior, and personal-social domains

Age Span

- Criteria: The instrument must target children within the birth – 5 year age range (instrument does not need to target this entire age span)

Standardization

- Criteria: The instrument should have been administered to a large, nationally representative sample to determine the instrument's norms

Reliability

- Criteria: The instrument should have reliability scores of approximately .70 or above
 - The instrument will be evaluated on the actual reliability scores (ex. inter-rater, test-retest, internal reliability) and the methods used to obtain them

Reliability - Definitions

- Reliability: A statistical indicator of how consistently or how often identical test results can be obtained with the same screening instrument
 - Inter-rater reliability: Consistency of test results between two different examiners
 - Test-retest reliability: Consistency of test results obtained at two different time points
 - Internal reliability: Degree of similarity of an instrument's items

Validity

- Criteria: The instrument should have validity scores of approximately .70 or above
 - Each instrument will be evaluated on the actual validity scores (ex. concurrent validity, predictive validity) and the methods used to obtain them

Validity - Definitions

- **Validity:** A statistical indicator of the accuracy of the inferences that can be drawn from a test
 - **Concurrent validity:** a comparison of screening results with outcomes derived from a reliable and valid diagnostic assessment
 - **Predictive validity:** a comparison of screening results with measures of children's performance obtained several months later

Sensitivity and Specificity

- Criteria: The instrument should have sensitivity and specificity scores of .70 or above

Sensitivity and Specificity - Definitions

- Sensitivity: The proportion of children at risk for developmental delay who are correctly identified by the screening test
- Specificity: The proportion of children not at risk for developmental delay who are correctly labeled not at risk, i.e. correctly excluded from further diagnostic assessment

Utility

- **Criteria:** Considers length of administration and scoring, amount of training required, readability, cost, and availability in other languages
 - Length of administration and scoring: less than 30 minutes
 - Amount of training required: minimal training for professionals or paraprofessionals
 - Readability: no greater than 4th – 6th grade reading level for parent-report tools
 - Cost: tool should require minimal expense in order to be used successfully and continuously
 - Availability in other languages: instrument is available in languages other than English with appropriate psychometrics

Utility - Definition

- Utility: Usefulness of screening tool in varied practice settings with diverse patient populations

Tools to Review

- AAP
- Other states
 - Minnesota
 - Illinois
 - Utah
 - Iowa
- First Signs, Inc.
- Other?

General Developmental Screening Tools (AAP 2006)

- Ages and Stages Questionnaire (ASQ)
- Battelle Developmental Inventory Screening Tool (BDI-ST)
- Bayley Infant Neurodevelopmental Screen (BINS)
- Brigance Screens-II
- Child Development Inventory
- Child Development Review – Parent Questionnaire (CDR-PQ)
- Denver-II Developmental Screening Test
- Infant Development Inventory
- Parents' Evaluation of Developmental Status (PEDS)

General Developmental Screening Tools Recommended/Approved - Minnesota

- Ages and Stages Questionnaire
- Brigance Screens
- Child Development Review – Parent Questionnaire
- Developmental Indicators for Assessment of Learning – 3rd Edition (DIAL-3)
- Early Screening Inventory – Revised (ESI-R)
- Early Screening Profiles
- FirstSTEP Preschool Screening Tool
- Infant Developmental Inventory
- Minneapolis Preschool Screening Instrument – Revised (MPSI-R)
- Parents' Evaluation of Developmental Status

General Developmental Screening Tools Approved - Illinois

- Ages and Stages Questionnaire
- Battelle Developmental Inventory Screening Tool
- Bayley Infant Neurodevelopmental Screen
- Brigance Early Preschool Screen
- Chicago Early Developmental Screening Inventory
- Denver Developmental Screening Test/Denver II
- Developmental Profile-II
- Developmental Indicators for Assessment of Learning – 3rd Edition
- Early Screening Inventory
- Early Screening Profiles
- Minneapolis Preschool Screening Instrument
- Parents' Evaluation of Developmental Status
- Project Memphis DST
- Revised Developmental Screening Inventory
- Revised Parent Development Questionnaire

General Developmental Screening Tools Recommended - Utah

- Ages and Stages Questionnaire
- Child Development Review
- Infant Developmental Inventory
- Parents' Evaluation of Developmental Status

General Developmental Screening Tools Recommended/Approved - Iowa

- Ages and Stages Questionnaire
- Brigance Infants and Toddler Screen
- Bayley Infant Neurodevelopmental Screener
- Child Development Review
- Denver Developmental Screening Test
- Parents' Evaluation of Developmental Status

General Developmental Screening Tools Recommended – First Signs

- Child Development Inventory
- Parents' Evaluation of Developmental Status

Other?

- Revised Denver Prescreening Questionnaire

Next Steps

- List of general developmental screening tools will be reviewed based upon criteria selected
- Findings will be presented at next meeting, and final lists of “approved” and “recommended” tools will be developed
 - Criteria for future additions to the lists will be developed

References

- Council on Children with Disabilities, Section on Developmental Behavioral Pediatrics, Bright Futures Steering Committee, and medical Home Initiatives for Children with Special Health Care Needs Project Advisory Committee. “Identifying Infants and Young Children with Developmental Disorders in the Medical Home: An Algorithm for Developmental Surveillance and Screening.” *Pediatrics* 118 No.1(July 2006): 405-420.
- S.J. Meisels, S. Atkins-Burnett. *Developmental screening in early childhood: A guide*. (Washington, D.C.: National Association for Education of Young Children, 1997).
- F.P. Glascoe. “Standards for Screening Test Construction.” (Oct 2004, rev March 2005). <http://www.dbpeds.org>.

References

- First Signs, Inc. “Screening Tools Selection Criteria.” <http://www.firstsigns.org>.
- Utah Medicaid Provider Manual, CHEC Services. <http://health.utah.gov/medicaid/pdfs/chec/chec7-06.pdf>.
- Handbook for Healthy Kids Services, Chapter HK-200, Policy and Procedures for Healthy Kids Services. Illinois Dept. of Public Aid. <http://www.hfs.illinois.gov/assets/041404hk200.pdf>.
- Overview on Developmental Screening of Young Children in Minnesota. Minnesota Dept. of Health. <http://www.health.state.mn.us/divs/fh/mch/devscrn>.
- Provider Web Site, Iowa EPSDT Care for Kids. <http://www.iowaepsdt.org>