Developmental Screening
An Overview

Virginia Keane, MD
Associate Professor of Pediatrics
University of Maryland School of Medicine
President, Maryland Chapter, American Academy of Pediatrics

Jamie Perry, MD, Office of Genetics and Special Health Care Needs,
Marti Grant, RN, MA, Chief, Division Healthy Kids
Paul Lipkin, MD, Kennedy Kreiger Institute
Tracey King, MD, Johns Hopkins Department of Pediatrics
Pathfinders for Autism
Parents Place of Maryland
With Support from the Maryland Office of Maternal Child Health
and the Federal Bureau of Maternal Child Health
Learning Objectives

- AAP Guidelines on general developmental and autism screening
- Evidence supporting screening
- Maryland Recommended tools
- Steps in office based implementation
- Referral and follow up
- How to bill
Importance of early intervention:
First three years of life are critical to brain development

Model

- Early Identification
- Early Action Assessment and Treatment
- Improved Outcomes: Development, Behavior, School Readiness, School completion
What is Developmental Screening?

**Surveillance:** Flexible, longitudinal, continuous and cumulative process whereby knowledgeable health care professional identify children who may have developmental problems. (AAP 2006)

**Screening:** Administration of a brief standardized screening tool aiding the identification of children at risk of a developmental disorder. (AAP 2006)
Why Do Developmental Screening?

- Developmental delays /disabilities affect up to 10% of all children
- Many delays are subtle and may not be picked up by surveillance
  - Speech and Language delay: 5-10/100
  - Global delay: 2-3/100
  - Autism: 1/150
  - Intellectual disability (MR): 2-3/100
- Many parents report having their developmental concerns disregarded by their child health provider
- Early intervention can make a difference, especially with the subtle delays.
Developmental Screening

- A little Maryland history
  - Until 1997 Medicaid/Healthy Kids/EPSDT required screening using the DDST (Denver) for all well child visits 6 months to 6 years
  - Maryland did away with this requirement when Medicaid Managed Care was implemented in 1997
  - A 2005 focus group study revealed that Maryland pediatricians were evaluating development but not using a standardized screening tool
    - Personal judgment
    - Milestones on the EPSDT forms
    - Parents did not perceive that development had been assessed

- National studies support the Maryland findings: few child health providers do standardized developmental screening.
What is the Data on developmental Screening?

- Less than 50% of pediatricians use standardized screening tools
- Among those who do most
  - use it selectively
  - Use the DDSTII, even though better tools are now available
- Parents report significant lag between when they raise a concern and when evaluation occurs.
- While 10% of children have delays, only 2.3% participate in early intervention programs
  - Sices et al, 2003; Sand et al 2005
Using Standardized Screening Tools Improves Early Identification and Referral

- North Carolina: Clinician education and reimbursement increased screening from 15-70%, referrals to Early intervention increased from 2.6-7-8%, only 2% did not qualify for services (Earls, Pediatrics, 2006)
- Tennessee: saw a seven fold increase in referrals to Early Intervention
- Connecticut: Saw 2-3X increase in referrals, almost no unnecessary referrals
The 2006 AAP Policy Statement on Screening and Surveillance Goals

- Increase identification of children with developmental disorders by child health professionals
  - Improve methods of surveillance and screening
    - Greater consideration of motor and communication disorders
  - Provide concrete guidelines (algorithm)
    - Age-targeted screening
  - Eliminate barriers, e.g. reimbursement

- Improve medical assessment
The 2006 AAP Policy Statement on Developmental Surveillance and Screening:

- Working definitions:
  - **Surveillance** - continuous
  - **Screening** - periodic
  - **Evaluation** (vs. assessment) - diagnosis and treatment

- Emphasis on the identification of developmental disabilities

- Role of the Medical Home

- Practice challenges

- Reimbursement issues

- Medical evaluation

- Subspecialist role, community linkages
Identifying Infants and Young Children with Developmental Disorders in the Medical Home: An Algorithm for Developmental Surveillance and Screening

- Perform developmental **surveillance** at every well-child visit
- Perform developmental **screening** using a **standardized screening tool** at select age intervals (9, 18, 30* months) or when **concern** is expressed (may be done at 24-36 mos)
- If screening results are concerning, refer to developmental and medical evaluations and early intervention services
- Follow up on referrals made and continually track child’s developmental status
Developmental Surveillance

Developmental Screening

9 18 24-36
What to Do with the Results (AAP 2006)

- When the results are normal:
  - Inform the parents and continue with other aspects of the preventive visit.
  - Provide an opportunity to focus on developmental promotion.
- When administered due to concerns EVEN IF NORMAL
  - Schedule early return visit for additional surveillance, even if the screening tool results do not indicate a risk of delay.
  - Consider referral to Infants and Toddlers
- When results are concerning:
  - Schedule developmental evaluations.
  - Schedule medical evaluations at the discretion of the clinician.
  - Refer to Infants and Toddlers
Developmental Surveillance and Screening Algorithm Within a Pediatric Preventive Care Visit

1. Pediatric Patient at Preventive Care Visit
   - Perform Surveillance
   - Does Surveillance Demonstrate Risk?
     - Yes
       - Administer Screening Tool
       - Are the Screening Tool Results Positive / Concerning?
         - Yes
           - Make Referrals for Developmental and Medical Evaluations & Early Intervention / Early Childhood Services
         - No
           - Schedule Next Routine Visit
     - No
       - Schedule Early Return Visit

2. Visit Complete

3. Related Evaluation & Follow-up Visit
   - Schedule Early Return Visit
   - Is a Developmental Disorder Identified?
     - Yes
       - Identify as a Child with Special Health Care Needs
       - Initiate Chronic Condition Management
     - No
       - Visit Complete

Increasing Developmental Concern

Legend
- Start
- Action / Process
- Decision
- Stop
So, what’s next?

Implementation!
Integrating Screening Into Your Practice

- Which tool will you use?
- Who will administer it?
- Who will score it?
- How will it get to the clinician to assess and act?
- Where will you file it in the chart?
- How will you implement billing?
- How will you track referrals and follow up?
CQI: Continuous Quality Improvement

- A set of principles and methods that allow people to improve the processes and systems in which they work.
- Based on evidence allowing you to plan a change, implement, assess results and plan further change.
- You start with a plan, developed by the team of people who will create this change.
The Core Questions for Planning
Langley, Nolan and Nolan

- What are we trying to accomplish?
  - Define aim

- How will we know that change is an improvement?
  - Define measures

- What changes can we make that will result in improvement?
  - Identify methods
PDSA Cycles: a model for the work of improvement
Week one, doctors do screening, 20% eligibles get screened

Week two, desk staff has parent fill out questionnaire and collect it, nurses score, 80% done, 25% scored

Week three, desk staff gives questionnaire, nurse collect, 80% done and scored, doctor interprets 50%

Week four, parent advised by nurse to ask doctor the results of the screening, 80% interpreted

Little steps will get you there
Choosing Developmental Screening Tools

What’s best for your practice?
Some Issues to Consider in Selecting a Tool

- Psychometrics: sensitivity/specificity should be at least 70-80%
- Time/staffing required
- Cost and reimbursement
- Parent-completed versus directly administered
- Cultural and linguistic sensitivity
What About the Denver-II Developmental Screen?

- Concerns about low specificity
  - Study of 104 children age 3-72 months, over half of the children with normal development received abnormal, questionable, or untestable scores (specificity = 43%)
  - Leads to unacceptably high over-referral rate

- Lacks certain other validity studies

- Failed to meet the review criteria for inclusion in list of approved screening tools for Maryland EPSDT

*Pediatrics* 1992;89: 1221-1225
Time/Staffing/Cost

- How much time to complete and/or score tool?
- Who can administer and/or score tool?
- How much will it cost to screen with the tool?
- Can practice get adequately reimbursed for screening with tool?
Parent-Completed Screens: Advantages

- As accurate as screens using other measurement methods
- Take less physician time (which may translate into less cost)
- Don’t depend upon cooperation of child during office visit
- Bring parents more fully into screening process
Cultural and Linguistic Sensitivity

- Parent literacy: reading level of parent-completed tools
- Language: availability of tool in other languages represented in your population
Approved General Developmental Screening Tools for Maryland EPSDT

- Ages and Stages Questionnaire (ASQ)
- Parents’ Evaluation of Developmental Status (PEDS) +/- PEDS: DM
- Battelle Developmental Inventory Screening Tool, 2nd ed
- Brigance Screens-II
- Early Screening Inventory – Revised
- FirstSTEP Preschool Screening Tool
Recommended General Developmental Screening Tools for Maryland EPSDT

- Ages and Stages Questionnaire (ASQ)
- Parents’ Evaluation of Developmental Status (PEDS)
- Additional information on these tools, and how to purchase them can be found in your packets
## Screening Tool Comparison: ASQ vs. PEDS

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
<th>Cost</th>
<th>Admin Time</th>
<th>Psychometrics</th>
<th>Literacy/ Language issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASQ</td>
<td>Use 4-60 months 19 age-based forms 30 items per age</td>
<td>$199 per language Unlimited copies</td>
<td>10-15 minutes parent</td>
<td>Sens: .70-.90 (mod-high) Spec: .76-.91 (mod-high)</td>
<td>5th grade level English, Spanish, French, and Korean</td>
</tr>
<tr>
<td>PEDS</td>
<td>Use 0-8 years Single response form for all ages 10 items</td>
<td>$30 per 50 survey forms and 50 score sheets $70 manual</td>
<td>2-10 minutes parent</td>
<td>Sens: .74-.79 (moderate) Spec: .70-.80 (moderate)</td>
<td>5th grade level English, Spanish, French, Chinese, Arabic, Somali, etc</td>
</tr>
</tbody>
</table>
Autism Screening

- November 2007 AAP published Guidelines on Autism screening
- Autism spectrum disorders affect about 1/150 children:
  - Autistic disorder
  - Asberger syndrome
  - Pervasive developmental disorder NOS
- Survey results show that 44% of pediatricians care for > ASD children, but only 8% screen
- Recent research shows that early identification and therapy can improve outcomes
- Screening is recommended at 18 and 24 months
Examples of Parent-Completed Tools

- **Modified Checklist for Autism in Toddlers (M-CHAT)**
  - Currently most commonly used screen in primary care
    - [www.firstsigns.com](http://www.firstsigns.com)

- **Pervasive Developmental Disorders Screening Test-II, Primary Care Screener (PDDST-II PSC)**
  - [www.harcourtassessment.com](http://www.harcourtassessment.com)
## Screening Tool Comparison: M-CHAT vs. PDDST-II PSC

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
<th>Cost</th>
<th>Admin Time</th>
<th>Psychometrics</th>
<th>Literacy/ Language issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M-CHAT</strong></td>
<td>Use 16-48 months 23 items</td>
<td>Free (in public domain)</td>
<td>5-10 minutes parent</td>
<td>Sens: .85-.87 (moderate) Spec: .93-.99 (high)</td>
<td>? reading level English, Spanish, Turkish, Chinese, Japanese</td>
</tr>
<tr>
<td><strong>PDDST-II PSC</strong></td>
<td>Use 18-48 months 22 items</td>
<td>$149/kit $39/25 Response forms</td>
<td>10-15 minutes parent</td>
<td>Sens: .85-.92 (mod-high) Spec: .71-.91 (mod-high)</td>
<td>? reading level English</td>
</tr>
</tbody>
</table>
Developmental Screening: Normal Results (AAP 2006)

When the results are normal:

- Inform parents and continue with other aspects of the preventive visit
- Provides an opportunity to focus on developmental promotion
Developmental Screening: Concerns (AAP 2006)

- **When administered due to concerns:**
  - Schedule early return visit for additional surveillance, even if the screening tool results do not indicate a risk of delay

- **When results concerning, refer for:**
  - Developmental evaluations
    - Infants and Toddlers
    - Developmental specialists
  - Medical evaluations
  - Early developmental intervention/early childhood services: Infants and Toddlers
Developmental Screening: What Constitutes “Concerning” Results?

- Failed/abnormal/positive screen – Yes! Refer immediately to Early Intervention, Decide if further medical and developmental workup is needed

- “Borderline” screen? - Maybe
  - Use clinical judgment based on screening results and knowledge of child, family, risk factors to determine if referrals needed
  - At minimum, should schedule early return visit for additional surveillance/screening
Developmental Diagnostic Evaluation (AAP 2006)

- Performed when surveillance or screening identifies a child as being at high risk of a developmental disorder
- Performed by a developmentalist, neurologist, or early intervention specialist, or a specially trained generalist
- Aimed at
  - identifying the specific developmental disorder or disorders (and possible associated developmental and behavioral disorders)
  - Providing further prognostic information
  - Allowing prompt initiation of specific and appropriate early childhood therapeutic interventions
Medical Diagnostic Evaluation: Aim

- To identify an underlying etiology
  - May provide parents with a greater depth of understanding of their child’s disability
  - Can affect various aspects of treatment planning
    - Specific prognostic information
    - Genetic counseling around recurrence risk and family planning
    - Specific medical treatments for improved health and function of the child
    - Therapeutic intervention programming
Medical Diagnostic Evaluation

May be performed by any of the following:
- Trained and skilled general pediatrician
- Pediatric subspecialist
  - Neurodevelopmental pediatricians, developmental and behavioral pediatricians, child neurologists, pediatric physiatrists, or pediatric geneticists

Additional medical evaluation based on risk factors and findings and particular developmental disorder of interest
- Brain imaging, electroencephalogram (EEG), genetic testing, and/or metabolic testing
Early Developmental Intervention/Early Childhood Services

- Often provide evaluation and other services:
  - Developmental therapies
  - Service coordination
  - Social work services
  - Assistance with transportation and related costs
  - Family training
  - Counseling
  - Home visits

- Diagnosis not necessary for referral
Documentation and Billing “101”

Marti Grant, R. N., M.A.
Chief, Division of Healthy Kids
August 17, 2007
Developmental Screening
CPT 96110

Definition:
- Developmental testing; limited, with interpretation and report
- Must use a Standardized Screening Tool [ie. Ages and Stages Questionnaire (ASQ) or Parent’s Evaluation of Developmental Status (PEDS)]
- Code does not include “physician work” [ie. can be completed by parent or office staff, with physician interpreting results]
Documentation CPT 96110

Interpretation and Report:

- Document score and/or designation of screening test as normal or abnormal
  - “PEDS normal/no concerns” or “Abnormal PEDS – concerns in expressive language, social-emotional”
  - “Failed ASQ – communication and problem-solving”

- Document directly on the screening forms or in progress notes

- Keep screen score sheets in chart

- Document counseling and referrals for abnormal screening results
  [ie. Early Intervention, subspecialty evaluation]
Billing CPT 96110

How to bill MD Medicaid:
- Bill in conjunction with preventive care code, no modifier
- When indicated, may also use in conjunction with other appropriate outpatient E&M code [i.e. child brought back specifically for re-screen, or take advantage of missed opportunity by screening at sick visit]
- New this year: two units of 96110 allowed per visit per day by MD Medicaid (may add mental health, psychosocial or autism screen)
- Current reimbursement from MD Medicaid = $12.50 per unit of 96110
Billing CPT 96110

How to bill private insurers:

- Some will separately reimburse, some will not
- May need to use modifier -25 along with E&M service code
- Will need to consider a charge to families [recommend not greater than $15]
Conclusion

- Developmental screening using a standardized tool increases identification of children who may benefit from early intervention.
- Use a standardized, Md. Medicaid approved screening tool at 9, 18, and 24-36 months, and when concerns are raised.
- Use Autism screening tools at 18 and 24 months.
- Consider using Quality Improvement techniques to integrate screening into your practice.
- Refer for further assessment and early intervention all children who fail the screen, and closely follow or refer those who are of concern.
- Document your assessment and plan according to medicaid recommendations, and bill 96110.
- Private insurance payment varies plan to plan.