DEVELOPMENTAL SCREENING FOR THE PRIMARY CARE PRACTITIONER

Neelkamal Soares, MD, FAAP
Developmental-Behavioral Pediatrics, University of Kentucky

I have no financial disclosures to make, but I wish I did!

OBJECTIVES
- Recognize the importance of developmental screening in primary care
- Be aware of range of tools available for screening
- Recognize the financial implications of developmental screening
- Be familiar with autism screening methods
- Be aware of referral sources for children identified by screening methods

PRINCIPLES OF DEVELOPMENTAL SCREENING
- Cursory method for obtaining general information about a child's development and detecting any potential problems
- Not intended to be a comprehensive diagnostic process
- Typically used with large groups of children
- Should be brief and inexpensive
- Should have objective scoring systems that are valid and reliable.

SCREENING & SURVEILLANCE

Screening- A method for detecting disease or body dysfunction before an individual would normally seek medical care. Usually administered to individuals without current symptoms, but who may be at high risk for certain adverse outcomes.

Surveillance- Continuous, analysis, interpretation and feedback of systematically collected data, observing trends in place, persons and time.

WHEN TO CONDUCT SCREENING?
- At first encounter with neonate
- Surveillance at every well child visit
- Avoid screening at sick visits, during hospital stays
- Continue at yearly school/well-child visits even past 4 years of age (last regular immunization visit till 10-11 years)
- Emphasis shifts from pure developmental screening to school based screening: academic, perceptual, behavioral, emotional
WHO IS ELIGIBLE?
- For well-child care, all children
- Additional emphasis on:
  - Children with chromosomal/genetic problems
  - Children with neurological pathologies
  - "ex-premies" especially with gestational ages < 32 weeks and weights < 1200 grams
  - Prematurity poses special risk to health, development & behavior with both gestational age and birth weight are independent risk factors for several developmental disabilities

WHAT TO SCREEN & TRACK?
- Medical
  - General health, lungs, eyes, tone
- Developmental
  - Motor (gross & fine), Language, Social-emotional, cognitive/adaptive
- Behavioral
  - Temperament, behavioral problems, screening for psychiatric disorders
- Psychosocial
  - Family support system, socioeconomic status, transitions/significant change

WHY DEVELOPMENTAL SCREENING?
It's The Law!
- IDEA Amendments of 1997 mandates early identification and intervention for any individual with developmental disabilities
- Focus on community-based intervention (the concept of Part C IDEA services- Early Intervention)
- The IDEA requires physicians to refer children with suspected developmental delays in a timely manner to the EI

WHY DEVELOPMENTAL SCREENING?
It's Common!
- 12% to 16% of children have developmental or behavioral disorders
- Early recognition leads to early intervention which has been shown to have beneficial outcomes
- You’re It!
  - Primary care physicians are in regular contact with child from birth to adolescence
  - They are aware of underlying social, familial and environmental factors
  - Good opportunity to perform surveillance

SURVEILLANCE IS NOT ENOUGH
- Time constraints of typical well-child visits
- Relies on same physician monitoring child, not effective in multi-physician practices
- Primary MD “intuition” notoriously poor re. development (sensitivity ~ 20%) compared to standardized tools
- Inadequate training/experience of physician leads to poor surveillance

Adapted from Glascoe, FP
WHY DON’T WE SCREEN MORE?

- Common screening tools are some difficult to administer
- Children uncooperative
- Reimbursement and time limited
- Referral resources unfamiliar or seemly unavailable

ALL THESE ARE MYTHS!

CODING & BILLING FOR DEVELOPMENTAL SCREENING

96110 “developmental testing, limited”
- Used to cover the expenses in the use of a screening instrument. On the 2009 CMS Fee Schedule, a total RVU of 0.36 for 96110 = $12.98
- Expectation is that the screening tool will be completed by a non-physician and reviewed by physician
- No physician work is included in the RVU
- Reported in addition to E/M services provided on same date, with modifier (-25)
- Report for each screen administered
- Medicaid may not pay separately for developmental screening when provided as part of EPSDT

CHALLENGES WITH REIMBURSEMENT

- Billers don’t want physicians to bill developmental screening for fear of all submitted code being denied
- Uncertain about using modifier and 96110
- Carriers bundling into well-child visit
- Fear of cost being passed onto patients if denied

HOW TO OBTAIN INFORMATION

- History from caregiver
- Parent report checklists
- Standardized screening tools

ISSUES WITH CAREGIVER REPORT

- Historical bias (esp. if more milestones need to be elicited), inaccurate
- Poor recall of specific milestones
- Parents may not have frame of reference for norms and hence may not raise concerns
- Not standardized, may be incomplete and too subjective, also depends on interviewer’s index of suspicion and queries

PARENT REPORT INSTRUMENTS

- Parental concerns about development are highly predictive of true problems (70-80%)
- Parents become active participants in the evaluation of their children
- Several instruments have been tested in diverse populations and provide accurate information

LIMITATION:
- Illiteracy causes inability to read or understand the questionnaire/checklist
USE OF STANDARDIZED TOOLS

- Developmental-Behavioral screening is an ongoing and challenging process
- Screening tools with sensitivity & specificity of > 70-75% acceptable
- No one screening tool is recommended or preferred
- Choice based on reliability, use in population of interest and cost/availability

TOOLS AVAILABLE

- **Parent Questionnaires:**
  - PEDS (Parents’ Evaluations of Developmental Status)
  - Ages & Stages Questionnaire (ASQ) 2nd Ed
  - Child Development Inventories
- **Tools Directly Eliciting Children’s Skills:**
  - Bayley Infant Neurodevelopmental Screener (BINS)
  - Brigance Screens
  - Battelle Developmental Inventory

TOOLS AVAILABLE

- **Combination of Observation & Elicitation:**
  - Capute Scales (CAT/CLAMS)
  - Denver Developmental Screening Test (DDST-2)
  - Early Language Milestone Scale (ELMS)
- **Behavioral Screening Tools:**
  - Child Behavior Checklist
  - Eyberg Child Behavior Inventory
  - Pediatric Symptom Checklist

SENSITIVITIES OF SCREENING TESTS

- **Detection without Screening:**
  - 70% of children with developmental disabilities not identified (Palfrey, 1994)
  - 80% of children with mental health problems not identified (Lavigne, 1993)
- **Detection WITH Screening:**
  - 70-80% of children with disabilities identified (Squires, 1996)
  - 80-90% of children with mental health problems identified (Sturner, 1991)

A REASONABLE PROTOCOL

A MODEL DEVELOPMENTAL MONITORING PROGRAM

- **LEVEL 1 SCREENING**
  - Identify all or nearly all children with the problem with few false positives
  - Quick, comprehensive but brief
  - Children who are suspect or abnormal should have results confirmed with Level II screen or referred
- **Tools:**
  - Ages and Stages Questionnaire (ASQ)
  - Pediatric Evaluation of Developmental Status (PEDS)
  - Child Development Inventories (CDI)
  - Brigance Screens
LEVEL 2 SCREENING

- Multidomain Tools:
  - Denver II
  - CAT/CLAMS
  - Batelle Developmental Inventory Screening Test
- Language:
  - Early Language Milestone Scale (ELMS)
  - Receptive-Expressive Emergent Language Scale (REEL)
- Motor:
  - Infant Motor Screen
  - Bayley Infant Neuromotor Screener (BINS)
  - Milani Comparetti Motor Development Screening Test

LEVEL 3 SCREENING

- Multiple Domains Assessed:
  - Bayley Scales of Infant Development (Bayley-III)
  - Stanford-Binet Intelligence Scale (SB-5)
  - Vineland Adaptive Behavior Scale (VABS-II)
- Language Assessment
  - Infant-Toddler Language Scale (Rossetti)
  - Preschool Language Scale (PLS-4)
- Motor Assessment
  - Infant Motor Screen
  - Peabody Developmental Motor Scales (PDMS-2)

THE DENVER

- Screening tool that also allows for parental report and direct observation of the child from birth to 6 years age
- Four domains: personal-social, fine motor-adaptive, language and gross motor.
- Extensive normative sample
- However, original version had problems:
  - Failure of appropriate use in most pediatric settings (age line, tools, following manual)
  - Original version had
  - Poor sensitivity for language delay (30-40%)
  - Poor sensitivity for cognitive delay (50%)

IMPROVEMENTS IN DENVER-II

- Current version DDST-II (Frankenburg, 1990)
  - increase in language items
  - addition of articulation items
  - new age scale
  - a new category of item interpretation to identify milder delays
  - a behavior rating scale
  - new training materials

AUTISM SCREENING

- Rising prevalence of autism in the US
  - Current studies indicate 1:110 Children
- Emphasis on early screening, before 2 years
  - Early intervention shows significant improvement
- Lack of adequate training/exposure of primary physicians to ASDs
  - Cannot use “clinical judgment” or office-based
  - behavior as diagnostic process

WHO TO SCREEN FOR AUTISM?

- All children, during well-child visits
- Begin screening at 15-18 months age
- Prefer use screening tools rather than open ended questions or solely parent concerns
- Special attention to screening "high risk"
  - Siblings of individuals with autism
  - Children with genetic syndromes
- Tools used:
  - CHAT (Baron-Cohen)
  - M-CHAT (Pein, Robins et al)
  - STAT (Stone & Ousley)
USING THE m-CHAT

- M-CHAT is modified (Fein, Robins et al)
- Checklist for autism in Toddlers (Baron-Cohen)
- Used as parent report at 18-24 months age, at least twice before 3 years of age
- Yes/no responses over 23 items
- Sensitivity & specificity 85-95%
- Free to obtain, easy to use and score
- Fail 2 “critical” or any 3 items warrants concern and referral for diagnosis

AGES & STAGES QUESTIONNAIRES (ASQ)

- A different 5 page form for each well visit
- ~35 items per form describing skills
- Forms include helpful illustrations
- Takes 10 – 15 minutes, 5 to score

PARENTS' EVALUATION OF DEVELOPMENTAL STATUS

- For children 0 through 8 years
- In English, Spanish and Vietnamese
- Takes 2 minutes to score
- Sorts children into high, moderate or low risk
- Written at 4th – 5th grade reading level
- Screens for developmental and behavioral/mental health problems

CHILD DEVELOPMENT INVENTORY

- 3 screens for children 0 - 6 years:
  - Infant : 0 – 18 months
  - Early Child : 18 – 36 months
  - Preschool : 36 – 72 months
- Each screen has 60 items, 10 minutes for parents to complete, 2 minutes to score
- Written at the 9th grade level, available in English & Spanish

BRIGANCE SCREENS

- 9 separate forms across 0 – 8 year age
- Takes 10 – 15 minutes of time
- Detects children who are delayed as well as advanced, separate cutoffs for children at psychosocial risk
- Each produces 100 points and is compared to an overall cutoff
- Available in multiple languages, used by schools
- Computer scoring software

WHICH TEST TO PICK?

Pick One!
- Make sure that it covers the domains you want to track
- Never rely on one score on one test
- Be familiar with whichever test you choose
- Use it as suggested in the manual
- Parent checklists w/some direct observation is usually best
BEHAVIOR SCREENING

- Eyberg Child Behavior Inventory
  - 2 to 16 years of age
  - 36 statements of common acting out behaviors
  - Parents rate frequency & whether behavior is problem
  - Single cutoff score suggesting the presence of disruptive, externalizing behavior problem
  - Sensitivity & specificity 80%
  - Takes 5 mins to complete

- Pediatric Symptom Checklist
  - 4 - 18 years, 2-5 mins to complete
  - Freely download at http://psc.partners.org/
  - 35 statements of problem behaviors both externalizing and internalizing
  - Ratings of never, sometimes or often are assigned a value of 0,1,or 2.
  - Sensitivity (80-95%),specificity (68-100%)

ORGANIZING THE OFFICE FOR DEVELOPMENTAL SCREENING

- Complete parent report forms in waiting room OR designated person assist them
- Mail report tests prior to well child visits and turn in at sign in
- Set up return visit devoted to screening if developmental concerns raised at end of encounter OR administer screen over phone
- Designate individual to administer screening, provide parent counseling re. developmental issues, run parent training etc (NP or developmental specialist)

WHERE TO REFER

- For Children > 3 years of age:
  - School district of residence is responsible
  - Family requests evaluation by Admissions & Release Committee (ARC) with written request
  - School district is obliged to initiate evaluation within 30 calendar days if reasonable request based on concern/impact on education

- For Children < 3 years of age: First Steps
  - Early Intervention system of Kentucky, mandated by Part C IDEA
  - However, medical professionals must keep in mind:
    - Educational model, insist that you receive all records
    - Based on “consultative model”
    - Limits services based on “units” but have physician/family push for “record review” to intensify
    - Still taps Medicaid and non-Medicaid families have to pay a “share” (upto $ 100)
    - Evidence-based practices, esp. in autism
    - No consistency across regions, dependent on independent contractor practitioners
WHERE TO REFER

- For Children < 3 years of age:
  - For Medicaid children: EPSDT
  - For private insurance: approved providers

Remember to write a prescription with an ICD-9 code (e.g. 783.40 for developmental delay) and the words “evaluate and treat”