NCROCAP Conference, Monterrey
January 19, 2012
Toxic Childhoods: Environmental Toxicants, Trauma and Social Context.
Connecting Experts to Practitioners

What's Behind the Screen? :

An Overview and Practical use of Developmental Screens

Appropriate to Primary Care and Psychiatric Assessments

Neal Rojas, MD MPH
Assistant Clinical Professor,
Interim Clinical Director, Pediatric Behavioral Medicine
UCSF Benioff Children's Hospital

nrojas@sfghpeds.ucsf.edu

Disclosures

- I have nothing to disclose (no business arrangements with big pharma etc.)

Acknowledgements

- Lisa Albers- MD MPH

who provided several helpful slides

- Judy Jones , MD (for great slide ideas)
- John Knight, MD (for two great slides)

Objectives

1. To review the formal and informal criteria for effective developmental screening among children
2. To review some of the most commonly used developmental screening tools
3. To understand that screening can be distilled down to a handful of essential elements
4. To review what are the essential elements of developmental screening
5. To establish a practical approach to the patient utilizing these essential elements

Why Is Developmental Screening Important?

High rate of developmental/behavioral disorders

15-18% U.S. children have S/L impairments, MR, LD, emotional/behavioral disturbance

- **Low identification rate**

  20-30 % identified by primary care clinicians

- **Services** do exist for early intervention

  0 to 3 yrs: www.nectac.org/contact/ptccord.asp

- **Early intervention limits long-term morbidity**

Glascoe, 2000

Why Is Developmental Screening Important in Psychiatric care for Children?

- Importance of setting criteria for DSM diagnosis giving cognitive variance at age
- Need to also refer if delays are impacting function and well-being
- “Numerous studies document that up to 80% of foster children have developmental or mental health problems.”
- Unidentified and untreated mental disorders can mean the loss of critical developmental years and can lead to youth suicide, school failure and involvement with the juvenile justice and criminal justice systems.

  - AACAP Policy Statement 2007

What Is Screening?

"is a brief assessment procedure designed to identify children who should receive more intensive diagnosis or assessment" (Meisels SJ et al 1989)

…behind the screen?

Is the child in front of the screen the same as the child…

Illustrative Case

- Michael is a 23 month boy who has been in foster care for 4 months after both parents were incarcerated. He presents for evaluation for concerns regarding speech delay and aggressive behaviors
- Medical records indicate that he was putting words together at his last 18 month check up before his parents were found to have been trafficking methamphetamine
- He has been healthy but his current foster parents have noticed very little spontaneous speech, increased odd behaviors such as hand flapping and decreased eye contact
- An attempt to do some screening reveals: less than knowledgeable foster parents and a very uncooperative –stressed toddler
- *How would you proceed to evaluate or "screen" this child?*

Up Front Requirements of Screening

- Parent Report = parents present or someone very knowledgeable of child
- Stressed children = less than reliable snapshot of developmental trajectory and overall prognosis

How does screening change your view of the child?

Advantages

- Normalizes the measured attributes (compared to same age peers)
- Decreases clinical bias towards/against identifying differences

Disadvantages

- Attaches a somewhat arbitrary number to a complex person
- Often ignores context of child's environments or parent expectations and concerns

What is Surveillance?

- “”a flexible, longitudinal, continuous, and cumulative process aimed at identifying children who may have developmental problems and is performed at every well-child visit”

Lipkin (pg. 70, AAP DBP text)

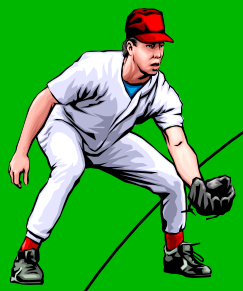
DEVELOPMENTAL Screening Vs. Surveillance

- Tests whole populations of children at various set ages
- To detect those at high risk for problems
- Public health driven

- No fixed ages (‘catch as catch can’)
- Covers all activities related to detection of problems with emphasis on parental concerns and skilled observations
- Patient driven

What Makes a Good Screening Tool?

- Low cost
- Easy to administer
- Early identification
- Common problem
- Effective intervention/ Reduced morbidity



Concurrent Validity

Criterion Validity

Hitting a Psychometric Home Run

Reliability

Predictive Validity

Courtesy of Ken Winters PhD and John Knight, MD

What Works

Validated Instruments

- Professionally-administered screening tests
- Parental concerns/questionnaires
  - Glascoe study showed relatively high sensitivity and specificity of parent concerns

Parent concerns

- If they're worried- we should be too!

- Parent report is an accurate indicator of true problems with:
  - Speech & language
  - Fine motor
  - General functioning

(FP Glascoe, Pediatrics 1997)

"Please tell me any concerns about the way your child is behaving, learning & developing…"

Utility of parent report measures

- Eliminate the need for child cooperation
- Data gathering while waiting
- Measures are valid for parents with wide range of education, parenting experiences
- Literacy may be a limiting factor
- Denial can exist
- Even when testing showed no major concerns *false positives* were more at risk
  - Glascoe 1997

What Doesn't Work

- Informal assessments
  not sensitive or specific
  - Review milestones
  - Clinical judgment/ gestalt
  - Check lists in the chart

Screening for Developmental Delay

PEDS & ASQ

PEDS
(Parents Evaluation of Developmental Status)

- Uses parental information
- Source: Available at www.pedstest.com for a price
- Languages: English, Spanish, Vietnamese
  - can obtain Hmung, Somali, Chinese, and Malaysian with special email
- Age Range: Birth to 8 years

PEDS (cont)

- **Description: 10 "carefully constructed" questions targeting parental concerns (developmentl/ academic/behavioral)**
- **Scores: "High, moderate, and low risk"**
- **Accuracy: Sensitivity ranging from 74-79%, specificity 70-80% across age levels**
- **Time Frame: "Two minutes or less"**
- **Cost: $1.19 including materials and administration time**

Ages & Stages Questionnaire

- Age: 0-60 months
- Parent questionnaire with clear drawings and easy directions to help parents rate various developmental skills
- Scores: Pass/Fail
- Accuracy:
  - Sensitivity 70-90% (except 4 mo)
  - Specificity 76-91%
- Time Frame: 10-15 minutes

Screening For School Readiness

- Developmental Indicators for the Assessment of Learning (DIAL-III)
- Source: www.pearsonassessments.com
- Languages:English and Spanish
- Age Range 3-6
- Parent role (may feel out questionnaire or simply observe you doing the DIAL)
- Time Frame 15-20 minutes (easy scoring)

Screening for Behavioral based Disorders

PSC, ECI and MCHAT

CBCL and BASC too

Pediatric Screening Checklist (PSC)

- *Source: Available at www.psc.partners.org free*
- *Languages: English and Spanish*
- *Age Range*: 4-18 years
- *Parents complete in waiting room*
- *Description*: 35 short statements of problem behaviors including both externalizing and internalizing behaviors.

PSC Continued…

- **Scores**: 24*/28 or higher = REFER
- **Accuracy**: All but one study showed high sensitivity (80-95%) but scattered specificity (68-100% based upon income
- ***Time Frame***: About 5 minutes, less if parent completes independently

Eyberg Child Inventory

- 36 questions about behavior rated on a scale from 1-7
- Scores
  - Refer/nonrefer score for intesity of problem
- Accuracy
  - Sensitivity 80%
  - Specificity 86%
- Time: 5 minutes

Modified Checklist for Autism in Toddlers (MCHAT)

- *Source: Available at the First Signs web site: www.firstsigns.org free*
- *Languages: English and Spanish (both at 4-6th grade reading level)*
- *Age Range*: 18-24 months and up
- **Description**: Parent report of 23 questions
- *Scores*: Cut-off based on 2/ of 3 critical items or any 3 from checklist

MCHAT Continued

- ***Accuracy***: Initial study showed sensitivity at 90% and specificity at 99%
- *Time Frame*: about 5 minutes
- *Cost*: approximately 1 dollar including copying and administrative costs
- ***What it screens for***: Autism spectrum disorders including PDD, NOS

M-CHAT
Critical sample items

Does your child:

- Take an interest in other children?
- Ever use his/her index finger to point, to indicate interest in something?
- Ever bring objects over to you to show?
- Imitate you? (eg you make a face)
- Respond to his/her name when you call?

After Concerning Screening

- Referral to appropriate community programs for further evaluation and interventions if needed:
  - EI 0-3 years
  - School Systems (>3 years)
  - Head Start (children in poverty)
  - Psychosocial Interventions
  - Pediatric Subspecialists

Examples of Intervention

- Laboratory assessment (Lead screen, genetic testing, imaging studies etc)
- Targeted therapies for specific impairments
  - PT, SLT, OT, Vision and Hearing aids etc
- Enrichment of environment (Head Start)
- Psychosocial Interventions

Billing

- 96110 Developmental Screening-Limited
  - May be review of parent/admin screen or ancillary staff conducted screen
  - (E/M-25 modifier)
- 96111 Extended Developmental Testing/ Evaluation
  - Reported in documantation “report”
  - (E/M-25 modifier)

Neal's Essential Elements of Screening/Surveillance

- PEDS: What are your concerns?
- MCHAT: Friends, and pointing
- DIAL: Play catch, blocks, rapid naming

- PLAY sets up rapport and ability to assess but can backfire if child gets to "reeved up"

Sources:

1. Frances Glascoe Ph.D. and Henry Shapiro MD. "Developmental and Behavioral Screening" www.dbpeds.org
2. Glascoe FP. "Parent's Concerns About Children's Development: Prescreening techique or Screening Test?" *Pediatrics* 1997;99;522-528.
3. Glascoe FP. Early Detection of Developmental and Behavioral Problems. Pediatrics in Review, August;2000;(21:8);272-280.
4. Shonkoff JP,Phillips DA (Eds).From Neurons to Neighborhoods The Science of Early Childhood Development, National Research Council. Institute of Medicine:2000
5. Drotar D et al. "Selecting Developmental Surveillance and Screening Tools," *Pediatrics In Review* 2008;29;e52-e58.
6. Meisels SJ, Provence S. Screening and Assessment. Guidelines for Identifying Young Disabled and Developmentally Vulnerable Children and Their Families. Washington, DC: National Center for Clinical Infant Programs; 1989

References: Guidelines

- AAP Policy Statement. Developmental Surveillance and Screening of Infants and Young Children. AMERICAN ACADEMY OF PEDIATRICS Committee on Children with Disabilities. Pediatrics 2001; 108:192-195, July 2001.

- AAP Policy Statement. Pediatrician's Role in the Diagnosis and Management of Autistic Spectrum Disorder in Children. AMERICAN ACADEMY OF PEDIATRICS Committee on Children with Disabilities. Pediatrics 2001; 107:1221-1226, May, 2001. Also see technical report at: http://www.pediatrics.org

- Filipek, PA, et al. Practice parameter: Screening and diagnosis of autism: Report of the Quality Standards Subcommittee of the American Academy of Neurology and the Child Neurology Society. Neurology, 2000; 55:468-479, August 2000.

Screening References

- Bright Futures Screening Guidelines
  www.brightfutures.org
- Healthy Steps:
  www.dbpeds.org/pdf/healthdevrec.pdf
- Early Intervention & school programs
  0 to 3 yrs: www.nectac.org/contact/ptccord.asp
  3 – 5 yrs: www.nectac.org/contact/619coord.asp
  5 and older, contact a school psychologist in the child's school of zone or your local school board; for help locating public schools: http://nces.ed.gov/ccd/schoolsearch/
- Autism/PDD screening – physician screening kit
  http://www.firstsigns.org

Why Is Developmental Screening Important in Primary Care Pediatrics?

- children 0-5 yrs are seen on a regular basis
- The primary care provider develops a relationship with child and family over time
- Mandated by the federal government and AAP to screen for developmental delay and refer appropriately

The Compromise

PROBLEM:

If barriers to developmental screening are insurmountable at this time can we achieve our goals through another approach**?**

SOLUTION

- Developmental Surveillance and *targeted screening*

The Case for Surveillance:

- Every encounter with a child is an opportunity to identify strengths and weaknesses which contribute to their well-being
  - Surveillance can be done to assess:
  - Developmental progress and readiness
  - Behavioral adaptation to stress
  - Environmental contribution to child function

Infant Development Inventory

- Age 3-18 months
- 60 yes/no questions covering 5 developmental domains
- Accuracy
  - Sensitivity 75% for detecting abnormalities
  - Specificity 70% for detecting normal development
- Time: 10 minutes
- Follow-up
  - CDI (Child Development Inventory) has 300 questions and can be used for f/u as a confirmatory screen

Pros and Cons
Screening vs. Surveillance

- More formal and standardized
- Less dependent on continuity and knowledge of child
- Discrete and known time duration

- Clinician driven to specific needs
- Care is more responsive to parents concerns
- Time is flexible, can do some at each visit

What Makes a Good Screen?

- Reliability:
- Concurrent Validity:
- Criterion Validity:
- Predictive Validity:
- Sensitivity:
- Specificity:

Benefits of Early Intervention

- Early life experiences are key in the development of a healthy individual
- EI is known to result in academic, social and financial benefits

(Glascoe 2000, Shonkoff 2000)

Top 6 Reasons for Not Screening

1. Not enough TIME
2. No TRAINING (to deal with positive screen)
3. Need to TRIAGE competing medical problems
4. Perceived lack of TREATMENT
5. TENACIOUS PARENT (hard to separate child/adult to get information)
6. Not familiar with screening TOOLS

Source: Van Hook et al., 2007

Take Home Points

- Developmental screening and surveillance are important in primary care
- Pediatric and Mental Health role can be vital
- Community resources are available for children and families

Barriers to Screening

- Only 30 % of pediatricians employ formal screening at any preschool visit

(Dobos, 1994; Glascoe, 2000)

- Unclear of other practitioners are higher or lower than this
- Why such a low rate of screening ?????
  - Not enough Time
  - No enough Training: Skills/Knowledge
  - Low reimbursement
  - Benefits of interventions unclear