Screening Overview

Purpose:
“The purpose of screening is to reduce the severity and impact of developmental problems on children and families.” While Screening looks at the whole population to identify those at risk and to flag those who need further assessment, Assessment determines the existence of delay or disability, and generates decisions regarding intervention. Surveillance provides for periodic assessment of development in relation to the child as a whole.

Considerations:
- AAP Committee on Children with Disabilities recommends the use of standardized screening tests at each well visit. (Note: In N.C., Medicaid children are eligible for well care only through the Health check program.)
- About 16% of children have disabilities including speech and language delays, mental retardation, learning disabilities, and emotional/behavioral problems.
- Only 30% of children with disabilities are detected prior to school entrance.
- Underdetection eliminates the possibility of Early Intervention.
- No point in waiting to screen until the problem is observable.
- Don’t ignore screening results…there is no value to “wait and see.”
- Informal checklists have no validated criteria for referral.

Tool Options:
Types of developmental screening tools include “Parent Questionnaire”, “History/ Interview”, “Direct Elicitation” and “Observation”. The following is an overview of seven screening tools available to physicians. Note: A complete list of tools, ordering information, and a discussion of the pitfalls of screening can be found at www.dbpeds.org.

1. Ages & Stages Questionnaire (ASQ) ®.: A Parent-Completed, Child-Monitoring System
   - Validation: Giselle, Bailey, Stanford-Bitnet, McCarthy, Bastille - overall agreement 83%.
   - Sensitivity: 72%
   - Specificity: 86%
   - Ages Tested: 4-60 months
   - Format: Each questionnaire has 30 questions completed by the parent. Reviews 5 areas: Communication, gross motor, fine motor, problem solving, personal/social.
   - Scoring: Answers are “yes, sometimes, not yet.” These are given a score, totaled and compared to cutoff points.

2. Bayley Infant Neurodevelopmental Screener (BINS)
   - Original Sample: High-risk nursery follow-up clinical sample Non-clinical sample of 600
   - Validation: Bayley, Batelle, and Denver II
   - Sensitivity: Excellent
   - Specificity: Excellent
   - Ages Tested: 3, 6, 9, 12, 18, 24 months
   - Format: Requires non-distracting environment with parent present and Tester seated across from infant. Chair, table, and kit are needed. At greater than 16 months the infant is required to walk, run, and climb stairs.
   - Scoring: Yields low, moderate, or high risk; high is to be referred for diagnostic testing; moderate may be referred, or at a minimum re-screened in 3 months.
3. **Parents’ Evaluation of Developmental Status (PEDS)**

- **Original Sample**: Standardized on 2823 children across the US
- **Validation**: Validated on 771 children
- **Sensitivity**: 74-80%
- **Specificity**: 74-80%
- **Ages Tested**: 0-8 years.
- **Format**: Parent questionnaire, same 10 questions used at all ages.
- **Scoring**: Responses are “no, yes, a little.” “Yes” or “a little” is considered a positive response. Parents’ concerns are categorized. Frequency and type of concern directs user to five evidence-based responses: refer, reassurance, promotes development, counsel, refer or do a secondary screen.

4. **Infant Development Inventory (IDI)**

- **Original Sample & Validation**: Specific information is available on their website [www.childdevrev.com](http://www.childdevrev.com)
- **Sensitivity**: Greater than 75% across studies in detecting children with difficulties
- **Specificity**: 70% in detecting normally developing children
- **Ages Tested**: 3-18 months
- **Format**: Direct elicitation or interview using milestones-based questionnaire
- **Scoring**: A single cutoff tied to 30% delay relative to chronological age.

5. **Brigance**

- **Original Sample & Validation**: A national sample was used and was validated against a range of measures. For more specific information please refer to Diagnostique, Volume 24, n1-4, pages 41-52, 1998-1999 or their website [http://www.curriculumassociates.com/](http://www.curriculumassociates.com/)
- **Sensitivity**: 70-82% across ages to giftedness and to developmental and academic problems
- **Specificity**: 70-82% across ages to giftedness and to developmental and academic problems
- **Ages Tested**: 0-90 months
- **Format**: One form for each twelve month age range (total of 9 forms). Direct elicitation and observation. 0-2 year age range can be administered by interview. Domains include speech-language, motor, readiness and general knowledge for. Older ages include reading and math.

6. **Pediatric Symptom Checklist (PSC)**

- **Original Sample & Validation**: “In a number of validity studies, PSC case classifications agreed with classifications of the Children’s Behavior Checklist, Clinical Assessment Scale ratings of impairment, and the presence of psychiatric disorder in a variety of pediatric and subspecialty settings representing diverse socioeconomic backgrounds.” Specific information on this citation and the studies, please see website [psc.partners.org](http://psc.partners.org).
- **Sensitivity**: 80-95% (all studies but one showed this level of sensitivity)
- **Specificity**: 68-100% (scattered across studies)
- **Ages Tested**: 4-18 years
- **Format**: 35 short statements of problem behaviors to include externalizing and internalizing. Responses never = 0, sometimes = 1 and often = 2. Final scores to indicate need for referral and to identify attentional, internalizing and externalizing problems.
# A Comparison of Available Screening Tools

<table>
<thead>
<tr>
<th></th>
<th>ASQ®</th>
<th>BINS</th>
<th>PEdS</th>
<th>IDI</th>
<th>BRIGANCE</th>
<th>PSC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type/Ages</strong></td>
<td>Parent Questionnaire 2 mos–5yrs.</td>
<td>Direct Elicitation 3 mos-24 mos</td>
<td>Parent Questionnaire 0-8 yrs.</td>
<td>Parent Questionnaire 3 mos-18 mos.</td>
<td>Direct Elicitation 21 mos -7.5 yrs.</td>
<td>Parent Questionnaire 6 -18 years</td>
</tr>
<tr>
<td><strong>Staff Required</strong></td>
<td>Para-professional</td>
<td>MA or Equivalent</td>
<td>Para-professional</td>
<td>Para-professional</td>
<td>Professional</td>
<td>Para-professional</td>
</tr>
<tr>
<td><strong>Time (Score)</strong></td>
<td>5 min.</td>
<td>10-15 min.</td>
<td>5 min.</td>
<td>10 min.</td>
<td>10-15 min.</td>
<td>7 min.</td>
</tr>
<tr>
<td><strong>Cost (Per Kit)</strong></td>
<td>$199</td>
<td>$195</td>
<td>$30 (pad of 50)</td>
<td>$11 (pad of 25)</td>
<td>$249</td>
<td>Freely Download</td>
</tr>
<tr>
<td><strong>Refills</strong></td>
<td>OK to copy</td>
<td>Needed</td>
<td>$30</td>
<td>$11</td>
<td>Contact company</td>
<td>OK to copy</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>English &amp; Spanish, French &amp; Korean</td>
<td>English</td>
<td>English &amp; Spanish, Vietnamese, Hmong, Somali</td>
<td>English &amp; Spanish</td>
<td>English &amp; Spanish</td>
<td>English</td>
</tr>
<tr>
<td><strong>Reading Level</strong></td>
<td>4th-6th Grade</td>
<td>NA</td>
<td>5th Grade</td>
<td>Contact company</td>
<td>NA</td>
<td>Contact company</td>
</tr>
</tbody>
</table>

*Note: A complete list of tools, ordering information, and a discussion of the pitfalls of screening can be found at [www.dbpeds.org](http://www.dbpeds.org).*