

# **Improving Early Childhood Standardized Surveillance & Screening Practices in Oregon**

**Prepared by the Oregon ABCD Early Childhood  
Screening Initiative Clinician Workgroup**

*A message from Dr. Kevin Marks, Oregon ABCD Pediatrician Champion:*

In 2008, according to the Commonwealth Fund report, Oregon ranked #43 in the nation in child health system performance<sup>i</sup>. Although the reasons are multi-factorial, this should be a wake-up call for us all. A comprehensive, long-term, serious, statewide effort is underway to dramatically improve the developmental and social-emotional well-being of Oregonian children. One can not underestimate the critical role that pediatric primary care providers play in our statewide effort.

Standardized screening practices within the medical home dramatically increase the early identification rates of delays, disorders and disabilities well before school entry. Early intervention has been proven to make a difference for those children falling behind. We realize that primary care providers may initially feel overwhelmed by our recommendations, which seem difficult to implement in a busy, chaotic clinic setting. We have given genuine consideration to clinic staffing constraints and to the limited amount of time available at well-child visits. We understand that feasibility matters.

Try beginning with a recommended general developmental screening tool and most likely, your practice will likely evolve to include social-emotional, autism-specific, post-partum mood disorder and other family psychosocial screening tools down the road. Evidence-based studies show that the quality of care and parental satisfaction at your well-child visits will soar upward.

This document was prepared for you to better understand and select the most effective and feasible screening tools, the ones we feel are best suited for Oregon's moderate- to high-risk socio-demographics, where 20 percent of our children are not prepared for kindergarten<sup>ii</sup> and 23 percent of children 0-6 years of age live in families below the federal poverty level<sup>iii</sup>. Practice by practice, community by community, let's rise to our state's challenge and make a long-term difference for Oregon's children and their families!

## Executive summary

The Assuring Better Child and Health Development (ABCD) Screening Initiative participated in a national learning collaborative to increase primary care providers' use of developmental screening tools for young children. The ABCD Screening Initiative Steering Committee and Clinician Workgroup encourage physicians to implement these recommendations.

The ABCD/OPS Clinician Workgroup recommends the following specific tools and screening periodicity to accurately and feasibly increase the identification rates of children up to 5 years old with developmental, behavioral and/or family psychosocial problems that will promptly target them for further evaluation, early intervention (EI) or early childhood special education (ECSE).

### ABCD Screening Initiative recommended tools

Screening	Recommended periodicity	Recommended tools
General developmental screening tools	9 (vs. 12), 18, 24 (vs. 30), 36 months of age*	<ul style="list-style-type: none"> <li>▪ Ages &amp; Stages Questionnaire (ASQ)</li> <li>▪ Parents Evaluation of Developmental Status (PEDS) with or without Parents Evaluation of Developmental Status: Developmental Milestones (PEDS:DM)</li> </ul>
Social-emotional screening tools	12 vs. 18 months; 3-5 years*	<ul style="list-style-type: none"> <li>▪ Ages &amp; Stages Questionnaire: Social-Emotional (ASQ:SE)</li> </ul>
Autism-specific or pervasive developmental disorder screening tools	18, 24 months	<ul style="list-style-type: none"> <li>▪ Modified Checklist for Autism in Toddlers (M-CHAT)</li> </ul>
Postpartum mood disorder screening tools	2 weeks vs. 2 months; repeat at 2 vs. 4 months if necessary	<ul style="list-style-type: none"> <li>▪ Edinburgh Postnatal Depression Scale (EPDS)</li> <li>▪ Beck Inventory II (BCI-II)</li> <li>▪ Patient Health Questionnaire-2 (PHQ-2 or PRIME-MD)</li> <li>▪ Patient Health Questionnaire-9 (PHQ-9)</li> </ul>
Family psychosocial screening tools	First office visit vs. 2 weeks	<ul style="list-style-type: none"> <li>▪ Bright Futures Pediatric Intake Form</li> <li>▪ Parent Point of Care Screening Tool</li> </ul>

\*Screening should also occur whenever parent, other caregiver or clinician has developmental and/or behavioral concerns about the child.



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Early detection of developmental and behavioral delays in young children will benefit them and their families for the rest of their lives. Child health providers want to ensure that children are healthy and achieving developmental milestones. The Clinician Workgroup of the Oregon Assuring Better Child Health and Development (ABCD) Screening Initiative recommends that child health providers implement a structured screening and surveillance program in their practices using established tools and processes that promote early intervention for children. With 20 screening tool options offered by the American Academy of Pediatrics in 2006, the Clinician Workgroup's primary question was, "Which specific tools and screening tool periodicity schedules are best suited to Oregon's primary care pediatric providers?" To avoid confusion and help foster implementation, Oregon's ABCD Clinician Workgroup established criteria and recommendations for screening. Clinicians should choose the tool(s) best suited to their own practices.

## Developmental surveillance

Surveillance, as defined by the AAP<sup>1</sup>, is a flexible, longitudinal, continuous and cumulative process whereby knowledgeable health care professionals identify children who may have developmental problems. Screening should always be complemented by quality developmental-behavioral surveillance that includes the following:

- Eliciting and attending to the parents' concerns, preferably with a standardized, reliable process;
- Maintaining a developmental-behavioral history at every well-child visit;
- Making accurate and informed observations about the child and the parent-child interaction;
- Identifying and tracking developmental-behavioral medical (e.g., prematurity) and family psychosocial (e.g., history of post-partum depression) risk factors along with protective factors (e.g., eligibility for early intervention services);
- Documenting and tracking the specific actions planned or taken (e.g., screening tool administered, completed, scored and interpreted), along with the subsequent findings (e.g., early intervention report reviewed);
- Surveillance should ideally always be complemented by developmental-behavioral promotional activities such as clinician counseling and reinforcing parental handouts (e.g. temper tantrum management and prevention)<sup>2</sup>

## General developmental and social-emotional screening

### A. Criteria

*Tools should be optimally designed as primary screens.*

The primary or "foundation" screening tool should be a general/broadband developmental-behavioral screen if the intent is to assess overall development. Domain- and disorder-specific screening tools should be used in conjunction with a quality general developmental-behavioral periodic screening schedule.

*To be effective, screening tools should:*

- Accurately identify children with and without developmental and/or behavioral delays and identify children who are at risk for future developmental and behavioral delays.
- Target the population most likely to experience the long-term benefits from early intervention and/or special education services, children 0–5 years of age.
- Be standardized on a large, nationally representative population (not a referred population) with at least 100 subjects per age range.
- Be periodically re-normed to reflect the changing socio-demographics of our nation and especially Oregon's children.
- Demonstrate concurrent, discriminate and, if possible, predictive validity studies. For criterion-related validity, the screen should have a sensitivity and specificity at minimum moderate (greater than 70 percent) and preferably moderate-high (greater than 80 percent).
- Demonstrate test-retest and inter-rater reliability greater than 85 percent along with high internal consistency.
- Be rigorously peer-reviewed in respected professional journals/publications to assure that the reported psychometric data have been accurately reported.

- Include parent teaching tools, such as developmental activity sheets or behavior-related handouts that can serve as a form of early intervention. Potentially delayed children may not qualify for early intervention services or receive full diagnostic evaluation at an Early Intervention (EI) or Early Childhood Special Education (ECSE). Some of the available screening tools make it easier for parents to monitor and intervene with potential delays.

***To be feasible, screening tools should:***

- Ideally be demonstrated to be feasible and sustainable in other states or practices where standardized screening has already been implemented in a primary care setting.
- Takes no longer than 15 minutes to administer so parents are able to complete the questionnaire before the well-child visit begins. Screening tools with shorter administration times will logically lead to higher return/completion rates. Screening times and return rates will vary based on staff education, practice style, patient volumes and patient socio-demographics: younger parents are less likely to return the screen. Return rates will also vary based on when (before or after the well-child visit), where (reception area, exam room or at home) and how (e.g., paper and pen, online, mailed from home) the screen is completed. Shorter completion times should be balanced with the goal of having parents fill out the questionnaire in an accurate and thoughtful manner.
- Administered by parents, medical assistants or registered licensed practical nurses.
- Should be written at no more than a sixth-grade reading level.
- Be available in at least English and Spanish.
- Contain straight-forward scoring and referral criteria.
- Be presented to the clinician, organized in definable risk groups with specified follow-up steps.
- Be reasonably priced so all types of practices can participate.
- Ideally have online capabilities compatible with electronic medical records. This is not a universal requirement and is practice-dependent.

## **B. Recommended general developmental and social-emotional tools**

The recommendations and criteria are for a quality general developmental screen as the foundation screening tool. After implementing a general tool (like the ASQ or PEDS), screening in a primary care setting typically evolves to include supplemental social-emotional, autism-specific, postpartum mood disorder and other psychosocial screening tools.

### **General developmental**

Periodicity: 9 (vs. 12), 18, 24, (vs. 30), 36 months of age.

#### ***Tools:***

- Ages & Stages Questionnaire (ASQ);
- Parents Evaluation of Developmental Status (PEDS) with or without Parents Evaluation of Developmental Status: Developmental Milestones (PEDS:DM).\*

\*Please note: the PEDS:DM validity data was extrapolated from the Brigance and was not based on clinical trials.

### **Social-emotional screening**

Periodicity: 12 vs. 18 months; 3-5 years of age.

#### ***Tools:***

- Ages & Stages Questionnaire plus Social-Emotional (ASQ-SE).

### **Tool Resources**

- Ages & Stages Questionnaire (ASQ) or ASQ:Social-Emotional (ASQ:SE), [www.brookespublishing.com](http://www.brookespublishing.com);
- Parents Evaluation of Developmental Status (PEDS) or PEDS:Developmental Milestones (PEDS:DM), <http://pedstest.com>.

Table 1: Characteristics of recommended developmental screening tools

	General developmental screening tools <sup>3</sup>		Social-emotional screening tools		Autism-specific screening tools	
	ASQ	PEDS	ASQ:SE	MCHAT		
<b>EFFECTIVENESS</b>						
Type of tool	General	General	SE	Autism-specific		
Age range	2 – 60 mo.	0 – 8 yrs.	3 – 65 mo.	16 – 48 mo.		
Sensitivity	70 – 90%	74 – 79%	71 – 85%	85%		
Specificity	76 – 91%	70 – 80%	90 – 98%	93%		
Positive predictive value	24.5 – 100%	Unknown	61 – 91%	36%		
Validity ratings of studies (STARD)	9	9	Unknown	Unknown		
Reliability, internal consistency	54–83%	81%	67 – 91%	85%		
Reliability, test-retest	94%	88%	94%	85%		
Reliability, inter-rater	94%	95%	Unknown	85%		
Peer-reviewed studies	6	5	4	Many		
Standardization sample (N)	2008	661	3014	4200		
Periodically re-normed	Yes	Yes	Yes	Yes		
Parent Teaching tool	Yes	Unknown	Yes	No		
<b>FEASIBILITY</b>						
Proven feasible in a real-world clinic setting	Yes	Yes	Yes	Yes		
Administration time	10 – 15 min.	2 – 10 min.	10 – 15 min.	5 – 10 min.		
Parent-completed	Yes	Yes	Yes	Yes		
Para-professional scoring	Yes	Yes	Yes	Yes		
Readability (grade level)	4th – 6th	4th – 5th	4th – 6th	1st – 2nd		
English & Spanish	Yes	Yes	Yes	Yes		
Straightforward scoring & referral criteria	Yes	Yes	Yes	Yes		
Definable risk-groups& f/u steps	Yes	Yes	Yes	Yes		
Cost (may vary, refer to Web site)	\$199; may be copied for free	\$3.50/guide; \$30/50 admin. & scoring forms	\$149; may be copied for free	Free online		
<b>EMR-compatible online version</b>	Yes, 2007 tool	Yes	Under development	Yes		

<sup>4</sup> Identification and Evaluation of Children with Autism Spectrum Disorders”, AAP Policy Statement, Pediatrics, November 2007, <pediatrics.aappublications.org/cgi/content/full/120/5/1183>

## Autism screening in the medical home

### A. Criteria

The same criteria are used for autism as the general developmental screening tools, which include the following: parent reporting and physician interpretation, feasibility in practice, standardization, validity and availability in at least Spanish and English. The M-CHAT best fits these criteria. Other tools are recommended in Level 1 of the 11/2007 AAP Statement, *Identification and Evaluation of Children with Autism Spectrum Disorders*.<sup>4</sup>

### Autism-specific or pervasive developmental disorder screening

Periodicity: 18, 24 months.

#### Tools:

- Modified Checklist for Autism in Toddlers (M-CHAT). Criteria: Standardized, reliable and feasible; completion time 5–10 minutes<sup>5</sup>; however, many have found that the M-CHAT can be promptly scored, reviewed and interpreted under two minutes at the time of the well-child visit with the use of an overlapping transparent scoring sheet.  
Available at: [www.dbpeds.org/articles/detail.cfm?TextID=466](http://www.dbpeds.org/articles/detail.cfm?TextID=466).

## Postpartum mood disorder and family psychosocial screening

### A. Criteria

Family psychosocial risk screening follow the same criteria as the general development tools, including parent reporting, physician interpretation, feasibility in practice, standardization, validity and availability in at least English and Spanish.

### B. Recommended tools

The following postpartum mood disorder and/or family psychosocial risk screening tools are recommended in conjunction with a quality developmental-behavioral surveillance and screening system. These tools will: 1) benefit both the child and family; 2) help guide the periodic use of a developmental and/or behavioral screening instrument; and 3) may alter the clinician's (or parent's) threshold for a community-based, EI/ECSE and/or pediatric sub-specialist referral.

### Postpartum mood disorder screening

Periodicity: 2 weeks vs. 2 months of age; repeat at 2 vs. 4 months if necessary.

#### Tools:

- **Edinburgh Postnatal Depression Scale:**  
Standardized, reliable and feasible tool that screens for postpartum mood disorders (bipolar, depression and/or anxiety); consists of 10 items that produce a possible depression score administered 2-12 weeks postpartum<sup>6</sup>. Sensitivity is 0.86; specificity is 0.78; positive screen is greater than or equal to 10<sup>7,8</sup>. Administration time is less than five minutes; self-administered with simple, clinician-friendly direct scoring.  
Available free at [www.dbpeds.org/articles/detail.cfm?TextID=485](http://www.dbpeds.org/articles/detail.cfm?TextID=485).

- **Beck Inventory II:**  
Standardized, reliable and feasible tools that screen for postpartum mood disorders (bipolar, depression and/or anxiety) and consist of 21 items (11- or 13-item options available). Sensitivity is 56-57 percent; specificity is 97-100 percent; positive predictive value is 90-100 percent<sup>9</sup>. Administration time is less than five minutes. The mother completes the questionnaire, which is available in several languages with direct scoring<sup>10</sup>. Available at \$99 for manual and forms kit from [harcourtassessment.com/HAIWEB/Cultures/en-us/Productdetail.htm?Pid=015-8018-370&Mode=detail&Leaf=avproducts](http://harcourtassessment.com/HAIWEB/Cultures/en-us/Productdetail.htm?Pid=015-8018-370&Mode=detail&Leaf=avproducts).
- **Patient Health Questionnaire-2 (PHQ-2 or PRIME-MD)<sup>11</sup>:**  
Brief two-item standardized tool that screens for parental depression, to be followed up with a more comprehensive screening or in-person evaluation; sensitivity is 0.83; specificity is 0.92; positive screen is greater than or equal to 3; less than one minute; self-administered or done through interview. Available free at [www.commonwealthfund.org/topics/topics\\_show.htm?doc\\_id=416724](http://www.commonwealthfund.org/topics/topics_show.htm?doc_id=416724).
- **Patient Health Questionnaire-9 (PHQ-9)<sup>12</sup>:**  
A nine-item tool that assesses DSM-IV symptoms present in the past two weeks that can be used for both diagnosis and monitoring symptom severity during treatment; sensitivity is 0.88; specificity is 0.8; positive screen greater than or equal to 10; 5-10 minutes; self-administered and self-scored. Available free at [www.depression-primarycare.org/clinicians/toolkits/materials/](http://www.depression-primarycare.org/clinicians/toolkits/materials/).

### Family psychosocial screening

Periodicity: First office visit vs. 2 weeks of age.

#### **Tools:**

- Bright Futures Pediatric Intake Form (also known as Family Psychosocial Screen)<sup>13</sup>:  
Screens for depression as well as substance abuse, domestic violence and other risk factors (e.g., socioeconomic status, absence of social support); also provides general background, past medical history, social and family history information (including questions regarding learning, mental illness, drinking, drug or other problems. Often used as a clinic intake form. Available free at [pedstest.com/content.php?content=download\\_resources.html](http://pedstest.com/content.php?content=download_resources.html) or from Bright Futures at [www.brightfutures.org/mentalhealth/pdf/tools.html](http://www.brightfutures.org/mentalhealth/pdf/tools.html).
- Parent Point of Care Screening Tool,  
American Academy of Family Physicians (AAFP)<sup>14</sup>:  
A self-reported tool with a few questions for initial screening about depression, alcohol problems and intimate-partner violence. A positive answer to any question is confirmed by the physician, who then schedules or refers for a more detailed interview or diagnostics. [www.aafp.org/afp/20040515/poc.html](http://www.aafp.org/afp/20040515/poc.html).

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## Endnotes

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