Strengthen the Evidence for MCH Programs: Environmental Scan of Strategies

National Performance Measure (NPM) #6: Developmental Screening

Percent of children, ages 10 through 71 months, receiving a developmental screening using a parent-completed screening tool

Introduction

This environmental scan identifies collections of strategies to advance performance for NPM #6, Developmental Screening. The information provided in this document focuses on strategies to achieve the NPM, not on the content of care or specified health outcomes. Please note that the quality of the evidence in this compilation has not been evaluated, and that data sources describing a single strategy, rather than a collection of strategies, have been excluded.

This compilation includes the following sections:

- **Reviews and Compilations**: Identifies existing compilations for strategies that intend to improve performance for each measure
- **Frameworks and Landmark Initiatives**: Frameworks includes conceptual models underlying strategy implementation; Landmark Initiatives include seminal programs/policies related to the NPM
- **Data Sources**: Indicates sources, search criteria, links to search strategy and selected organizational websites
- **Inclusion and Exclusion Criteria**: Denotes types of studies, setting, populations of interest and exclusion criteria

Technical assistance for State Title V MCH programs related to using evidence to inform State Action Plans, selection of strategies, and development of evidence-based or evidence-informed Strategy Measures may be requested at [http://www.semch.org/technical-assistance.html](http://www.semch.org/technical-assistance.html)

Table of Contents

- Reviews and Compilations .........................................................................................................................................................2
- Frameworks and Landmark Initiatives .................................................................................................................................9
- Data Sources ..............................................................................................................................................................................11
- Inclusion and Exclusion Criteria ...........................................................................................................................................13
## Reviews and Compilations

<table>
<thead>
<tr>
<th>Review/Compilation</th>
<th>Summary</th>
<th>Web Link</th>
</tr>
</thead>
</table>
- Looks at the degree to which children currently receive developmental screening, the role of child care and early education programs in connecting children to developmental screening, national efforts and funding streams to support developmental screening, and state policy examples and recommendations stakeholders can draw on when considering expanding access to developmental screening in early childhood settings  
  - Current trends in access to developmental screening  
  - Through health providers  
  - Strategies to increase access to developmental screening  
  - Privately funded national initiatives  
  - Federal attention: Multi agency initiative *Birth to 5: Watch Me Thrive!*  
  - Role of child care and early education  
  - Head Start  
  - IDEA Parts B & C  
  - Medicaid Policy  
- Challenges in expanding access  
- State policies supporting developmental screening in child care  
| King et al. (2010). Implementing developmental screening and referrals: Lessons learned from a national project. *Pediatrics.* [Target: B,C] | - Objective: “To assess the degree to which a national sample of pediatric practices could implement American Academy of Pediatrics (AAP) recommendations for developmental screening and referrals, and to identify factors that contributed to the successes and shortcomings of these efforts”  
- Implementation project: Developmental Surveillance and Screening Policy Implementation (D-PIP), 17 practices from 15 states  
- Quantitative assessment of each practice’s implementation of screening and referrals performed by employing an interrupted time series design with case studies to identify factors associated with success and challenges in expanding access to developmental screening | http://dx.doi.org/10.1542/peds.2009-0388 |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nelson et al. (2006).</td>
<td>Screening for speech and language delay in preschool children: systematic evidence review for the US Preventive Services</td>
</tr>
</tbody>
</table>

| Time series design; rates of screening, failed screens, and referrals were calculated across sites on a daily basis |
| - Fifteen practices used 1 or both of 2 instruments: ASQ & PEDS |
| - One practice used either Denver II or PDQ |
| - One practice started with Denver II and switched to Bayley Infant Neurodevelopmental Screener (BINS) |
| - Longitudinal qualitative study conducted to characterize the experiences in practices in implementing the policy statement's recommendation |
| - Themes: Considerations in selecting screening instruments; Need for practice-wide systems to implement practice; Common challenges to implementation; Deviations from the AAP algorithm; Lessons learned from referral-tracking efforts |
| - "Doesn't go into detail about implementation strategies used; says " most clinics divided responsibilities among staff at multiple levels" and "practices generally adhered to the steps described in the algorithm included in the AAP policy statement" |

| http://dx.doi.org/10.1097/01.NPR.0000456396.62414.14 |

| Nelson et al. (2006). | Evaluation of the strengths and limits of evidence about the effectiveness of screening and interventions for speech and language delay in preschool-aged children to determine the balance of benefits and adverse effects of routine screening in primary care for the development of guidelines by the US Preventive Services Task Force |
| - Only RCTs considered for examination of effectiveness. |
| - 745 articles were reviewed; data was extracted, summarized, |

| http://dx.doi.org/10.1542/peds.2005-1467 |
| Task Force. *Pediatrics*. [Target: B,C] | and rated for quality using study design-specific criteria  
• Use of risk factors for screening has not been evaluated; characteristics of evaluation techniques were described – no ‘gold standard’ has been developed for screening |
| Rydz et al. (2005). Developmental screening. Topical review. *Journal of Child Neurology*. [Target: B,C] | Describes the properties of screening tests, evaluates the available tools for developmental screening while providing a representative sample of the currently available developmental tests, and attempts to evaluate the available intervention programs  
http://dx.doi.org/10.1177/08830738050200010201 |
• 268 articles reviewed; 11 articles met criteria  
• Lack of data on identification of developmental disorder  
  o Some studies only examined identification of behavioral problems, only language delays, or a variety  
  o This is important because pediatricians’ accuracy might vary according to type of problem  
  o No studies looked at both developmental & behavioral problems in the same children, so we can’t determine if identification of one influences detection of the other  
http://dx.doi.org/10.1542/peds.2010-3261 |
• Screening tests included recommended tests recommended by Bright Futures/AAP (includes developmental screening)  
• 23 articles reviewed; 8 articles covered interventions related to developmental screening  
  o RCT: *Healthy Steps* program (Minkovitz et al., 2003)  
  o Pre-post design: *EMT template* with prompts to improve preventive care services (Adams et al., 2003)  
  o Pre-post design: Provider education and support tools to implement *Pediatric Symptom Checklist (PSC)*  
(Applegate et al., 2003)
- Pre-post design: Bright Futures Training Intervention Project: learning collaborative/quality improvement (Lannon et al., 2008)
- Post-intervention group only: Implementation of developmental screening using PEDS (Schonwald et al., 2009)
- Time Series: Quality Improvement initiative to improve child development services (Earls et al., 2006)
- Time Series: Provider and staff education, physician champion identification (King et al., 2010)
- Overall, interventions were multifaceted & included change on various levels (e.g. provider/staff training, EMR, learning collaboratives, etc.)

- Describes the strategies that state Title V and early childhood programs and partners are using to improve aspects of developmental screening process; types of information available in qualitative data set
- Method 1: Qualitative analysis of 185 source documents
  - HRSA State Autism Planning and Implementation Grant Narratives and Reports
  - CDC Learn the Signs. Act Early. State Systems Grant applications and reports
  - Act Early Summit Plans and recommendations
  - State Blueprints and Plans
  - State Taskforce Reports
  - State Guidelines
  - State Autism Resource Documents
  - Other related reports and case studies
- Method 2: Scan of the Title V Information System (TVIS) for state priority needs & PM that relate to developmental screening and early identification

• Themes in “Strategies to Increase Developmental Screenings and Improve Systems”
  - Trainings to improve screening rates and capacity
  - Efforts to increase awareness and education
  - Intensive TA/QI and learning collaboratives
  - Developmental screening resources

• Themes in “Date Collection, Measurement, and Infrastructure”
  - The range of data sources states use to assess rates of screening, early identification, and children and families affected by ASD/DD
  - Strategies to improve and streamline systems for data collection and tracking
  - Measurement and evaluation approaches to determine progress and outcome
  - Additional data elements that provide insight into state screening and early identification systems

• Also in report: Coordinating Systems and Services, Challenges/Barriers, Policy Strategies, Sustainability Strategies, State Highlights from Peer-to-Peer Exchange

One document of a set of SPHARC resources focused on state systems for autism and developmental screening
Describes common barriers states face in meeting recommended screening rates
Includes examples of state strategies used to combat challenges and improve screening and early identification systems
Strategies arranged by type of challenge:
  - Provider/Practice Level
  - Policy and Public Health Coordination
  - Family and Community
| **CDC Developmental Monitoring and Screening for Health Professionals** [Target: B,C,G] | • Monitoring and screening recommendations based on AAP recommendations  
• Developmental screening in pediatric primary care practice, includes flowchart  
• Involving families in monitoring and screening  
• Types of screening tools | http://www.cdc.gov/ncbddd/childdevelopment/screening-hcp.html |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Georgetown University National Center for Education in Maternal and Child Health (NCEMCH)</strong> [Target: B,C,D,E,G,H]</td>
<td>• Resources for state MCH programs regarding developmental screening in general, and about parental tools for screening</td>
<td><a href="http://ncemch.org/evidence/NPM-6-developmental-screening.php">http://ncemch.org/evidence/NPM-6-developmental-screening.php</a></td>
</tr>
</tbody>
</table>
| **National Academy for State Health Policy (NASHP). (2009). State Strategies for Care Coordination, Case Management, and Linkages for Young Children: A Scan of State Medicaid, Title V, and Part C Agencies.** [Target: B,C,D,E,H] | • State scan developed to elicit strategies employed by the three state agencies to improve healthcare and enhance community linkages in three areas: 1) within primary care practices; 2) between primary care practices and 3) through systems or statewide strategies  
• Resulting themes:  
  o States are using the Medical Home model to strengthen linkages in primary care  
  o There are a broad variety of service provider partnership strategies being used across all three agencies  
  o States are working to address communication barriers through fax or report-back policies  
  o Health Information Technologies (HIT), Data and Information Systems, and Cross-Agency Planning are all being used within cross-systems strategies  
  o All three agencies are using available resources and tools to strengthen linkages  
  o Medicaid tends to employ primary care strategies  
  o Title V agencies and programs often focus on making connections with other organizations by improving communication and outreach | http://www.nashp.org/wp-content/uploads/sites/default/files/ABCDScan.pdf |
Part C agencies work closely with primary care

- Some strategies noted in scan responses may denote underutilized resources for states


- Federal effort to improve developmental and behavioral screening
- Includes compendium of research-based developmental screening tools

http://www.acf.hhs.gov/programs/ecd/child-health-development/watch-me-thrive

---

1 Target specifies Target Audience for the strategies mentioned in each Review/Compilation: A = Hospital Inpatient (includes physical, mental, and oral health); B = Hospital Outpatient (includes physical, mental, and oral health); C = Non-Hospital Outpatient Providers (e.g. community health centers, private medical groups, health maintenance organizations); D = Community Organizations (e.g. WIC, advocacy organizations, child care providers, home visiting services); E = Social Service Organizations (e.g. Head Start, child welfare); F = Schools and School Systems; G = Consumers/Families; H = Other
## Frameworks and Landmark Initiatives

<table>
<thead>
<tr>
<th>Framework/Initiative</th>
<th>Summary</th>
<th>Web Link</th>
</tr>
</thead>
</table>
| Bricker et al. (2013). Developmental Screening in your Community: An Integrated Approach for Connecting Children with Services. | • Describes systematic approach to establish effective *early detection* and *Child Find systems* in the community  
• Guidance on 6 key components of community-wide early detection                                                                 | N/A                                                                                         |
| Assuring Better Child Health and Development Initiative (ABCD)                        | • Administered by NASHP; funded by the Commonwealth Fund  
• Since inception in 2000, has helped 27 states develop service delivery and financing models that focus on children’s preventive care that is covered by state health care, especially Medicaid  
• Has influenced, as well as been influenced by national efforts  
• The Child and Adolescent Health Measurement Initiative (CAHMI), in conjunction with NASHP and ABCD states, created a developmental screening measure which was included in CHIPRA core measure set | http://www.nashp.org/abcd-12-years-promoting-healthy-child-development/                      |
| Collective Impact Framework                                                          | • Community organizing model that goes beyond coordination; achieved when a multidisciplinary group of stakeholders assemble to “solve a significant problem and achieve a specific outcome” (Kania & Kramer, 2011)  
• Describes, classifies, attempts to evaluate categories of relevant to this topic (screening tools, intervention programs, evaluation & referral) | https://www.clinicalkey.com/#/content/playContent/1-s2.0-S0002838X11602967?scrollTo=%23refInSitubib33  
http://dx.doi.org/10.1542/peds.20 |
- General QI models are based on PDSA models  
  - Planning: Identifying problem and potential solution  
  - Doing: Actually testing out the proposed solution  
  - Studying: Measuring to see if the solution worked  
- Acting: Implementing the successful solution (U.S. Department of Health & Human Services [HHS], 2014) | PDSA components:  
- [http://dx.doi.org/10.1542/peds.2006-0475](http://dx.doi.org/10.1542/peds.2006-0475)  
- [http://dx.doi.org/10.1542/peds.2007-2700](http://dx.doi.org/10.1542/peds.2007-2700) |
| Quality Improvement (QI) in pediatric clinics | Implied in King et al (2010) – “quality improvement pilot project” “practice change” “office wide implementation system”  
- 3 member project teams (pediatrician leader, clinic/office staff member, individual chosen by other members of practice) | [http://pediatrics.aappublications.org/content/early/2010/01/25/peds.2009-0388.full.pdf+html](http://pediatrics.aappublications.org/content/early/2010/01/25/peds.2009-0388.full.pdf+html) |
## Data Sources

<table>
<thead>
<tr>
<th>Data Source*</th>
<th>Search Criteria</th>
<th>Web Link</th>
</tr>
</thead>
</table>
| Cochrane Library           | Search Terms: developmental screening  
Search Limits: all Cochrane databases, all document statuses, for all years  
Sorted by relevance | N/A                                                                              |
<p>| Campbell Systematic Reviews| Search Term: developmental screening                                             | <a href="http://www.campbellcollaboration.org/lib/?go=monograph&amp;search=developmental+screening&amp;search_criteria=title">http://www.campbellcollaboration.org/lib/?go=monograph&amp;search=developmental+screening&amp;search_criteria=title</a> |</p>
<table>
<thead>
<tr>
<th>Initiative/Program</th>
<th>State/Region/Practice Category/Primary topic/Developmental Disabilities/National Performance Measures/Year/Keywords</th>
<th>Web Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMCHP Innovation Station</td>
<td>State: all Region: all Practice Category: all Primary topic: Autism and Other Developmental Disabilities National Performance Measures: all Year: N/A Keywords: “developmental screening”</td>
<td><a href="http://www.amchp.org/programsandtopics/BestPractices/InnovationStation/Pages/default.aspx">http://www.amchp.org/programsandtopics/BestPractices/InnovationStation/Pages/default.aspx</a></td>
</tr>
<tr>
<td>Leadership Education in Neurodevelopmental and Related Disabilities (LEND)</td>
<td>N/A</td>
<td><a href="http://www.aucd.org/template/page.cfm?id=6">http://www.aucd.org/template/page.cfm?id=6</a></td>
</tr>
<tr>
<td>Association of Maternal &amp; Child Health Programs (AMCHP) /State Public Health Autism Resource Center (SPHARC)</td>
<td>N/A</td>
<td><a href="http://www.amchp.org/programsandtopics/CYSHCN/projects/spharc/Pages/default.aspx">http://www.amchp.org/programsandtopics/CYSHCN/projects/spharc/Pages/default.aspx</a></td>
</tr>
<tr>
<td>Developmental Behavioral Pediatrics (DBP) Program</td>
<td>N/A</td>
<td><a href="http://dbp.mchtraining.net/">http://dbp.mchtraining.net/</a></td>
</tr>
<tr>
<td>Home Visiting Collaborative Improvement and Innovation Network (HV CoIIN)</td>
<td>N/A</td>
<td><a href="http://hv-coiin.edc.org/">http://hv-coiin.edc.org/</a></td>
</tr>
<tr>
<td>National Academy for State Health Policy (NASHP)</td>
<td>N/A</td>
<td><a href="http://www.nashp.org">http://www.nashp.org</a></td>
</tr>
<tr>
<td>National Improvement Partnership Network (NIPN)</td>
<td>N/A</td>
<td><a href="https://www.uvm.edu/medicine/nipn/">https://www.uvm.edu/medicine/nipn/</a></td>
</tr>
</tbody>
</table>

*The Strengthen the Evidence Team of Experts and selected HRSA discretionary grantees contributed to the identification of data sources*
### Inclusion and Exclusion Criteria

<table>
<thead>
<tr>
<th><strong>Inclusion Criteria</strong></th>
<th><strong>Exclusion Criteria</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Types of studies: reviews of studies, organization websites also count as ‘compilations’</td>
<td>- Articles describing single strategies that are not part of a larger review</td>
</tr>
<tr>
<td>- Language: English</td>
<td>- Reviews including studies that solely focused on international populations</td>
</tr>
<tr>
<td>- Setting: clinics, school based, community-based</td>
<td>- Studies limited to evaluating screening tools without reference to increasing rates of screening</td>
</tr>
<tr>
<td>- Population of interest: ~children ages 10-71 months</td>
<td></td>
</tr>
<tr>
<td>- In order to maximize our efforts, some of the following results may not meet the requirements for inclusion precisely (e.g., studies of slightly older children, studies detailing clinical recommendations for screening tools).</td>
<td></td>
</tr>
</tbody>
</table>