



National and State Prevalence of Standardized Developmental Screening and Links to Early Intervention and Mental Health Services Access

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Motivating Observations

- **AAP Guidelines:** In 2006 the American Academy of Pediatrics (AAP) issued a policy statement recommending that pediatricians screen all young children for risk of developmental, behavioral and social delays using standardized screening methods
- **CHIPRA:** Standardized screening has also been recommended as a quality measure under the Child Health Insurance Plan Reauthorization Act.
- **Knowledge Gaps**
 - A baseline, population-based assessment in the prevalence of screening across states has been missing
 - Associations between screening and improved access to needed early intervention and mental health services is critical to informing priorities and policies to promote the healthy development of young children



Study Aims

1. Estimate national and state level **prevalence** of parent-completed developmental screening (DS-PC) as assessed in the 2007 National Survey of Children's Health
2. Explore child level associations between DS-PC and demographic, health and health care factors and **across state variation** in these associations
3. Assess whether **state level early intervention eligibility standards explain observed variation** across states
4. Explore associations between **DS-PC and the likelihood** similarly at-risk children receive **early intervention (EI)** or **mental and behavioral services (MH)**



Data

1. **2007 National Survey of Children's Health (NSCH)**

- Independent **random-digit-dial** survey samples for all 50 states plus D.C.
 - Yields a sample size of nearly **92,000 children age 0-17** (about 1,800 per state);

2. **National Center for Children in Poverty (NCCP)** variable on state early intervention eligibility (narrow, moderate, broad)



NSCH Study Sample

- ❑ **22,883 children age 10-71 months of age who had at least 1 health care visit in the past year**
- ❑ **Weighted estimate: 20.35 million children nationally**
 - ❖ 34% publicly insured children
 - ❖ 13.1% meet CSHCN criteria
 - ❖ 11% high risk (PEDS); 16.6% moderate risk
 - ❖ 3.1% emotional, behavioral or developmental problem (EBD) requiring treatment or counseling
 - ❖ 97.9% had 1+ preventive visit
 - ❖ 4.5% received EI services;
 - ❖ 42.2% received needed MH services



Developmental Screening Measure (DS-PC)

- Developmental screening is assessed in the 2007 NSCH
 - through the 3 survey items developed to assess whether a child's doctor or other health care providers had the **parent complete a standardized screening instrument**, such as the ASQ or PEDS.
 - Assessed for children **10 months to 71 months (5 years) of age** who had at least 1 health care visit in the past 12 months prior to the survey
- 3 DS-PC items
 - tested with English and Spanish speaking parents
 - tested in pediatric practices known to screen or not screen children
 - small proportion of false positive cases observed, indicating DS-PC measure may slightly overestimate screening or pick up screening conducted outside the provider setting
 - no false negative cases



DS-PC Survey Items

Introduction: Sometimes a child's doctor or other health care provider will ask a parent to fill out a questionnaire at home or during their child's visit.

- 1. During the past 12 months, did a doctor or other health care provider **have you fill out a questionnaire about specific concerns or observations** you may have about [S.C.]'s **development, communication, or social behaviors?**
- **10—23 Months**
 - 1a. Did this questionnaire ask about your concerns or observations about **how [child] talks or makes speech sounds?**
 - 1b. Did this questionnaire ask about your concerns or observations about **how [child] interacts with you and others?**
- **24-71 Months**
 - 1c. Did this questionnaire ask about your concerns or observations about **words and phrases [child] uses and understands?**
 - 1d. Did this questionnaire ask about your concerns or observations about **how [child] behaves and gets along with you and others?**



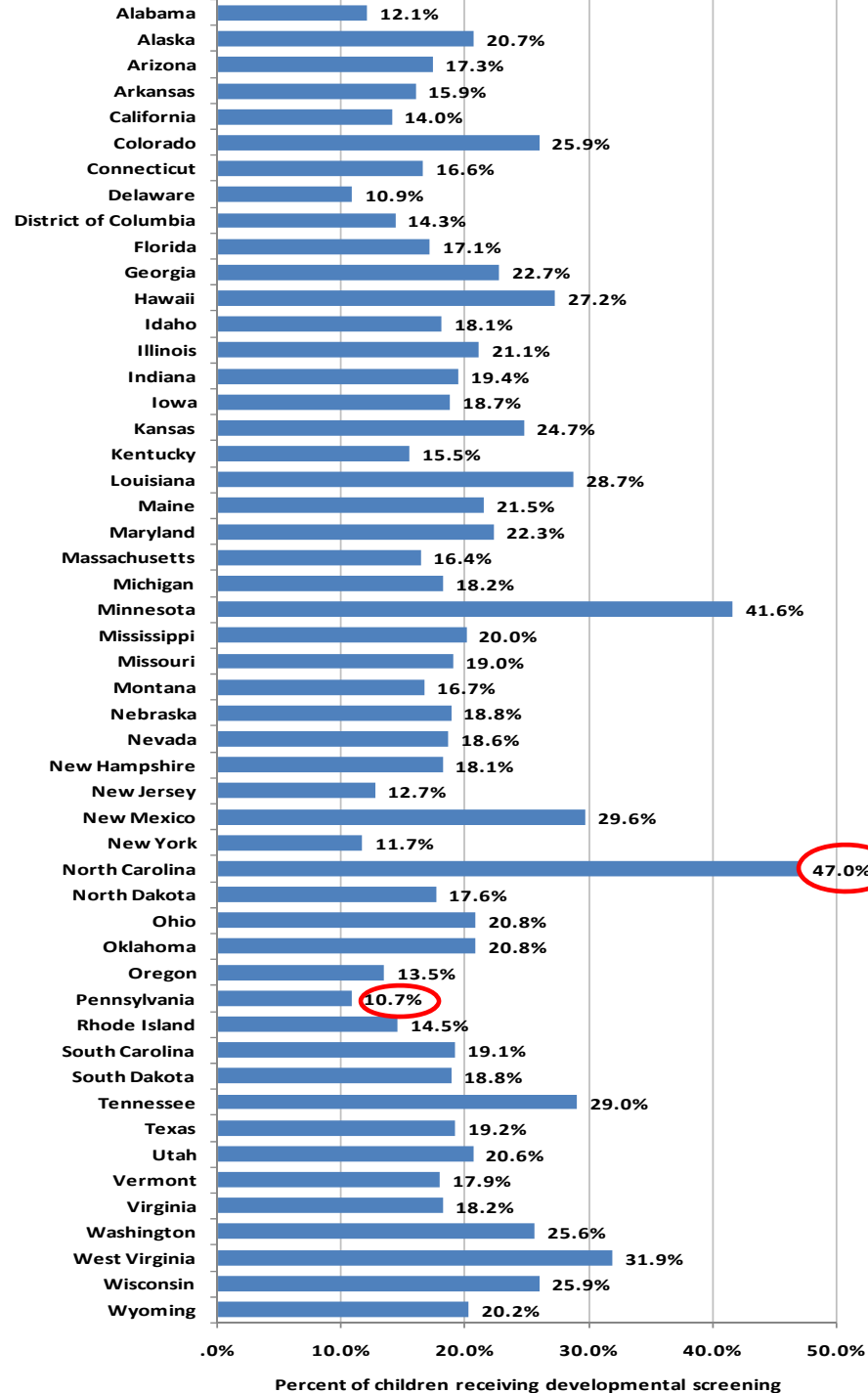
Analytic Methods

- Chi square tests evaluated variations in DS-PC prevalence across subgroups of children
- Nested t-tests evaluated significance of differences between each state's DS-PC prevalence rate and the national rate.
- Multi-level and logistic regression models were fit to examine associations between children's receipt of DS-PC and their developmental risk status, socioeconomic status, health insurance, preventive care visits, and receipt of needed mental health and early intervention services.



Results

- National prevalence of DS-PC among children 10-71 months was 19.5%, ranging from 10.7% in Pennsylvania to 47.0% in North Carolina





Results

- Effects of child characteristics explained 58% of variation observed across states (age, sex, race/ethnicity, household income, insurance type, risk status, CSHCN status, preventive visit)
- Child level effects varied across states, such that DS-PC prevalence is predicted to be higher in a state with a higher prevalence, even after accounting for child-level characteristics



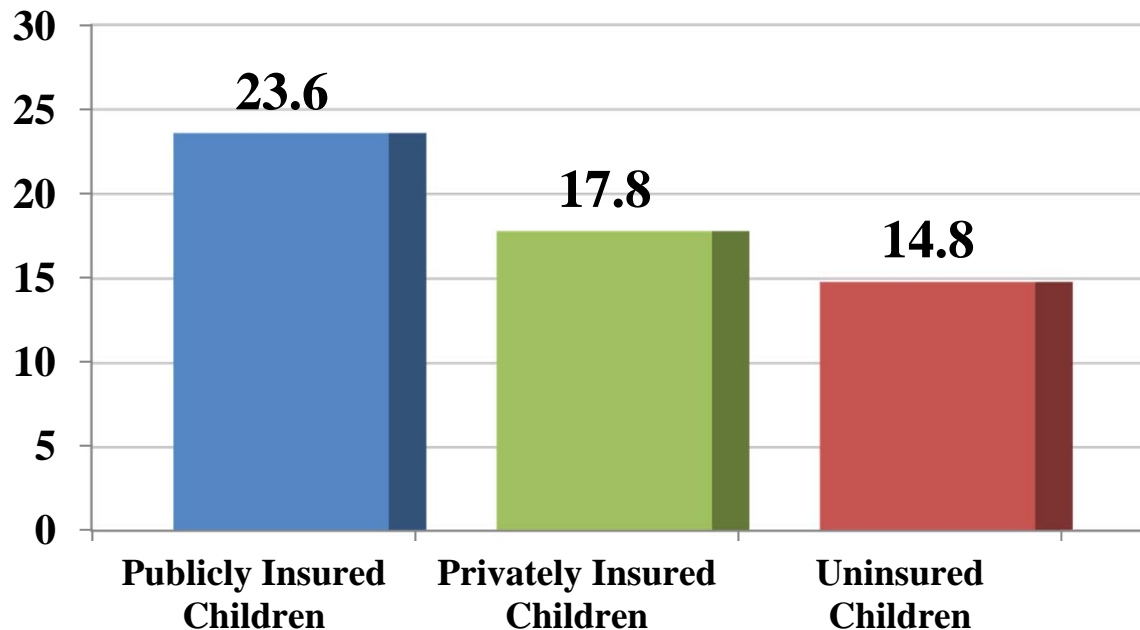
Results

- The DS-PC rate did not rise above 26.7% for any subgroup of children according to their age, sex, race/ethnicity, primary household language or household income.
- **Prevalence was higher for:**
 - Children age 10-12 months of age (26.7%) [10-24 months AOR: 1.43^s]
 - Black children (24.4%) [AOR:1.24^s]
 - Children living in poor households – 0-99% FPL (22.4%) [AOR: .99^{ns}]
 - Children identified as high-risk for developmental problems (23.4%) [AOR: 1.27^s]
 - Children with public sector health insurance coverage (23.6% vs. 17.8%) [AOR: 1.30^s]
 - Children with at least 1 preventive medical visit (19.8% vs. 9.2%) [AOR: 1.65^s]



Results

- Publicly insured children most likely to receive a DS-PC in the past year (23.6%), followed by those with private insurance (17.8%) and no insurance (14.8%)





Results

Across State Disparities in DS-PC by Insurance Type

Disparities in DS-PC prevalence between children with public vs. private health insurance varied across states

Prevalence ratios ranged from .23 to 3.44 across states

Low disparity does not necessarily indicate better performance (can indicate low rates for both groups)



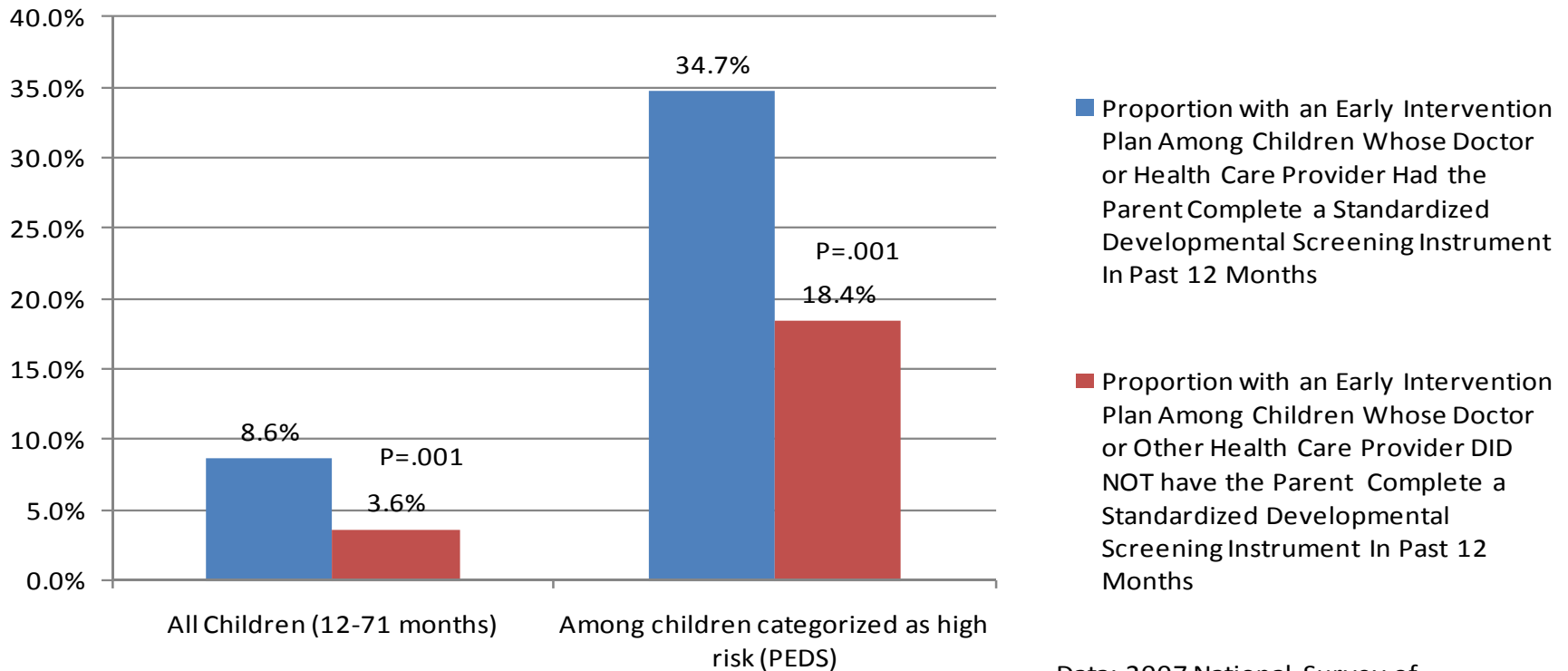
Results

- Receipt of EI services was more likely if a children received a DS-PC
- However, state-level EI eligibility standards did not explain variations in EI service provision



Results

Figure 3: Proportion of children age 12-71 months with an early intervention plan: by developmental risk status and parent completion of a standardized developmental screening instrument (DS_PC)



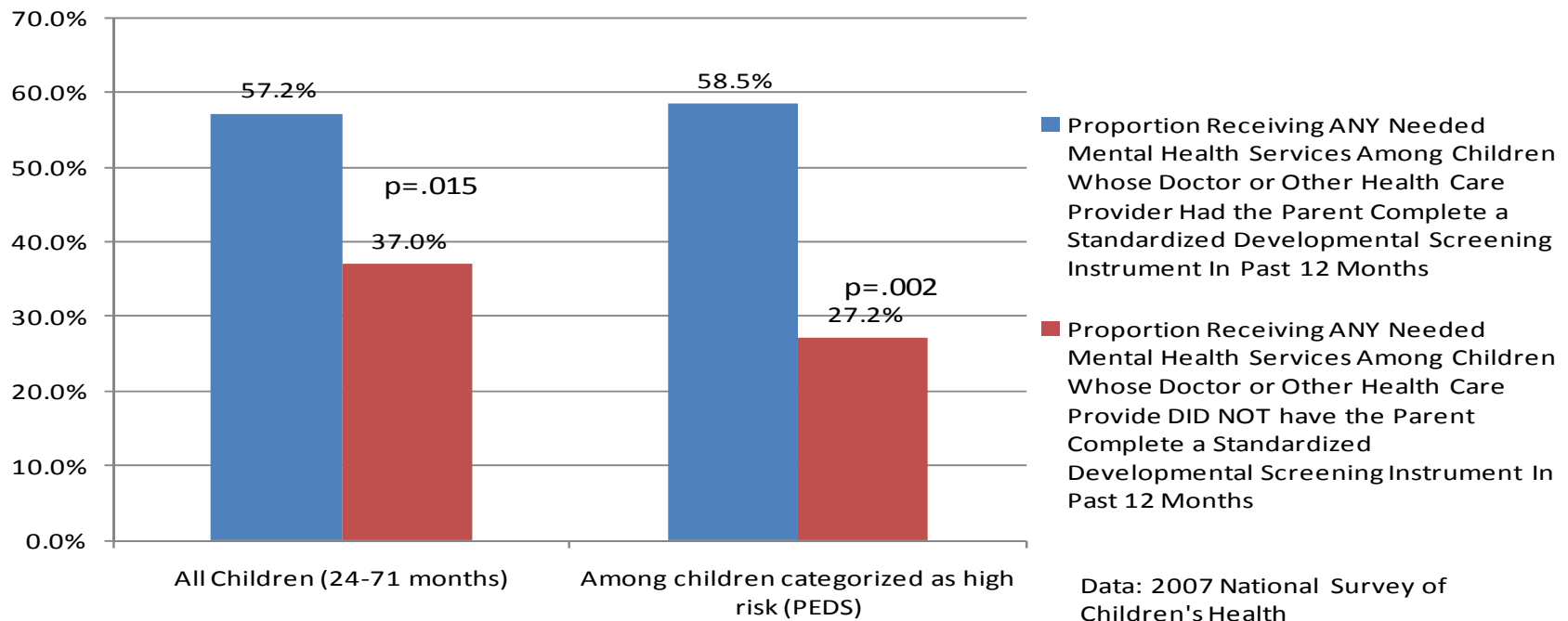
Data: 2007 National Survey of Children's Health



Results

- Children needing mental health services were **1.54 times** more likely to receive these services if they also received a DS-PC

Figure 2: Proportion of children age 24-71 months with emotional, behavioral or developmental problems requiring treatment or counseling who received ANY mental health services: by developmental risk status parent completion of a standardized screening in





Conclusions & Implications

- In 2007, 1 year after the AAP recommendations on Developmental Screening were released
 - **Fewer than 1 in 5** young children received DS-PC
 - Provides baseline data on DS-PC
 - Measurement in the 2011 NSCH will be useful to track improvement efforts underway in many states
- Significant **missed opportunities** exist to identify and provide services to higher risk children
 - Most children at high risk for developmental and behavioral problems did not receive screening
 - Those who are screened are significantly more likely to receive services



Conclusions & Implications

- State variations are only partially accounted for by child level demographic, health and health care characteristics. (~58%)
 - Other state factors are at play
 - Valid state level variables are needed to assess further
- States have opportunity to take initiative to improve DS-PC rates
 - Highest rates of DS-PC in North Carolina which has instituted a number of integrated and purposeful policy, practice and improvement efforts specifically focused on improving screening



Limitations

- Findings do not incorporate non-parent-completed methods for conducting standardized screening
- Possible over-estimate of provider-driven DS-PC based on measure testing
- Comparison with other measurement methods and continuous improvement in measurement and evaluation of impact of developmental screening is indicated.