Evidence-Based Early Detection of Developmental-Behavioral Problems in Primary Care: What to Expect and How to Do It

Frances Page Glascoe, PhD

ABSTRACT

The goals of this study are to (a) inform clinicians embarking on evidence-based screening initiatives about what to expect when using quality tools, including provision of information on identification rates by age, patient mix, and well-visit uptake, and (b) describe the various implementation methods used by other clinics. Participants were professionals in 79 clinics across 20 U.S. states and elsewhere in North America, collectively serving 20,941 families via a Web-based screening ervice, *PEDS Online,* which offers developmental-behavioral/mental health and autism screens with automated scoring, report writing, and a mineable database. Problematic screening results were found in more than 1 out of 5 children, and rates of screening test failures increased with children's ages. Children screened outside the well-child visit schedule were more likely to have screening test failures. Personnel at 22 of the 79 clinics were either interviewed or observed in person to identify implementation strategies. Clinics, even those serving families with limited education or lack of facility with English, found a variety of ways to make use of online screening services. J Pediatr Health Care. (2015) *29*, 46-53.

KEY WORDS

Developmental, behavioral, mental health, autism screening, implementing screens, incidence, well-visit uptake, quality improvement initiatives

Frances Page Glascoe, Professor of Pediatrics, Vanderbilt University, Nashville, TN.

Conflicts of interest: Dr. Glascoe is the author/co-author of several screening tests used in this study and may receive royalties on their use.

Correspondence: Frances Page Glascoe, PhD, 1060 Worlds Fair Park Dr, #503, Knoxville, TN 37916; e-mail: Frances.P.Glascoe@Vanderbilt.edu.

0891-5245/$36.00

Published online July 31, 2014.

http://dx.doi.org/10.1016/j.pedhc.2014.06.005

The American Academy of Pediatrics (AAP) and the National Association of Pediatric Nurse Practitioners (NAPNAP) have created a number of policy and position statements regarding early detection of developmental-behavioral difficulties, autism spectrum disorders, mental health problems, and motor impairments (AAP, 2006, 2009, 2010; High, 2008; Myers & Johnson, 2007; NAPNAP, 2009, 2011, 2013a, 2013b; Noritz & Murphy, 2013). The rationale, thoroughly grounded in evidence, is that early detection leads to early intervention, and through early intervention, children's outcomes and families' well-being are vastly improved (Anderson et al., 2003; Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002; Farran, 2005; Muennig, Schweinhart, Montie, & Neidell, 2009; Reynolds, Temple, Ou, Arteaga, & White, 2011; Reynolds, Temple, White, Ou, & Robertson, 2011; Schweinhart et al., 2005).

In the United States, one in six children have developmental-behavioral problems, including deficits or disorders in language, motor, or pre-academic/academic skills; deficits in intelligence; mental health/behavioral/social-emotional problems; or autism spectrum disorders (Baio, 2008; Boyle et al., 2011). One in four to one in five children have either mild delays or psychosocial risk factors predictive of future difficulties (e.g., housing instability, parental depression, limited parental education, poverty, and parenting behaviors that fail to promote children's language and academic skills). Psychosocial risk factors are strong predictors of present and future developmental and mental health problems (Simon, Pastor, Avila, & Blumberg, 2013). The majority of these children who are not treated in early childhood experience school failure, drop out before completing high school, are less likely to be employed as adults, are more likely to become teen parents, incur high health care costs, and engage in criminal behavior (Simon et al., 2013; Stevens, 2006). If the problems are identified and treated early through services such as Head Start, parent training, or the Individuals with Disabilities Education Act, outcomes are vastly improved. Research on cost savings to society show that for every $1 spent on early intervention, taxpayers save up to $17 (Anderson et al., 2003; Campbell et al., 2002; Farran, 2005; Muennig et al., 2009; Reynolds et al., 2011; Reynolds et al., 2011; Schweinhart et al, 2005).

Accurate early detection depends on validated, standardized screening measures. When clinicians use poorly constructed measures such as the Denver-II (Glascoe et al., 1992) or informal checklists (e.g., milestones built into age-specific encounter forms, including those in electronic health records), only 30% to 40% of children with problems are identified (Bethell, Reuland, Schor, Abrahms, & Halfon, 2011; Radecki, Sand-Loud, O'Connor, Sharp, & Olson, 2011; Sices, Feudtner, McLaughlin, Drotar, & Williams, 2003). In contrast, when quality tools are administered, identification rates exceed 70% (Guevara et al, 2013; Hix-Small, Marks, Squires, & Nickel, 2007). In addition, providers are more likely to refer children who perform poorly on accurate screens, and families are more likely to follow through with referral recommendations (Cox, Huntington, Saada, Epee-Bounya, & Schonwald, 2010; Guevara et al., 2013; Schonwald, Horan & Huntington, 2009; Schonwald, Huntington, Chan, Risko, & Bridgemohan, 2009).

Although the policies of professional societies are wise, pediatric providers face many implementation challenges, including how to administer screenings, score screenings, advise parents, and write/send reports to referral services—with all such tasks, ideally, completed within the average time frame for well-child visits, which is about 18 minutes nationally (Baron, 2010; Halfon, Stevens, Larson, & Olson, 2011). Because no Relative Value Units are assigned to professional time, self-administered parent-report tools (with assistance from clinic staff as needed) are particularly efficient. Even more efficient is use of online screening services, with which parents can complete measures; scoring is automated, as are referral letters, parent summary reports, and billing/procedure codes. Despite an average per-patient expense of approximately $2.50, online screening ultimately costs less than paper and pencil screens because it saves at least 30 minutes of professional time (Glascoe, Dehnert, & Poon, 2014).

Even so, implementation of parent-report screens in an online environment requires a consideration of staffing patterns (e.g., availability of skilled nursing); equipment/access (e.g., waiting-room kiosks, computers in examination rooms, electronic parent portals, or paper and pencil in waiting rooms); and patient mix (e.g., circumvention of parental literacy challenges by interview administration and languages spoken/need for interpretation/translation services; Glascoe, Marks, Poon, & Macias, 2013). The central goal of this study is to help prepare clinics interested in implementing evidence-based screening by exemplifying (a) how and when other clinics use quality screens to comply with the policies of professional societies; (b) how children perform on screening tests; and (c) the various ways that clinics administer screening tools online according to staffing, equipment, and patient mix.

METHODS

Participants and Settings

Of 127 practices administering quality developmental/behavioral screening via an online screening service, 79, reflecting a range of practice types (e.g., private practice and public health centers) were selected for data analysis. Practice selection criteria were: (a) frequent use of screening tools, that is, at least several times per day; (b) use of online screening for at least 1 year; (c) provision of care to families of diverse socioeconomic status and language backgrounds; and (d) willingness of clinicians to respond to e-mailed questions about implement approaches.

Settings included private practices in general pediatrics and family medicine (N = 55, serving 14,698 families); public health departments and community health centers (N = 14, serving 2,847 families); outpatient teaching-hospital continuity clinics (N = 3, serving 1,298 families); and other services such as emergency departments or nonemergent crisis call centers, (N = 7, serving 2,103 families).

Data from all sites was aggregated, and each type of site was assigned a unique code for analysis by setting. Collectively, 20,941 children from birth to 8 years of age were screened. The 79 clinics were located across 20 U.S. states (plus one in Canada and one in Mexico). Electronic health records (EHRs) were in use by more