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Research article

Using quality improvement to promote implementation and increase well child visits in home visiting☆

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ABSTRACT

A key goal of home visiting is to connect children with medical homes through anticipatory guidance regarding recommended well child care (WCC). Substantial barriers to WCC among low socioeconomic families can limit achievement of this outcome. Quality improvement strategies have been widely adopted in healthcare but only recently implemented in home visiting to achieve program outcomes. The objective of this initiative was to increase the percentage of infants enrolled in home visiting who completed at least 3 recommended WCC visits in the first 6 months of life within a large, multi-model program comprised of 11 sites. A series of 33 quality improvement cycles were conducted at 3 sites involving 18 home visitors and 139 families with infants in the target age range. These were deployed sequentially, and changes within and across sites were monitored using trend charts over time. Adopted strategies were then implemented program-wide. Initiatives focused on staff training in WCC recommendations, data collection processes, monthly family tracking reports, and enhanced communication with primary care offices. Data were shared in iterative sessions to identify methods for improving adherence. Wide baseline variability across sites was observed, with the percentage of infants with recommended care ranging from 35% to 83%. Over the project timeline, the percentage of infants receiving at least 3 WCC visits in the first 6 months increased from 58% to 86%. Quality improvement within home visiting can be used to improve WCC adherence and provides an example of maximizing implementation of home visiting interventions.

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Introduction

The American Academy of Pediatrics (AAP) emphasizes the importance of comprehensive health supervision through recommended well child care (WCC), defined as a schedule of screenings and assessments from infancy through adolescence to prevent and detect social and medical issues impacting child health (Hagan, Shaw, & Duncan, 2007). Recent research has demonstrated substantial gaps in the receipt of recommended WCC among infants and children across the U.S. (Abdus & Selden, 2013; Mangione-Smith et al., 2007). Families of low socioeconomic status (SES) are particularly challenged by barriers that can impede access to timely primary care and that place them at higher risk for adverse health outcomes (Strickland, Jones, Ghandour, Kogan, & Newacheck, 2011; Zickafoose, Gebremariam, Clark, & Davis, 2011). These barriers include low perceived value of primary care, transportation issues, time constraints, and family crisis events, which can limit familial engagement with preventative services (Coker, Chung, Cowgill, Chen, & Rodriguez, 2009; O'Donnell, Trachtman, Islam, & Racine, 2014).

Home visiting programs, a voluntary service for low SES families to provide care coordination, parenting education, and social support, offer a critical opportunity to connect children with pediatric medical homes through anticipatory guidance and promotion of recommended WCC. In 2010, a dedicated investment of federal funding was made through the Patient Protection and Affordable Care Act (PPACA) to implement and expand home visiting models that have sufficient evidence for impact on child health outcomes (Health Resources and Services Administration, 2010). Examples of such models include Healthy Families America® (HFA; Daro & Harding, 1999), Nurse-Family Partnership® (NFP; Olds, Hill, O'Brien, Racine, & Moritz, 2004), and SafeCare® (Guastaferro, Lutzker, Graham, Shanley, & Whitaker, 2012), each of which vary in specific programmatic aspects like visit frequency and curricular content, but which share a common objective of enhancing parental capacity and promoting healthy child development.

Within home visiting and other child welfare programs, many challenges to implementation and attainment of program objectives have been documented (Duggan et al., 2000; Morehouse & Tobler, 2000). One primary challenge is unintended variability in adherence to core program elements as programs enlarge and expand across multiple sites. This variation in program adherence can be attributed to many factors, including individual site resources, staff capacity and training, leadership and supervision, and characteristics and culture of the local population (Ammerman, Putnam, Margolis, & Van Ginkel, 2009).

Continuous Quality Improvement (CQI), developed from business and manufacturing industries (Deming, 1982; Juran, 1992), is a structured approach to improving program implementation through regular data collection, examination of performance relative to predetermined targets, and review of practices that promote or impede improvement. CQI has been widely applied in health care settings and is now considered an essential feature in the delivery of high quality health services. In recent years, the use of CQI within child welfare programs like home visiting has been acknowledged to be an important driver of successful program implementation and sustainability (McCabe, Potash, Omohundro, & Taylor, 2012). Under PPACA legislation, state home visiting programs are now required to create and implement a CQI plan to focus efforts and monitor progress toward program goals (Health Resources and Services Administration, 2010).

One common framework to guide CQI efforts is The Model for Improvement, a simple, yet powerful tool developed by the Institute for Healthcare Improvement to accelerate organizational change (Langley et al., 2009). As shown in Fig. 1, the Model for Improvement is a structured format for developing and testing rapid changes and contains four key elements: setting aims, establishing measures, selecting changes to test, and testing and implementing changes. As a distinct departure from traditional hypothesis-driven research, this approach is designed to maximize the effectiveness of program implementation in specific settings. The application of such approaches to child welfare programs like home visiting can help ensure that evidence-based interventions are delivered with fidelity to original program models, ultimately resulting in better outcomes for families.

Here we describe a CQI approach intended to strengthen implementation within a large-scale, multi-model home visiting program operating across multiple sites. Based on local experience of low adherence to recommended WCC for young infants in the program, the goal of this initiative was to increase the percentage of infants who successfully completed at least 3 recommended WCC visits in the first 6 months of life. Our approach included the use of a data system for rapid and ongoing analysis of CQI measures, a dedicated team to review CQI progress and assess performance, and a systematic approach for testing changes within the program. Our description of the methods and components used to achieve project aims is guided by the Standards for Quality Improvement Reporting Excellence (SQUIRE), which is widely adopted in describing implementation of CQI in healthcare and related settings (Davidoff et al., 2009).

Methods

Study Population and Setting

The target population for this study was infants born to first time mothers enrolled in a well-established, regional home visiting program serving 7 counties in southwest Ohio and northern Kentucky. Program eligibility requires that, in addition to being first-time mothers, participants have at least one of four targeted demographic characteristics placing them at-risk for adverse parenting outcomes: unmarried, low income (up to 200% of poverty level, receipt of Medicaid, or reported concerns about finances), <18 years of age, or suboptimal prenatal care. This program has to date served more than 22,000 families, and