

Life Course Indicator: Medical Home

The Life Course Metrics Project

As MCH programs begin to develop new programming guided by a life course framework, measures are needed to determine the success of their approaches. In response to the need for standardized metrics for the life course approach, AMCHP launched a project designed to identify and promote a set of indicators that can be used to measure progress using the life course approach to improve maternal and child health. This project was funded with support from the [W.K. Kellogg Foundation](#).

Using an RFA process, AMCHP selected seven state teams, Florida, Iowa, Louisiana, Massachusetts, Michigan, Nebraska and North Carolina, to propose, screen, select and develop potential life course indicators across four domains: Capacity, Outcomes, Services, and Risk. The first round of indicators, proposed both by the teams and members of the public included 413 indicators for consideration. The teams distilled the 413 proposed indicators down to 104 indicators that were written up according to three data and five life course criteria for final selection.

In June of 2013, state teams selected 59 indicators for the final set. The indicators were put out for public comment in July 2013, and the final set was released in the Fall of 2013.

Basic Indicator Information

Name of indicator: Medical Home (LC-37)

Brief description: Proportion of families who report their child received services in a Medical Home

Indicator category: Health care Access and Quality

Indicator domain: Service/Capacity

Numerator: Children whose health care meets Medical Home criteria

Denominator: Children age zero to 17 years

Potential modifiers: race/ethnicity, income, geography, rural vs. urban

Data source: National Survey of Children's Health

Notes on calculation: Analysts who use the raw datasets should apply the appropriate survey weights to generate the final estimates.

Similar measures in other indicator sets: HP 2020 Focus area MICH-30; Title V Performance Measure #03 (For CSHCN); Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Benchmark Area Improved Maternal and Newborn Health: Well-Child Visits

Life Course Criteria

Introduction

A medical home is an approach to providing comprehensive primary care that was originally developed in the 1960s for children with special health care needs (CSHCN) but has since been widely recognized as an ideal model of care for all children (American Academy of Pediatrics, 2014). The American Academy of Pediatrics (AAP) defines the medical home as primary care that is, “accessible, continuous, comprehensive, family-centered, coordinated, compassionate, and culturally effective” (AAP, 2014). Life course provides a framework for the medical home to promote health and wellness over time, provide support to families, and create the opportunity to develop long-term relationships between providers and families offering the families consistency, safety and support. Children of families receiving the high-quality, coordinated care of a medical home have more knowledge about their health, are better equipped to identify resources to facilitate healthy behaviors, and are more likely to share this information with their family and with their community (Homer, 2008). Both CSHCN and children without special health care needs experience improvements in health measures such as emergency department (ED) visits when accessing care within a medical home (Homer et al, 2008, Long et al, 2012), highlighting the importance of extending this model of health care to all populations in order to maximize health and development in childhood that will carry over into adulthood.

Implications for equity

The medical home has the potential to act as a powerful tool in increasing health equity among all populations. When individuals receive care within a medical home, racial/ethnic disparities in receiving timely, needed care as well as preventive care disappear (Beal et al, 2007). However, multiple populations in the United States struggle to receive high-quality, comprehensive health care that classifies as a medical home. Data from the National Survey of Children’s Health (NSCH) continue to indicate disparities in access to a medical home by race/ethnicity, income level, special health care needs, and health insurance status (Zickafoose & Davis, 2013).

Although the concept of the medical home was originally developed to provide adequate care for CSHCN, only 46.8 percent of CSHCN receive care from a medical home compared to 56.3 percent of non-CSHCN (NSCH, 2012). Effective care coordination is the medical home component that is most difficult for CSHCN to attain. Only 56.4 percent of CSHCN received coordinated care when needed compared to 71.4 percent of non-CSHCN (NSCH, 2012). CSHCN also are more likely to have problems getting referrals for specialty care when needed than non-CSHCN (24.5 percent vs. 18.5 percent, respectively) (NSCH, 2012).

Insurance status and insurance type also are predictors of receiving care qualifying as a medical home. Only 27.8 percent of uninsured children receive care meeting medical home criteria compared to 64 percent of privately insured children (NSCH, 2012). Barriers to the medical home also are evident in publicly insured children as more than half (56 percent) of children with public insurance such as Medicaid or SCHIP do not receive health care qualifying as a medical home (NSCH, 2012). Community health centers and public clinics, which often serve uninsured and low-income families, are less likely to provide medical home care than private medical practices (Beal et al, 2007).

Racial and ethnic minorities and low-income children are disproportionately affected by lack of access to adequate medical care resulting in disparities in care qualifying as a medical home. Only 36.4 percent of children below 100 percent federal poverty level (FPL) had care qualifying as a medical home while nearly 68 percent of children at or above 400 percent FPL had care that met medical home requirements (NSCH, 2012). Children living below 100 percent FPL are less likely to receive each of the five criteria of a medical home (having a personal doctor or nurse, having a usual source of sick care, receiving family-centered care, ability to get referrals when needed, and help with coordinating care) than children living at or above 400 percent FPL (NSCH, 2012). Hispanic children (37.2 percent) and Black non-Hispanic children (44.7 percent) are much less likely to receive care in a medical home than non-Hispanic White children (65.7 percent) (NSCH, 2012). As with low-income children, Hispanic and non-Hispanic Black children are less likely to receive every care component of a medical home than non-Hispanic White children (NSCH, 2012).

Historically, the cost of health care has been a burden for low-income families because they have been unable to afford out-of-pocket expenses or adequate health insurance (Davidoff, 2004). The Affordable Care Act (ACA) will assist families with obtaining adequate health insurance, but the medical home offers an effective intervention to reduce health care

disparities that go beyond insurance status. When children have access to care within a medical home, they are more likely to have better health outcomes, fewer emergency room visits, better sustained health and experience fewer high-risk behaviors (Bachrach et al., 2011; Beal et al., 2007). These benefits have the potential to increase overall health equity if disparities in obtaining care within a medical home were reduced.

Public health impact

High-quality care obtained through a medical home from infancy through adolescence reduces health disparities, lowers hospitalization rates, ED visits and costs, and promotes healthy behaviors, physical activity, and avoidance of risk behaviors (Cooley et al, 2009; Long et al, 2012, Beal et al, 2007). Addressing health care and overall health issues such as high ED visits or youth risk behaviors through the medical home can reduce costs and poor outcomes to public health programs, communities and tax payers (Benedict, 2008).

Liptak et al. (1998) found that after implementation of coordinated care programs, adjusted hospital inpatient charges for chronic conditions fell from \$28.1 million in 1989 to \$14.6 million in 1995. Hospitals that have strong primary care medical homes are less likely to hospitalize children with common chronic conditions, and the high quality care provided in these medical homes reduce visits to the ED, indicating improved chronic disease management on the part of families (Cooley et al., 2009). Due to better health management, parents of children with chronic conditions with a medical home miss fewer days of work due to child illness, which can lead to increased productivity (Palfrey et al, 2004).

Nationally, nearly 31 million children are covered by Medicaid (CMS, 2014). Utilization of the ED by Medicaid beneficiaries is nearly two-fold higher than privately insured individuals (USDHHS, CMS, 2014). The medical home has the potential to reduce both urgent and non-urgent ED visits by Medicaid beneficiaries through the provision of non-urgent care in appropriate settings and a focus on prevention, disease management, and wellness that reduces incidence and severity of chronic diseases and other illnesses (USDHHS, CMS, 2014, Cooley et al, 2009). The disparity that exists between publicly insured and privately insured children in obtaining medical home care indicates potential for improvement in this indicator among Medicaid beneficiaries that could result in significant cost-savings.

The ACA required the U.S. Department of Health and Human Services (HHS) to establish the National Strategy for Quality Improvement in Health Care (National Quality Strategy), which aims to “improve the delivery of health care services, patient health outcomes, and population health” (HHS, 2012). In the HHS 2012 Annual Progress Report to Congress on the National Quality Strategy, several health care priorities were established that are in line with the medical home. These priorities include ensuring individuals and families are engaged as partners in care, promoting effective communication and coordination of care, and promoting the most effective prevention and treatment practices for leading mortality causes (HHS, 2012). The medical home is an intervention that is capable of aiding in achieving the priorities outlined by HHS in the National Quality Strategy.

Leverage or realign resources

The National Center for Medical Home Implementation (NCMHI), which is a cooperative agreement between AAP and the Maternal and Child Health Bureau (MCHB) aims to ensure “all children and youth, including children with special needs, have a medical home where health care services are accessible, family-centered, continuous, comprehensive, coordinated, compassionate, and culturally competent” (AAP, 2014). The NCMHI website (medicalhomeinfo.org) offers general medical home information, ways to implement a medical home, training resources to help medical practices build a medical home, national resources and initiatives, and state resources and initiatives.

Public and private health insurers are stakeholders who are already partnering with health care providers to reduce costs and improve quality of medical care by promoting and implementing medical homes. A variety of models of care, payment mechanisms and incentives are in place between insurers, physician groups, and organizations to implement the medical home. Research showed that patients of physicians who attended a seminar on developing a medical home with their asthma patients’ families had fewer hospitalizations than other physicians who did not attend a seminar (Clark et al., 1998; Clark et al., 2000). Although these studies examined the association between medical home and asthma, similar outcomes would likely be seen in other chronic conditions. Insurers are interested in reduced hospitalizations, fewer emergency department visits, and improved chronic disease management provided by the medical home as their costs will ultimately be reduced.

The ACA offers a number of opportunities, utilizing payment reform models, for community programs, health departments, and states to further realign resources to institutions, organizations and health care providers who expand and refine care delivery within a medical home (Kenney & Pelletier, 2010). Two specific provisions in the ACA supporting medical home are Section 2703 pertaining to health homes in Medicaid and Section 10333, which funds the Community-based Collaborative Care Network Program. Funds of up to \$25 million are available for planning grants to develop state plans to provide health homes for Medicaid beneficiaries with chronic conditions (AMCHP, 2010). The Community-based Collaborative Care Network Program provides funding to coordinate and integrate health care services for low-income uninsured and underinsured populations through consortiums of health care providers (AMCHP, 2010). AMCHP developed a fact sheet, located at amchp.org/Policy-Advocacy/health-reform/Documents/Medical-Homes-ACA-Fact-Sheet.pdf, containing a full list of ACA provisions promoting the medical home and how state MCH programs can maximize these opportunities.

Predict an individual's health and wellness and/or that of their offspring

The medical home redesigns pediatric primary care into a family-centered, coordinated system that focuses on a longitudinal view of the child's lifespan to improve clinical outcomes, promote wellness, increase patient satisfaction, and lower care costs (Klein, 2009). Care within the medical home promotes relationships among health care providers, families and children that positively impact a host of individual health factors across the life span including prenatal care, school readiness, teen pregnancy, risk reduction, resilience, and family capacity to find resources to care for their children (Bachrach et al., 2011; Beal et al., 2007; Benedict, 2008; Kenney & Pelletier 2010). Children with a medical home are not only more likely to receive timely care in appropriate settings, but also are more likely to exhibit behaviors that aid in disease prevention and increase overall wellness (Long et al, 2012). The medical home is associated with increased preventive care visits and fewer ED and outpatient sick visits in children (Long et al, 2012). Overall wellness behaviors that may not typically be associated with health care including family reading, sufficient sleep, helmet use, and decreased television and video game use are also all more likely in children with a medical home (Long et al, 2012).

The medical home is particularly important for children as pediatric health care has a large role in maximizing a child's developmental trajectory (Stille et al, 2010). The medical home offers increased surveillance for childhood disabilities and developmental problems, which can lead to early detection and intervention (Adams, 2013). Once a disability, developmental delay, or chronic condition is detected, medical home provides an effective approach to treatment and care management. Children without a medical home are likely to delay or forego health care, which negatively impacts child health outcomes (Strickland et al., 2004; Smaldone, Honig, & Byrne 2005). CSHCN with a medical home are less likely to have unmet need for supportive or therapeutic services (Benedict, 2008). Coordination of high quality therapeutic care for CSHCN maximizes eventual child independence, decreases family care burden, and enables the child to partake fully in their community (Benedict, 2008). Children with chronic diseases and disabilities with a medical home are less likely to be hospitalized or visit the emergency department (Cooley et al, 2009). A highly common childhood chronic condition, asthma, benefits from the coordinated chronic disease management received within a medical home (Clark et al., 1998; Clark et al., 2000), indicating opportunity to improve outcomes for other chronic conditions through managed medical home care.

Data Criteria

Data availability

The NSCH, sponsored by MCHB, examines the physical and emotional health of children ages zero to 17 years of age. The survey is administered using the State and Local Area Integrated Telephone Survey (SLAITS) methodology, and it is sampled and conducted in such a way that state-level estimates can be obtained for the 50 states, the District of Columbia, and the Virgin Islands. The survey has been designed to emphasize factors that may relate to the well-being of children, including medical homes, family interactions, parental health, school and after-school experiences, and safe neighborhoods. MCHB leads the development of the NSCH and NS-CSHCN survey and indicators, in collaboration with the National Center for Health Statistics (NCHS) and a national technical expert panel. The expert panel includes representatives from other federal agencies, state Title V leaders, family organizations, and child health researchers, and experts in all fields related to the surveys (adolescent health, family and neighborhoods, early childhood and development etc.). The most recent data set, the 2011-2012 NSCH, encompasses a sample size of more than 95,000 children with approximately 1,800 interviews completed in each of the 50 states and the District of Columbia.

MCH programs can readily gain immediate access to the data through datasets released by the National Center for Health Statistics, and on the MCHB sponsored Data Resource Center for Child and Adolescent Health website (childhealthdata.org). Data from the 2011/2012 NSCH were made available in early 2013. The survey questionnaire and raw dataset are available for download on the Centers for Disease Control and Prevention (CDC) NCHS website in SAS format. The Data Resource Center (DRC) website provides data nationwide, for all 50 states and the District of Columbia. Additionally, both the raw datasets and the website allow users to stratify measures by sociodemographic groups, including but not limited to age, sex, race/ethnicity, primary household language, household income, and special health care needs. Cleaned, state-specific datasets with new variables that include national and state indicators are available at no cost in SAS and SPSS formats. For information on how to order state-specific sets, contact cahmi@ohsu.edu. Local data is not searchable. The NSCH is not administered annually. Over the past decade, the NSCH has been administered four times.

National, state and regional level results can be accessed online from the Data Resource Center website: childhealthdata.org. State and national data can be further refined to assess differences by race/ethnicity, income, special health care needs status and a variety of other important demographic and health status characteristics.

A total of 19 different survey questions are used to develop the overall composite score for having a Medical Home, which include assessment of whether children and youth:

- Have a personal doctor or nurse
- Have a usual source of care
- Receive care that is family-centered
- Receive care that is culturally sensitive
- Obtain needed specialty care referrals
- Receive help coordinating across multiple providers and types of services

Data quality

The main limitation of the NSCH is that the information provided is from parent recollection of screenings received and perception of child's health and development over the past year. The survey methodology does not provide an opportunity for confirmation with medical records or physical measurements. The NSCH is weighted to represent the national population of non-institutionalized children age zero to 17 years. According to the survey documentation, missing data for income were relatively high for 2011-2012 data, and a study of nonresponse patterns indicated that excluding records with missing income could impact the representativeness of the remaining data; therefore, a data file with imputed values for income is provided to be used with the datasets.

The NSCH documentation presents both response rates and completion rates. For 2011-2012 data, the combined national response rate for both landline and cell phone samples was 23 percent. The completion rate, which is calculated as the proportion of households known to include children that completed all sections up to and including Section 6 (for children less than six years of age) or Section 7 (for children six to 17 years of age), was 54.1 percent for the landline sample and 41.2 percent for the cell-phone sample.

Qualitative testing of the entire 2007 National Survey of Children's Health was conducted by the National Center for Health Statistics. They conducted cognitive interviews with the 2007 NSCH Computer-Assisted Telephone Interview (CATI) to make sure the entire survey instrument was functioning properly. N=640 interviews were completed over three days in December 2006. The questionnaire was then revised and finalized based on feedback from participants in these interviews.

Previously validated questions and scales are used when available. All aspects of the survey are subjected to extensive literature and expert review. Respondents' cognitive understanding of the survey questions is assessed during the pretest phase and revisions made as required. All final data components are verified by NCHS and DRC/CAHMI staff prior to public release. Face validity is conducted in comparing results with prior years of the survey and/or results from other implementations of items.

The survey has been designed to emphasize factors that may relate to well-being of children, including Medical Homes, family interactions, parental health, school and after-school experiences, and safe neighborhoods. The main limitation of the survey is the fact it is based on parents' recollection of screenings received and child's health over the past year, with no opportunity for confirmation with medical records or physical measurements.

Simplicity of indicator

NSCH data have been extensively analyzed and presented graphically on the Data Resources Center website making it easy to use and explain. Professionals can run stratified analyses by subgroups of interest, while the public can see prevalence estimates with brief explanations. Data can be broken out by Medical Home component questions in order to address specific concerns.

"The American Academy of Pediatrics specifies seven qualities essential to Medical Home care: accessible, family-centered, continuous, comprehensive, coordinated, compassionate and culturally effective. Ideally, Medical Home care is delivered within the context of a trusting and collaborative relationship between the child's family and a competent health professional who is familiar with the child and family and the child's health history (AAP, 2002)." While the indicator itself might be easy to obtain, the Medical Home concept can be difficult to define or describe to those who are unfamiliar with it. Numerous initiatives are currently underway to promote and create Medical Homes (HHS, nd).

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This publication was supported by a grant from the W.K. Kellogg Foundation. Its contents are solely the responsibility of the author and do not necessarily represent the official views of the W.K. Kellogg Foundation.

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