Life Course Indicator: Postpartum Contraception

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: Postpartum Contraception (LC-52)

Brief description: Proportion of women using birth control postpartum

Indicator category: Reproductive life experiences

Indicator domain: Service/Capacity

Numerator: Respondents (women having a live birth) who reported that they or their husbands or partners were currently doing something to keep from getting pregnant

Denominator: All respondents (women having a live birth)

Potential modifiers: race, age, education, marital status, parity, health insurance status, Medicaid/non-Medicaid, poverty (e.g. annual household income), pregnancy intention of most recent pregnancy, prenatal care in most recent pregnancy, mode of delivery of most recent birth, outcome of most recent birth, postpartum visit after most recent birth, amenorrhea, breastfeeding status

Data source: Pregnancy Risk Assessment Monitoring System (PRAMS)

Notes on calculation: This question is asked of women sampled for PRAMS-eligibility at two months postpartum. By this time, there are no restrictions on the recommendations for use of contraceptives except for breastfeeding women, who are encouraged to use progestin-only contraceptives rather than combined hormone contraception. Analysts who use the raw datasets should apply the appropriate survey weights to generate the final estimates.

Similar measures in other indicator sets: Preconception Health Indicator D7; Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Benchmark Area Improved Maternal and Newborn Health: Inter-birth Intervals

Life Course Criteria

Introduction

The postpartum period is a brief yet critical opportunity to impact health outcomes for a new mother and any subsequent pregnancies she may have through the mechanism of optimal birth spacing. Failure to prevent unwanted pregnancies during the postpartum time period can have long-lasting health implications for children and psychosocial implications for children, women and families. Implementation of health reform offers a window of opportunity to impact access to postpartum contraception through expanded insurance coverage. However, insurance coverage does not guarantee that women have access to preferred and effective contraceptive methods, and increased access does not always translate to increased appropriate use. Public health, primary care and other stakeholders must address many challenges to achieve increased utilization of postpartum contraception in order to reap the benefits of planned, well-timed pregnancies.

Implications for equity

Access to contraception can be mediated by income. Low-income women have difficulty accessing higher-cost contraceptive methods, such as sterilization (Potter et al., 2012). When women are offered no-cost access to any contraceptive method, many women choose long-acting methods with higher continuation rates and lower failure rates (Secura et al., 2010). Therefore, as an indicator postpartum contraception may in part show the impact of unequal access to effective contraceptive methods of choice through differences in income. However, the implementation of the *Patient Protection and Affordable Care Act* (ACA) includes both expansion of health insurance coverage to populations previously ineligible or unable to afford health insurance as well as requirements for coverage of all Food and Drug Administration (FDA)-approved contraceptive methods without cost-sharing as part of the essential health benefits package for women (Healthcare.gov 2014). These changes are intended to help women access contraception at any income level; it remains to be seen whether these changes will have the desired effect, but research from Massachusetts indicates that low-income women report relatively easy access to contraception several years after health reform was implemented in that state (Dennis et al., 2012).

Rapid repeat pregnancy (a possible consequence of lack of access to postpartum contraception) is associated with negative consequences for educational attainment and employment, among adolescents (Polit and Khan, 1986; Furstenberg et al., 1987). Lack of access to education and employment, especially in early life, are important predictors of poverty. Other research has demonstrated a relationship between income inequality and short interpregnancy intervals in women of all ages (Gold et al. 2004). Therefore, access to postpartum contraception could potentially have significant implications for income inequity through a relationship with educational attainment and access to employment.

Public health impact

Access to and use of effective postpartum contraception reduces births with short preceding interpregnancy intervals as well as unwanted or mistimed pregnancies. Short interpregnancy interval has been shown to be associated with preterm delivery, infants who are small for gestational age, early infant death, and congenital malformations (Grisaru-Granovsky et al., 2009; Hussaini et al., 2012; Kwon et al., 2012; Conde-Agudelo et al., 2006). There is a demonstrated J-shaped association between interpregnancy interval and outcomes such as preterm birth, where very short intervals, less than 18 months, and very long intervals, greater than five years, result in poorer outcomes. These studies suggest an optimal interval of 18 to 23 months (Zhu 2005), but it may vary for subgroups of women. Interpregnancy intervals of at least 12 months are recommended for women who had a live birth, but for women who have experienced a fetal loss, the optimal interval may depend on the timing of the loss, i.e. early miscarriage or near-term stillbirth may have different optimal intervals.

Additionally, some states are leveraging provisions of the ACA and collaborating with their Medicaid agencies to expand access to long-acting reversible contraceptives (LARC) within and beyond the postpartum period, and seeing significant public health impact not only in the prevalence of contraceptive method use, but in other MCH indicators. For example, in 2014, the Colorado Department of Public Health and Environment announced an unprecedented decline (40 percent) in the teen birth rate in Colorado from 2009 through 2014, with three-quarters of the overall decline being attributed to increasing access to intra-uterine devices or implants at low or no cost to low income women being served in family planning clinics (Guttmacher Institute, 2014). The Colorado Department of Public Health and Environment estimates that with increasing access to long-acting reversible contraceptives and the associated decline in teen pregnancy, the state

has saved $42.5 million in public funds in 2010 alone (CDPHE, 2014). Further, recent successes described in South Carolina, as a result of an update to its Medicaid coverage policy in 2012 have spurred great interest in the insertion of LARC immediately postpartum and during the delivery stay. The Association of State and Territorial Health Officials (ASTHO) recently launched a LARC learning community for states to explore the potential impact of Medicaid coverage policies and other reimbursement avenues to further support the insertion of LARC immediately postpartum, among other opportunities to expand access to highly effective contraceptive methods (e.g. Title X family planning clinics, private insurance reimbursement).

Postpartum counseling, as a part of the six week postpartum visit, is a recommended intervention for improving the uptake of postpartum contraception. It is important to note, however, that the content of clinical counseling is difficult to assess. The manner in which contraceptive counseling is delivered is important to women and may affect contraceptive uptake (Yee and Simon, 2011). Therefore, women's report of counseling or clinical documentation of counseling may not adequately explore all the pertinent factors. It is for this reason among others that national experts have increasing interest in LARC insertion immediately postpartum (during the delivery stay) in contrast to the six-week postpartum visit, as well as innovative approaches to ensuring women attend a postpartum visit, including integrating the first well-child visit with postpartum care in the same facility.

Not all contraceptives work with equal efficacy; contraceptive failure rates are highest for the condom and methods such as withdrawal and fertility awareness, and lowest for injectable and oral contraceptives (Kost et al 2008). Access to both preferred and effective methods of contraception should help to reduce unintended pregnancy. Unintended pregnancy, regardless of timing with respect to previous births, is associated with a number of negative health and psychosocial outcomes, including delayed prenatal care, preterm delivery, low birth weight, increased maternal morbidity and mortality, and physical violence during pregnancy (Brown and Eisenberg, 1995; Santelli et al., 2003). Use of contraception in the postpartum period could be expected to have a significant public health impact by reducing births with short interpregnancy intervals and reducing unintended pregnancy.

Leverage or realign resources

PRAMS includes a question that asks women who indicate they are not using postpartum contraception for their reasons why; the responses to this question point to opportunities for education and intervention by a variety of partners. For example, women who indicate they want to become pregnant at the time of the survey (two to six months following birth), present an opportunity for education around birth spacing for programs such as the Supplemental Nutrition Program for Women, Infants, and Children (WIC) because WIC provides services to women and infants including nutrition, birth spacing, and breastfeeding practices. Women who indicate on PRAMS that they do not want to use birth control might be a group that pediatricians can engage during well-child visits. Pediatricians already engage families in discussions about breastfeeding and infant care practices; breastfeeding may be one of the reasons a woman may not want to use contraception, and pediatricians would be able to work with families to ensure they have another child when they are most ready.

As noted above, the postpartum visit is a key opportunity to engage postpartum women in discussions of their future childbearing plans and contraceptive preferences. PRAMS data from 2009 indicate that for the 16 reporting areas, the overall prevalence of receiving a postpartum visit was 88.2 percent, with a range of 84.2 percent in Texas to 94.4 percent in Massachusetts (Robbins et al 2014). Despite the relatively high overall prevalence, there is significant variation by age group and race/ethnicity, with the lowest prevalence of postpartum visits among 18 to 24 year olds (83.7 percent) and Hispanic women (80.3 percent) (Robbins et al 2014). Providers and insurers need to be engaged as partners in encouraging women to return for their postpartum visit as well as to ensure the quality and content of the visit.

Education advocates may have an interest in ensuring access to postpartum contraception and delaying subsequent birth, particularly in the case of adolescent mothers, for whom second and higher-order births during adolescence are associated with lower maternal educational attainment (Polit and Khan, 1986; Furstenberg et al, 1987). In addition, some research suggests that short interpregnancy intervals may have lifetime effects for the child, including poor educational performance for children born after a short interpregnancy interval (Hayes et al., 2006). Short interpregnancy intervals also may have implications for individual and intergenerational poverty, suggesting that antipoverty advocates could be engaged in efforts to increase access and use of contraception. Finally, since approximately half of unintended

pregnancies end in abortion (Henshaw 1998), advocates seeking to reduce the utilization of abortion services could be engaged in this work.

From a statewide policy perspective, recent successes shared by states point to collaboration opportunities with both Medicaid agencies as well as Title X family planning programs to increase access to postpartum contraception. The cost savings documented by the Colorado Department of Public Health and Environment in teen pregnancy alone are persuasive for state leadership, and MCH programs and partners continue to work expeditiously to document the return on investment of expanding access to contraceptive methods for state budgets Furthermore, coordination of activities funded by the Title V MCH Services Block Grant and the Title X Family Planning Program in a state offers a unique opportunity to leverage and realign resources. In a case study published by AMCHP in 2014, MCH programs described how program performance measures reinforce one another; for example, efforts to reduce the rate of low birth weight and preterm births for the block grant are inherently associated with interpregnancy intervals, and point to opportunities for a comprehensive approach for preconception and interconception health. Further, some states utilize the flexibility of the block grant to support the purchase of highly effective LARC methods for the local agencies that provide the direct services (AMCHP, 2014). This level of collaboration and coordination of activities point to numerous opportunities for state MCH leaders and their partners to leverage and align resources.

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

The health impact of postpartum contraceptive use is largely on family and child health. Although some research suggests a link between short interpregnancy intervals and increased maternal morbidity and mortality (Brown and Eisenberg, 1995; Santelli et al., 2003), the research on maternal health impacts of short interpregnancy intervals is somewhat contradictory. Most research in this area focuses on maternal health in the perinatal period; there is little data on long-term health impacts for women experiencing short interpregnancy intervals. Despite this lack of conclusive impact of interpregnancy intervals on maternal health, postpartum contraception has a role in promoting optimal health and recovery of the mother prior to becoming pregnant again. Major risk factors associated with maternal mortality include poor control of chronic conditions such as hypertension, diabetes and obesity. Postpartum contraception can be a mechanism to help a woman gain control of these chronic conditions before deciding (or not) to become pregnant again, increasing the chances for positive outcomes for herself.

However, short interpregnancy intervals have a direct impact on infant health, including preterm birth, low birth weight, and small for gestational age as noted above. Preterm birth can have long-term consequences for the infant as they grow and develop; infants born preterm are more likely to experience apnea, respiratory distress syndrome, intraventricular hemorrhage, patent ductus arteriosis, necrotizing enterocolitis, retinopathy of prematurity, jaundice, anemia, bronchopulmonary dysplasia and a number of infections due to their immature immune systems (March of Dimes, 2013). Additionally, these health conditions and features of the preterm newborn have been associated with longer-term health problems and disabilities. Long-term impacts of preterm birth on the infant include increased risk of autism, intellectual disabilities, cerebral palsy, lung problems, and vision and hearing loss. For example, de Kievet, Zoetebier, van Elburg, Vermeulen, and Oosterlaan (2012) found that very preterm infants have a total brain volume 0.58 standard deviations lower than term infants, which has been associated with reduced cognitive functioning. Furthermore, in addition to potential respiratory distress syndrome after birth, children born extremely preterm have been found to have significant impairment of lung function, particularly in those who have had bronchopulmonary dysplasia (Bolton et al., 2012). Having one preterm birth increases the risk for subsequent preterm births and short intervals can further increase the risk, indicating that postpartum contraception and adequate birth spacing has the potential to reduce the risk both for preterm and repeat preterm birth.

Preventing rapid repeat pregnancies also has implications for individual socioeconomic well-being as described above. (Polit and Khan, 1986; Furstenberg et al., 1987; Gold et al., 2004). Poverty and low educational attainment of both mothers and children can be expected to impact the health of the entire family through a variety of pathways.

Data Criteria

Data availability

PRAMS, which was initiated in 1987, is an ongoing population-based surveillance system designed to identify and monitor selected maternal experiences and behaviors that occur before and during pregnancy and during the child's early infancy.

Forty states and New York City currently participate in PRAMS, representing approximately 78 percent of all U.S. live births. Six other states previously participated. The Centers for Disease Control and Prevention (CDC) maintains a combined dataset with information from all participating PRAMS states, which represents approximately 87 percent of all live births in the United States. CPONDER is a Web-based query system created to access data collected through PRAMS surveys.

The length of time between an event and entry into the sampling frame is typically two to six months. Because PRAMS data are weighted to the final birth file, there is a data availability lag between the close of a calendar year and access to the final PRAMS dataset. As of July 2013, the most current year of data available in CPONDER was 2008.

Although the 40 states and one city that participate in PRAMS have access to their own state data, only states where the minimum response rates have been met are included in CPONDER. For 2000-2006, this required response rate was 70 percent, and for 2007-08 it was 65 percent. The required response rate may limit the availability of a "national" estimate through CPONDER, but states with PRAMS are encouraged to use their own data whenever possible.

The PRAMS survey consists of core questions that all states must include and standard, pilot-tested questions that states may choose to add. In addition, PRAMS allows states to design and add their own questions, and the state is responsible for completing question testing before the question can be included. PRAMS data is available from CDC by submitting a proposal for and data sharing agreement to CDC. Data from a single state can be requested from the state PRAMS coordinator.

Data on postpartum contraceptive use are readily available in PRAMS (D'Angelo et al, 2007; DePineres et al., 2005; Whiteman et a., 2009; Williams et al., 2003). However, at this time only 40 states and New York City participate in PRAMS. Some states have similar surveys (e.g., California's Maternal and Infant Health Assessment (MIHA)). Data linkages are not required (although see below for some potential linkages for the collection of potential modifiers). The question "Are you or your husband or partner doing anything now to keep from getting pregnant?" is a core question in PRAMS, but a follow-up question identifying specific methods is a standard question and may not be used in all jurisdictions. Starting in 2012, the question "What kind of birth control are you or your husband or partner using now to keep from getting pregnant?" became a core question in PRAMS but data will not be available until 2014 (CDC, 2011).

With regard to potential modifiers, some may be more difficult to obtain than others. Routinely collected demographic information such as race, age, education, marital status, parity and health insurance status should be fairly easy to obtain. Pregnancy intention (Bloch et al., 2012) and prenatal care characteristics are most likely to be subject to recall bias, whereas mode of delivery and birth outcome are more proximal and more straightforward. Clinical counseling content is difficult to assess (Akers et al., 2010; Lopez et al., 2012; Tschudin et al., 2007); even matching PRAMS respondents to medical records only provides information on documentation of counseling.

Data quality

PRAMS is a mixed-mode surveillance system that combines mail and telephone surveillance. Each year, the sample is weighted to represent all births that meet the inclusion criteria before reporting. Unlike many health surveys, the PRAMS project has a wealth of information from the birth certificate on those who do not respond by either mode of contact, and therefore weighting can be effective at minimizing differences between respondents and non-respondents.

Since the PRAMS survey is completed retrospectively by a woman two to six months after her birth outcome, some bias may occur due to self-reporting and recall. PRAMS is sampled from live births only, so the data do not include information on other pregnancy outcomes such as abortions, miscarriages, or stillbirths; the data do include responses from women who have experienced an infant death. PRAMS is sampled among singleton, twin, and triplet births, and therefore it is not representative of higher order births.

One study standardized the 1995 National Survey of Family Growth (NSFG) data on unintended pregnancy, which provided an estimate between the GWHS and the PRAMS estimates to use (Dietz et al., 1998). Although the study examined pregnancy intention, it has implications for standardizing the NSFG for postpartum contraceptive use. However, PRAMS remains the recommended data source for postpartum contraception.

Simplicity of indicator

The indicator is relatively simple to measure and to understand as stated. This indicator provides an important and sensitive measure of health behavior that impacts child and intergenerational health, based on a substantial body of literature demonstrating that adequate birth spacing and prevention of unwanted or mistimed pregnancy is beneficial for child, and to a lesser extent maternal, health. However, contraceptive use throughout the reproductive years is an important indicator for women's health, and is not adequately captured by postpartum contraception. A measure of current contraceptive use or ever contraceptive use could be obtained from the Behavioral Risk Factor Surveillance System (BRFSS) or NSFG. These surveys would capture a broader sample of women than PRAMS, including women who have never had a birth, women across a wider variety of ages, and women at different life stages. Men also could be included, which is not possible with PRAMS. These datasets do have some limitations. Although BRFSS attempts to capture all pregnancies, it only asks women about their last pregnancy within the past five years allowing for potential recall bias. Additionally, BRFSS does not query men about contraceptive use. NSFG is a good source for reproductive health information, including contraception, about American women and men. However, NSFG does not provide state-level data, limiting its use at the state and local level.

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