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Maternal Medical Home Process Evaluation

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Abstract

The Maternal Medical Home model of care was designed to support women's psychosocial needs during pregnancy to achieve better birth outcomes. The model was designed collaboratively with the local public health authority, the local coordinated care organization and local prenatal providers to establish care standards that prenatal clinics must follow to be designated a Maternal Medical Home. Clinics with that designation are eligible for an enhanced payment by the coordinated care organization for those patients on Medicaid. While the health outcomes evaluation of this care model has been established, a clear process evaluation had not. This project designed a comprehensive process evaluation to address this critical gap.

Introduction

Clinical Problem

In 2014, the Unites States (US) birth rate was 12.5%, a slight increase from 2013 (National Vital Statistics Report, 2015). Of those births, 44.9% were to women on Medicaid (Markus, Andres, West, Garro, & Pellegrini, 2013). According to data from the National Center for Health Statistics, the overall infant mortality rate in the US is 6% (2013). This is higher than other developed countries such as Finland and Japan, both with a rate of 2.3% (Centers for Disease Control, 2010). Even after removing births that occurred prior to 24 weeks gestation, the US still has a rate of 4.2%, twice that of many other countries (MacDorman & Mathews, 2009).

Women and infant health outcomes have long been thought of as concerns that need to be managed on an individual level between a woman and her provider. However, as population health has been defined as one of the pillars of healthcare transformation, taking a population and systems approach to reducing poor outcomes is being explored in new ways (Johnson, 2016). Consideration and understanding of the psychosocial risk factors that play into pregnancy and birth outcomes and how to influence them is beginning to take shape. Comprehensive coordinated services during pregnancy are a critical factor in healthy outcomes and managing healthcare costs (Rakover, 2016). A focus on standardized risk assessment, entry to care in the first trimester, and care coordination services has been shown to improve birth outcomes (Berrien, Ollendorf, & Menard, 2015). Additionally, standardization of medical practices related to particular pregnancy health concerns coupled with strategic roll out in clinics has also improved birth outcomes in participating clinics (Berrien, et al., 2015). A comprehensive care model has been created based on the literature related to addressing psychosocial health during pregnancy to improve birth outcomes and will be piloted in a prenatal practice. While the model has established health outcome measures to evaluate the pilot's impact on health and financial

costs, it did not have a mechanism for understanding why the model may or may not be successful. Process evaluation is a way to answer the 'why' question. Planning and conducting a process evaluation will allow the team of people planning, implementing, and evaluating the pilot to know why outcomes were or were not achieved (Sanders, Evans & Joshi, 2005; Hulscher, Laurant, & Grol, 2002). In addition to being valuable after the pilot is reviewed, process evaluation during the intervention can provide important insight to know if modifications are needed during the implementation phase (Hulscher, Laurant, & Grol, 2002). The purpose of this project was to develop a process evaluation for the developed Maternal Medical Home care model.

Review of the literature

Psychosocial supports are elements of a person's life that support their psychological, behavioral and emotional health and wellbeing (Hobel, Goldstein, Ma & Barrett, 2008). Significant research exists linking psychosocial risk factors such as maternal stress, maternal smoking, depression, anxiety and racial discrimination to health outcomes, specifically preterm deliveries and low birth weight births (Accort, Cheadle & Dunkel, 2015; Grote, Bridge, Gavin, Melville, Iyengar et al., 2010; Neggers, Goldenberg, Cliver & Hauth, 2006; Dunkel & Tanner, 2012; El-Monhandes, Kiely, Gantz & El-Khorazanty, 2010; Hobel, Goldstein, Ma & Barrett, 2008; Tierney-Gumaer & Reifsnider, 2008; Borders, Grobman, Amsden & Holl, 2007). While research demonstrates connections between psychosocial risk factors and health outcomes, the literature regarding psychosocial interventions and the connection to improving health outcomes is less clear. There is strong evidence that psychosocial risk factors influence birth weight and gestational age and that the use of behavioral and social interventions decrease psychosocial risk factors during pregnancy, what was not found in the literature was proof that decreasing psychosocial risk factors during pregnancy had a positive impact on birth outcomes (Uchino,

Bowen, Carlisle, & Birmingham, 2012; El-Mohandes, Kiely, Gantz, & El-Khorazaty, 2011). In essence, psychosocial risk factors negatively impact birth outcomes, there are ways to decrease these risk factors but decreasing them during pregnancy has not demonstrated a positive impact on birth outcomes. The gap in what is understood is how to impact psychosocial risk factors in a way that has a positive impact on birth outcomes. More research is needed to have better understanding of this. One concept specifically called out in literature is the co-occurring nature of psychosocial risk factors and the need to address them simultaneously to make an impact. A potential strategy to address this need is putting all of the various elements that have been proven successful (screening, care coordination, and behavioral health supports) together to create a comprehensive model that will simultaneously address the psychosocial risk factors as well as assure the important physical elements of prenatal care are achieved.

The creation of the Maternal Medical Home is a strategy in which physical and psychosocial risk factors are addressed in an effort to begin seeing positive shifts in US birth outcomes. A critical factor in understanding the success and challenges of this pilot care model will be the implementation of a process evaluation that will provide details on the implementation process (Schneider, Hall, Hernandez, Hindes, Montez, Pham, Rosen, et al., 2009). The focus of this project has been to design a comprehensive process evaluation that will allow those providing oversight to the pilot a clear understanding of the pilot care model and how it is anticipated to be implemented, establish the intent of the process evaluation, and determine the resources needed to conduct the process evaluation (Sanders, Evans & Joshi, 2005). While the pilot project includes health outcome data collection and evaluation, the establishment of and conducting a process evaluation will allow those reviewing the pilot to know if it has been executed as planned as well as understand why it was successful or unsuccessful. In addition, a process evaluation may be beneficial in determining the care models

potential for replication (Sanders, Evans & Joshi, 2005). Having a strong process evaluation with built in check points will provide the opportunity to make necessary changes in a systematic and intentional way, when needed, during the implementation period (Hulscher & Laurant, 2002).

The Maternal Medical Home Care Model Pilot

The Maternal Medical Home care model has been designed to address the psychosocial needs of women in addition to physical health needs through assessment, intervention, connection to resources, and care integration. Clinics that meet the standards and expectations to become a Maternal Medical Home receive an enhanced payment for Medicaid patients. The standards and expectations of Maternal Medical Homes are the following:

- Standardized Psychosocial Screening- The clinic will utilize the Family Wellbeing Assessment, a standardized tool developed by the Oregon Perinatal Collaborative, at the first or second prenatal appointment.
- Behaviorist Services- The clinic will employ a behaviorist in the clinic to provide behavioral health screening and intervention, behavior modification support, and coordination to mental health services as needed.
- Care Management and Care Coordination- The clinic will integrate a public health maternal child health nurse into practice to provide home visiting, care coordination and case management.
- Effective Contraception Screening: The clinic will complete pregnancy intentionality screening for all members in the third trimester of pregnancy and the postpartum visit.
- Postpartum Care Monitoring, Tracking and Follow Up- The clinic will track women seen for postpartum care and follow up with those who have not been seen.
- Primary Care Provider Linkage: The clinic will assure identification of a primary care

provider for moms and babies after delivery and support the transition of care to the PCP, as needed.

- Tobacco Cessation Efforts- The clinic will provide and track cessation referrals

The following data will be collected and monitored throughout the intervention.

Approach to the Conduct of the Project

Setting and Participants

The Maternal Medical Home pilot site is an obstetrical/gynecological care clinic in a mid-sized Oregon county with a population of approximately 100,000 residents. The clinic is one of four that provide prenatal care in the county. It is composed of both physicians and midwives, and serves publicly (Medicaid) and privately insured patients. The development of the process evaluation happened in conjunction with the pilot clinic site to allow for input and shared decision making with the prenatal providers.

The high level of community, provider and CCO engagement is a strong facilitator of this project. Having a financial incentive has also provided a strong motivation for the clinic to participate. The Affordable Care Act (ACA) increased accessibility to health insurance coverage for many in the US. Along with this healthcare system change, the wide distribution of the Triple Aim, improve the patient experience of care, improve the health of populations, and reducing cost, has provided a focus and overarching goals for the US healthcare industry (Institute for Healthcare Improvement, 2016). These system changes have paved the way to think about how care is delivered and set the stage to make large shifts in care models in which providers look beyond the physical elements of pregnancy and think about the influences of psychosocial risk factors and how to mitigate them. Barriers include CCO staff and prenatal clinic staff having many competing priorities to maintain a focused level of commitment to carrying out the various elements of this comprehensive project, including participation in the evaluation development.

Intervention and Implementation

The clinic and CCO staff were engaged through regular meetings and email communications to develop the Maternal Medical Home model of care process evaluation. An iterative process was used to assure that throughout the implementation period the model moved closer and closer to the desired outcome and that challenges and barriers to implementation were identified early and addressed promptly (Sanders, Evans & Joshi, 2005).

Evolution of Project

The implementation process experienced success and challenges as well as ebbs and flows based on factors within the clinics as well as the CCO. During the development of the process evaluation, a new staff member was hired within the CCO who took a great interest in the work, which added significant resources as far as inclusion of the CCO in the interactive process. With this increased interest within the CCO, the pilot clinic lost several staff. While only one staff member was directly related to the MMH pilot, the strain on the overall clinic caused a decrease in participation in the process evaluation model over time. Despite the inconsistent engagement with the clinic, the implementation was completed with all the proposed elements.

Unintended Consequences

Throughout the development of the project, additional systems level concerns and ideas related to the prenatal and postpartum care of women and newborns were discussed even though they were outside of the scope of the MMH pilot. In some cases, additional projects were implemented. Examples of this include a change in process of how the CCO assigns newborn patients to a primary care provider as well as early design of utilization of the OFWBA in pediatric practices in addition the prenatal clinics.

Outcomes

The outcome of this project is a comprehensive process evaluation that provides the following:

- A description of program delivery
- A logic model to clearly describe the pilot program (appendix A)
- A set of process evaluation questions to be used
- Determination of methods to be used for evaluation
- Identification of resources needed for evaluation
- A comprehensive finalized plan inclusive of all the above (appendix D)

Comparison of Findings to Literature and Expected Results

The implementation of the process evaluation design was consistent with the literature. Expectations of the clinic involvement were high and proved to be disappointing. However, the increased excitement from the CCO was unexpected and welcomed. There were many opportunities for learning throughout this process. While the development of the process evaluation was straight forward, the management of so many involved entities and the challenges that come with the collaborative nature of the work, proved difficult. The outside forces such as clinic staff shortages are barriers that cannot be easily planned for or mitigated against. Further learning would entail strategies to better anticipate challenges and barriers that may occur.

Impact on System Including Costs

The MMH pilot model, if proven effective, will provide a significant impact on the prenatal care system and potentially assist in maintaining health care costs. The process evaluation developed in this project will be a critical component of determining why the pilot project was successful or unsuccessful.

Description of Program Delivery

Implementation

- Clinics shall utilize the Oregon Family Wellbeing Assessment (OFWBA) by administering to patients during the first trimester or one of the first two prenatal visits. The assessment and accompanying guide is to be used to make referrals to the behaviorist, Family CORE or other needed resources.
- Clinics shall hire behaviorist staff and develop workflows to incorporate them into the practice for referral and warm handoffs.
- Clinics shall develop workflows to incorporate the case manager/care coordinator into the practice for referral and warm handoffs.
- Clinics shall develop the skillset to discuss team based care and the various supports in the clinic such as the behaviorist and case manager.

Reporting

- Clinics shall develop tracking mechanisms and processes to report on required reporting elements for quarterly reports.

Process Evaluation Questions

Process evaluation questions will be used to determine how well implementation of the developed pilot model went. All questions deemed relevant were compiled in draft form and then narrowed based on assessment of the pilot model evaluation resources (Saunders, Evans, & Joshi, 2005). Below is a full list of potential questions.

Fidelity

- Was the program implemented as intended based on the description of program delivery?

Dose Delivered

- Which of the MMH Standards were implemented?

Dose Received

- To what extent did the clinic modify workflows to account for new team members (behaviorist and public health nurse)?
- What were patient reactions to the Oregon Family Wellbeing Assessment (OFWBA)?
- What were patient reactions to referrals to the behaviorist and Family CORE?
- What were patient reactions to warm handoffs with the behaviorist and Family CORE?

Reach

- Were at least 85% of pregnant women assessed with the OFWBA?
- Were at least 75% of women with a Family CORE or behaviorist referral indicator referred to services?
- What was the number of women who saw behaviorist compared to total women seen in the target population?
- What was the number of family core referrals made compared to total women seen in the target population?
- What was the number of referrals who engaged in services compared to total women seen in the target population?
- What was the number of women screened with OFWA compared to total women seen in the target population?

Recruitment

- What were barriers to recruiting staff?
- What procedures and workflows were used to engage women and refer or provide warm handoffs to services?

Context (organizational, community, political or situational factors influencing implementation)

- Organizational
    - Did the clinic team have a regular meeting/check-in to discuss the new processes?

  - Was the clinic able to hire needed staff to implement model in a timely manner?
  - Did the clinic follow reporting guidelines and timeliness?
- Community
  - To what extent did community barriers influence model implementation?
- Did any political or situational barriers influence model implementation?

Methods for Process Evaluation

The methods for process evaluation are details on how the information and identified process evaluation questions will be answered and data sources that will be used (Saunders, Evans, & Joshi, 2005). A clinic self-report questionnaire (appendix B) and clinic quarterly report (appendix C) have been developed as tools for data collection. After a list of all potential sources was developed it was narrowed based on resources available.

- Fidelity possible data sources: clinic self-report questionnaire
- Dose Delivered possible data sources: clinic quarterly report, CCO observation, billing/claims data, chart audit
- Does received potential data sources: patient questionnaire or interview, clinic/provider questionnaire or interview, OFWBA Implementation Workgroup feedback and discussion
- Reach possible data sources: Clinic quarterly report, Family CORE referral log, clinic based on claims data
- Recruitment possible data sources: documentation of clinic workflows
- Context possible data sources: clinic questionnaire or clinic interviews

Maternal Medical Home Process Evaluation Plan

After reviewing all potential evaluation questions and methods and comparing to the resources at hand for the pilot project, the final plan was drafted, appendix D.

Conclusions

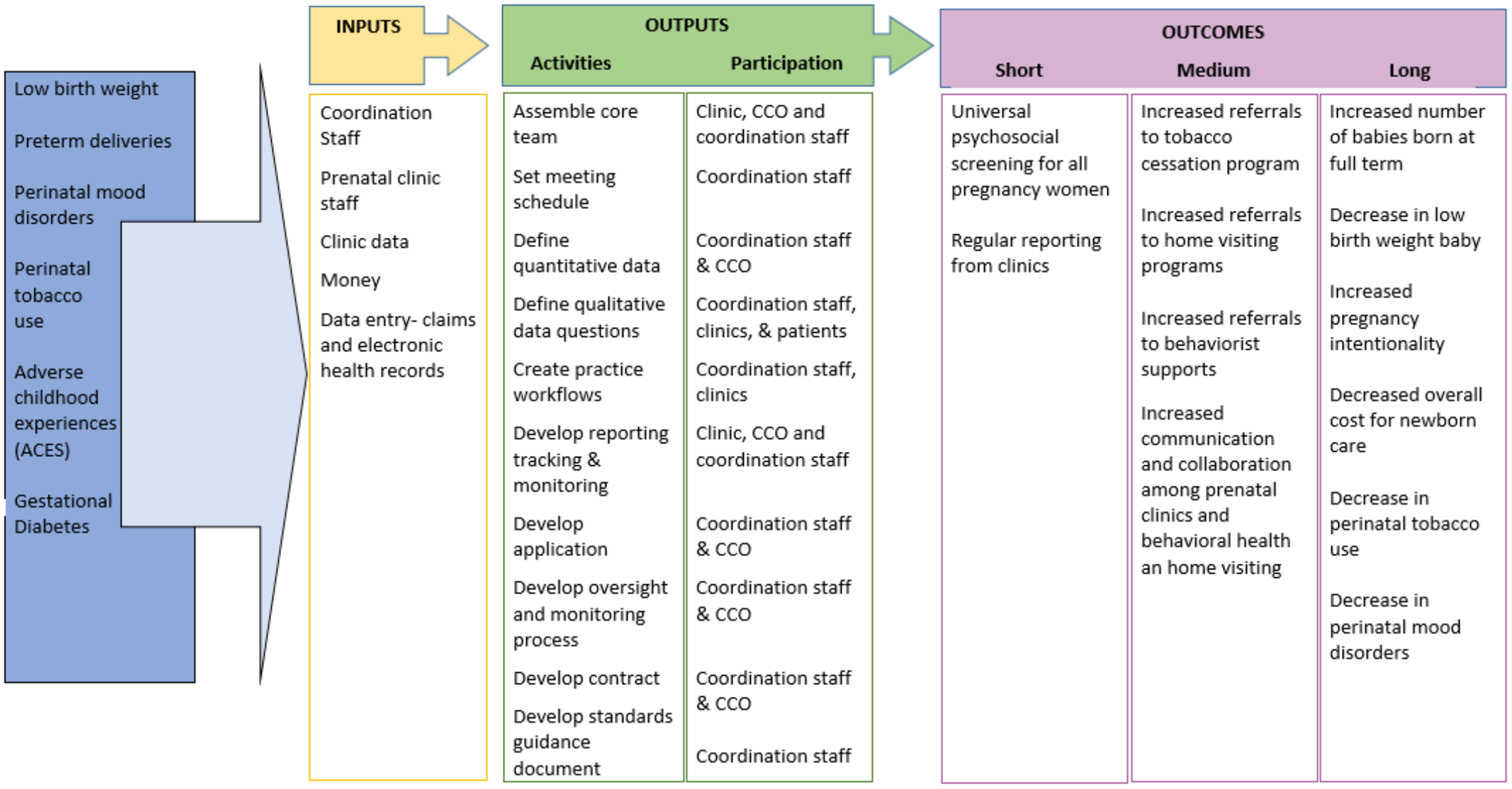
Process evaluation is a critical piece of a successful project. It allows a project to be implemented in a methodical way and provides opportunity and guidance for shifting processes when needed. This ability to quickly identify problematic elements in an intervention is key in finding ultimate success. Process evaluation will also provide insight and understanding into the successes and failures of a project. This is critical in being able to sustain and replicate a successful intervention.

Summary and Next Steps

The next step of this project is to implement the designed process evaluation model. This will begin by setting an official start date to begin the comprehensive plan. It would then be crucial to make expectations of the entities involved very clear and concise as well as training and guidance on use of the reporting tools. Regular check ins with the clinics to review findings will allow continued participation and opportunities for clinic and CCO engagement.

Appendix A

Maternal Medical Home Logic Model



Appendix C
Clinic Quarterly Report Template

Clinic Name											
YCCO 4th QTR 2016 OB PATIENTS											
NAME	**DOB**	**MEM ID**	**OB Start Date**	**Delivery Date**	**EDD**	**Notes**	**Behaviorist**	**WELL SCREEN**	**TOB USE REF**	**TOB QUIT**	**CORE REF**

Appendix D
Comprehensive Maternal Medical Home Process Evaluation Plan

	Evaluation Questions	Data Source	Collection Tool & Procedure	Data Collection Timing	Data Analysis	Reporting
Fidelity	1. Was the program implemented as intended based on the description of program delivery?	Clinic self-report	Clinic- Self-report Survey (appendix B)	6 months and 1 year post implementation	Scored based on percentage of elements implemented as intended	Formative
Dose Delivered	1. Which of the MMH Standards implemented?	Clinic self-report	Clinic- Self-report Survey (appendix B)	6 months and 1 year post implementation	Scored based on percentage of standards implemented	Formative
Dose Received	1. To what extent did the clinic modify workflows to account for new team members (behaviorist and public health nurse) 2. What were patient reactions to referrals to behaviorist and Family CORE? 3. What were patient	Clinic self-report	Clinic- Self-report Survey (appendix B)	6 months and 1 year post implementation	Qualitative analysis of clinic self-report	Formative

	reactions to warm handoffs with behaviorist and Family CORE?					
Reach	1. Were at least 85% of pregnant women assessed with the OFWBA? 2. Were at least 50% of women with a Family CORE or behaviorist referral indicator referred to services? 3. What was the number of family core referrals made compared to total women seen in the target population? 4. What was the number of referrals who engaged in services compared to total women	Clinic reports Family CORE referrals Clinic based claims data	Clinic Quarterly Report (appendix C) Family CORE Referral Log CCO claims report	15th of the month following he last month of the quarter Quarterly Quarterly	Number of women with intended intervention compared to the total number of target population	Formative

	seen in the target population? 5. What was the number of women screened with OFWA compared to total women seen in the target population?					
Recruitment	1. What procedures and workflows were used to engage women and refer or provide warm handoffs to services?	Clinic self-report	Clinic- Self-report Survey (appendix B)	6 months and 1 year post implementation	Qualitative analysis of clinic self-report	Formative
Context	1. Did the clinic team have a regular meeting/check-in to discuss the new processes? 2. Was the clinic able to hire needed staff to implement model	Clinic-self report	Clinic- Self-report Survey (appendix B)	6 months and 1 year post implementation	Qualitative analysis of clinic self-report	Formative

	in a timely manner? 3. Did the clinic follow reporting guidelines and timeliness?					

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