



Toolkit for Maternal Health in Communities and Health Systems

Prepared by: **Omara Afzal**, DO, MPH, Mount Sinai Health System

Prepared by **Jamillah Hoy-Rosas**, MPH, RDN, CDCES, One Drop

Prepared by **Brett Ives**, NP, CDCES, Boston University School of Public Health

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ABOUT THE PROGRAM

Clinical Scholars is a national leadership program of the Robert Wood Johnson Foundation led by the University of North Carolina at Chapel Hill. Learn more about RWJF's Leadership for Better Health programs by visiting: rwjf.org/leadershipforbetterhealth

ABOUT THE TOOLKIT

The toolkit can be used to guide needs assessments and maternal health program design by other communities with high maternal morbidity and mortality.

For more information contact:

omara.afzal@mssm.edu

Toolkit for Maternal Health in Communities and Health Systems

In New York City between 2006-2010, African American women were 12 times more likely to die from pregnancy-related causes than non-Hispanic White women; Asian/Pacific Islander women were more than four times as likely and Hispanic women were more than three times as likely to die from pregnancy-related causes during the same time period. Similar trends are noted for severe maternal morbidity, which is a life-threatening diagnosis or life-saving procedure during delivery. While the severe maternal morbidity rate differed by race/ethnicity, overall severe maternal morbidity was highest in the lowest income zip codes in NYC.

The reasons for race and place disparities in maternal health outcomes are complex, and recent studies have attributed them to a high burden of pre-existing chronic illness, chronic stress, and racial bias of health care. Furthermore, the U.S. has an overall system of care that focuses more intently on the baby than the mother, particularly in the postpartum period. Mothers are taught to take their prenatal vitamins, avoid pathogens from unpasteurized products, and count belly kicks, but are often unarmed in knowing when and how to seek care for their own illnesses, or how that care relates to the health of their baby. Postpartum women often fall through the cracks in the system and preventable emergencies occur, such as hypertensive crises, seizure, stroke, ketoacidosis, and worsening comorbid conditions. Women often do not receive the health maintenance and disease management instruction and care that they need in the postpartum period. For instance, very few women with gestational diabetes return for the recommended postpartum glucose testing. Women often do not have adequate breastfeeding support postpartum and disparities in breastfeeding initiation and maintenance are associated with race and income. Additionally, low-income mothers have low rates of receiving critical blood pressure checks, depression screenings, and other support that can help women get and keep their health on track after childbirth.

Needs- and Assets-Based Approach to Designing Targeted Maternal Health Interventions

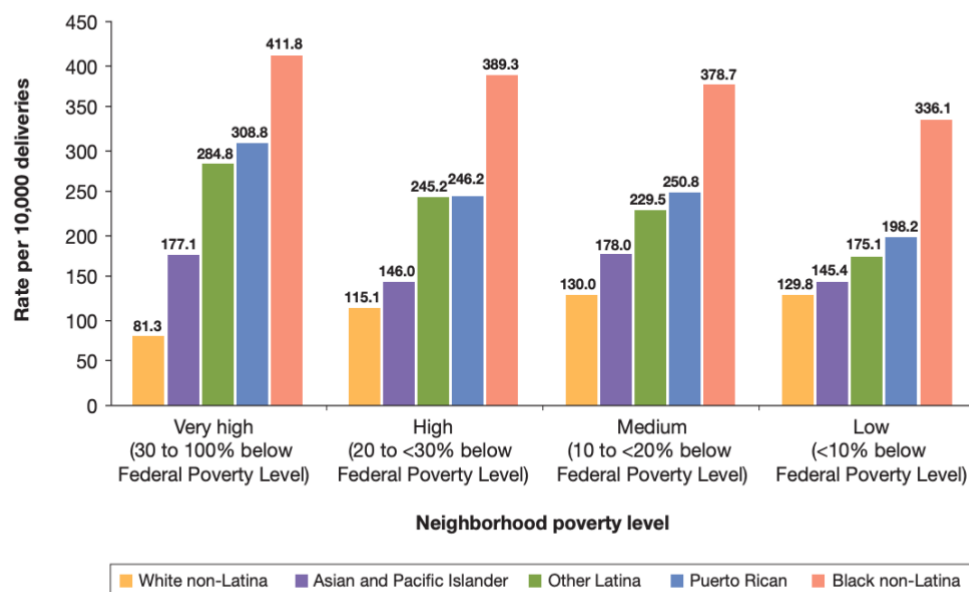
This project employs mixed methods to explore the barriers, needs, and assets of prenatal and postpartum women, their families, and their communities. This project will also begin supportive measures during pregnancy and postpartum with digital health solutions, including focused nutritional counseling and text-message based education support, based on previously found gaps in care. The needs and assets assessment will also inform design of a maternal health community health worker (health coaching) program.

The U.S. has the highest rate of maternal deaths among developed countries, 60 percent of which are preventable with better access to prenatal and postpartum care and self-management of chronic diseases.



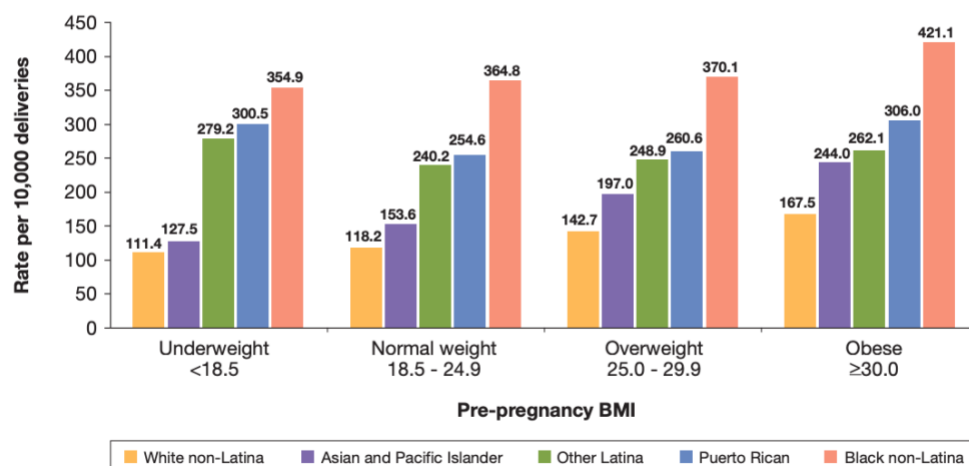
In Harlem, where Mount Sinai operates, severe maternal morbidity occurs in 302.6 per 10,000 births, compared with 108 in neighboring Upper East Side.

Figure 17. Severe Maternal Morbidity by Neighborhood Poverty Level* and Race/Ethnicity, New York City, 2008–2012



*Neighborhood poverty level was based on the mother's New York City residence zip code and indicates the percentage of residents of that zip code with incomes below the Federal Poverty Level. Analysis was restricted to New York City residents.

Figure 23. Severe Maternal Morbidity by Pre-Pregnancy Body Mass Index and Race/Ethnicity, New York City, 2008–2012



Planning

The Mount Sinai Hospital Obstetrics and Gynecology Ambulatory Practice is a long-standing community clinic serving a largely Medicaid and public insurance population in NYC. The current case management care model depends on clinic-based teaching and telephonic self-management education and support in the postpartum period. Though this has shown some success, the no-show rate for postpartum visits remains high (approximately 40%), especially among those mothers with high-risk obstetrical issues.

Studies have not yet focused on how using mobile health (mHealth) specifically can improve postpartum care. Our goals were to use a stakeholder-informed approach to the interventions designed for maternal health programming. Delays with IRB approval and COVID-19 presented some challenges which led to a text-based intervention, with the plan to develop a maternal health coaching program next based on findings of the interviews needs-assessments.

PROJECT AIMS

- Understand the lived context for Mount Sinai's prenatal and postpartum patients and community in New York City (NYC) in New York State (NYS)
- Translate findings into education for health providers and community at large
- Provide support systems for OB patients during their pregnancy and postpartum with digital health solutions to engage patients and improve care
- Use needs and assessments ascertained during interviews to build the foundation of a maternal health coaching curriculum for future programming

This project employs mixed methods to explore the barriers, needs, and assets of these prenatal and postpartum women, their families, and their communities. It will also begin supportive measures during pregnancy and postpartum with digital health solutions, including focused nutritional counseling and text-message based education support, based on previously found gaps in care, with ongoing program development based on perceived needs by the community.

PROJECT PLAN

- Design and conduct a Needs and Assets Assessment
 - Educate health care providers based on assessment findings
 - Perform outreach to community organizations
- Design a six-week text-message postpartum support program for pregnant women to provide educational, social, and logistical support
 - General pregnancy population
 - Pregnancy population with hypertension
- Use tele-health video visits for nutritional counseling
- Collaborate with local food pantry for monthly waiting-room programming



TEAM COMPOSITION

- Omara Afzal, DO, MPH: Project Lead and Obstetrician/Gynecologist
- Jamillah Hoy-Rosas, MPH, RD, CDE: Project Lead and Dietician, Certified Diabetic Educator
- Brett Ives, NP, CDE: Collaboration on needs assessment, program design and analysis
- Leny Rivera: Health Coach and Spanish-language interviewer
- OBGYN Clinic Social Worker Team: Point of care coordinators for program referrals



KEY SKILL SETS

The key areas of expertise and skill sets that were required to successfully carry out the project included:

- Content expertise (OB/GYN, chronic condition management, health coaching) to effectively design the project.
- Health care operations expertise to integrate new programming into an existing health system.
- Research expertise to carry out a needs assessment and evaluation.
- Language expertise (Spanish) to conduct the needs assessment interviews.

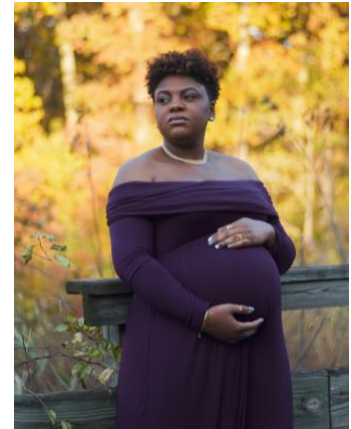
Jamillah Hoy-Rosas is an expert in health coaching design and implementation as well as chronic condition management. Brett Ives is an expert in chronic condition management, has experience with health coaching, and possesses the research expertise required for the needs assessment and evaluation. Omara Afzal is medical director of a large OB/GYN practice and possesses expertise both in health care delivery and maternal health, the content focus of the project.

COMMUNITY PARTNERSHIPS

The program was initially informed by community-based organization City Health Works (CHW) in Year 1. City Health Works is embedded in communities in Upper Manhattan and provides chronic condition management at home and in the community via health coaching. Health coaches from CHW informed the design of the needs assessment including the interview guide of prenatal and postpartum women (Appendix B and C). In Year 2 and 3, this program worked within the Mount Sinai Hospital Obstetrics and Gynecology Ambulatory Practice to assess current resources and programming available with community partners. This was used to create a foundation for the interview guide of women in the community and their perceived understanding of available needs as well as wanted programming.

FUNDING

Funding for this program was provided by Clinical Scholars, a program of the Robert Wood Johnson Foundation.



VOICES OF THE MOTHERS

Below are a few pages of quotes from interviews. The quotes on this page and page 6 highlight the appeal of a support person / health coach particularly with:

- Emotional support
- Problem solving and information
- Skills building and navigation

“Communication, reaching out to someone like me, especially during these trying times. To be able to talk to someone, to have an understanding on my level.”

“Consistency, having one health coach would [build] trust, familiarity.”

Project work

NEEDS AND ASSETS ASSESSMENT: PART 1

The team carried out foundational steps for the needs assessment, which included a review of local maternal health-related epidemiological data, community resource mapping, stakeholder analysis, and in-depth literature review. Information from these activities provided a broader understanding of severe maternal morbidity and mortality disparities in New York City, as well as commonly reported needs and assets of our target population. This research also informed design of the interview guides used in Part 2 of the needs assessment.

NEEDS ASSESSMENT: PART 2

The second part of the needs assessment is to more deeply research the lived experiences, needs, and assets of the project's target population: prenatal and postpartum women receiving care at Mount Sinai. The interviews provide insights that could not be gained via the secondary research in Part 1 of the needs assessment. Interviews are also conducted with maternal health providers (OB physicians, midwives, nurses, social workers, and patient navigators). These stakeholder perspectives will allow the team to design the most effective possible maternal health programs, both the mHealth program and future maternal health coaching program.

The Maternal Health Matters logic model, community assessment interview guide, postpartum text program content, and project budget are in Appendices A-E.

TEXT MESSAGE INTERVENTION DESIGN AND IMPLEMENTATION

The text-message based educational program asked the following question: Does mhealth in the postpartum period improve postpartum care by increasing adherence to postpartum visits through improved education and support? We designed a randomized control trial to assess for effectiveness of such a program. Study design was as follows:

- **Population:** We use a sample size of 186 patients powered to detect a 20% change in adherence to the postpartum visit. We aimed to enroll and randomize 200 patients. We included English-speaking patients over >18 years old who received prenatal care and delivered at MSH, and had a working cell phone.. We excluded patients who received prenatal care at MSH but delivered elsewhere, patients who delivered at MSH but received prenatal care elsewhere, patients who received no prenatal care, and patients with fetal demise.
- **Randomization:** After enrollment patients were randomized into either the control group or one of four text message groups based on their type of delivery and presence or absence of hypertensive disease.
- **Text Program:** Our text program included 4 pathways of text messages, which were uploaded into the RxU system, an application developed by the Sinai App Lab which sends automated text messages to a patient's phone with no need for an application. Patients received 2-3 texts a week with content on everything from exercise to breastfeeding, added support and phone numbers to Social

“Lots of women do it alone, don't have the help I do. **It's important to know that someone is checking up on you.**”

“**Having someone available**, at any hour, for any concern, to answer questions. I have no one but myself.”

“With the first timers a **coach can give them the best way possible**, give them that info, what to expect, coach throughout the pregnancy.”

“Single mom navigation, going to the doctor from home for the first time with the baby, going grocery shopping. **They can come in the first week and say ‘this is how to do it, let me show you’.**”

work/nursing and lactation, as well as patient-specific appointment reminders. Patients in the hypertensive and C-section pathways received additional directed messaging. The patient's postpartum appointment date was entered into the system on enrollment in order to appropriately space text messages and reminders.

- **Follow-up:** Our primary endpoint was attendance to the postpartum visit. Secondary endpoints were % breastfeeding and using contraception, number of emergency visits, Edinburgh depression score, and adherence to glucose tolerance and blood pressure checks if applicable. Charts were reviewed from delivery through the postpartum visits when patients also received a survey about their experience. Text interactivity data was also reviewed.

SAMPLE OF TEXT CONTENT

SMS TIMING & CONTENT FOR PATHWAY #1: VAGINAL DELIVERY	
Day Of Enrollment	Welcome to the fourth trimester! We'll be sending you several texts a week to support you until your postpartum visit. You can call the OBGYN Clinic at Mount Sinai 212-659-8667 at any time to schedule appointments or speak to a nurse.
D+2	<u>Breastfeeding</u> is not easy, but the benefits for you and your baby are worth the effort! Click to learn more. If you're having difficulty or would speak to someone about breastfeeding, reply YES >> Call 800-994-9662 to speak to a lactation specialist.
D+4	Some <u>bleeding</u> is normal for up to 6 weeks after delivering your baby. It is not normal to soak through multiple pads in an hour or feel dizzy from bleeding. Go straight to your nearest Emergency Room if you experience dangerous bleeding.
D+7	Eating <u>healthily</u> postpartum can help you achieve a healthy weight and prevent chronic health problems like diabetes and cancer. Start by avoiding foods with high sugar and drinking lots of water. Click to learn more.
D+9	Feeling down? Up to 80% of new moms may experience <u>baby blues</u> after childbirth. Feeling tired and emotional is normal as your hormones fluctuate postpartum. Click to learn more. If you feel like your symptoms are something more, reply YES >> Call our Social Workers at 212-241-6861 to talk.
D+11	Did you know it's possible to get pregnant as soon as 4 weeks after delivery? It is healthiest to wait 18 months to let your body heal before another pregnancy. Your OBGYN can help you <u>prevent pregnancy</u> in many different ways. Click to learn more.

VOICES OF THE MOTHERS

These quotes highlight the impact of COVID-19 particularly:

- Anxiety / Depression
- Emotional and Instrumental Support
- Work

"COVID impacted me in ways I couldn't have imagined. Fear of COVID for delivery, for the baby, for going back to work."

"I felt really isolated. All of my friends' pledges [of help] fell to the wayside. I felt very lonely."

"I think the fact that my partner can't come in the room... he would have more of a bond if he could see what I am seeing."

"I can't work because my son is at home, not at school."

Evaluation and dissemination

Process and impact evaluations of the Maternal Health Matters project will be conducted using primarily quantitative and some qualitative methods and were designed and put in place before program initiation. Process evaluation will measure key milestones and metrics regarding the needs assessment (number of patients interviewed, completion of key assessment activities) and the mHealth Program (number of participating patients, satisfaction of participants). Impact evaluation is a randomized controlled trial of the mHealth Program, and measures postpartum visit attendance as well as ER visits and other key postpartum follow-up indicators.

PROCESS EVALUATION

MEASURE	SOURCE
Needs/Assets Assessment	
Stakeholder analysis, literature review, epidemiological and community resource mapping	Project staff report
# of patients interviewed and saturation point achieved	Project staff report
Patient demographics	Electronic medical record
mHealth Program	
# of patients participating in mobile-health texting program	Project staff report
Texting program participants end-of-program experience	Survey
# of successful telehealth visits conducted	Hospital Admin Data

IMPACT EVALUATION: MHEALTH PROGRAM

MEASURE	SOURCE
Postpartum appointment attendance rate	Hospital Admin Data
# of additional visits, emergency room encounters	Electronic medical record
# received postpartum glucose testing, if needed	Electronic medical record
# attended BP check visit, if scheduled	Electronic medical record
# attended wound check appt, if scheduled	Electronic medical record



KEY COMPONENTS

Recommended components of a maternal health coaching program, based on preliminary findings of interviews:

- Transportation voucher (56%)
- Doula (50%)
- Childbirth education classes (43%)
- Accompaniment to prenatal visit (37%)
- Childcare (30%)
- Coaching on managing stress and/or nutrition counseling (25%)
- Community resource linkage and/or advocacy with medical care (25%)
- Interactive online education program (25%)
- Partner education (25%)

FINDINGS

From mHealth Text-messaged Education Program: No significant difference in demographics between groups. Average age 29, parity 2, >60% of patients were single, ~20% had hypertensive disorders, 70% care by MD, 50% delivered vaginally, 80% had no postpartum complications. Overall show rate of 62% (pre-COVID 59%, post-COVID 68%). No significant difference in primary outcome pre and post covid. When separated out by treatment pathway, patients in the C/S and HTN pathways were significantly more likely to present to the ED or L&D postpartum for acute complaints.

The strengths of this study included that it was a randomized control trial and used evidenced-based educational content. Additionally, the software used, the RxU program, is user friendly and low tech. It was created by the Sinai app lab and has been used in the Gastrointestinal department for colonoscopy prep reminders, and Heart Failure patients. It is a proven successful and adaptable platform if the content and timing of messages is correct. Limitations of this study were that COVID occurred at the study midpoint, which may have been a confounding variable with scheduled televisits. However, we saw proportionally more patients attend televisits, which may indicate an unexplored avenue to improving patient care during this period. Additionally, we had low survey participation, providing us with less subjective data for future improvement (only 10 of 191 participants responded as link was sent during COVID pandemic). Lastly, timing of texts based on appointment dates, which were not always scheduled before a patient left the hospital, occasionally leading to delays in enrollment in RxU system which required this date to send messages.

We do believe that mHealth is an effective health care tool as evidenced by successes in prenatal care and other medical conditions. In this pilot study, mHealth did not increase adherence to postpartum care, but we did find that patients in the C/S and HTN pathways were significantly more likely to seek care in ED/L&D. This may suggest that text messages improved knowledge of warning signs regarding conditions such as wound infections and pre-eclampsia, however it also demonstrates a possible disconnect between text messaging and clinic availability.

From Needs Assessments Interviews (preliminary findings):

1. Impact of COVID-19 on mental health, social support systems, employment, and care experience
2. Importance of continuity of care
 - a. Provider consistency
 - b. Continuity from prenatal to postpartum periods and beyond
3. Highly variable awareness and use of community- and clinic-based resources
4. Appeal of a support person (coach) who could assist with 1-3
5. Importance of transportation support and online/social media in future program and policy design

Challenges, successes, and lessons learned

Unfortunately in this program, the institutional review board (IRB) approval took an excessive amount of time, greatly delaying the start of our program activities. Due to the fact of multiple involved organizations and designing a program from scratch, the IRB approval took nearly all of Year 1 to obtain full approval. In that time frame, we were able to complete thorough literature reviews, stakeholder analysis, and design of the potential program, but were limited in recruiting patients or carrying out research activities. Additionally, once IRB was finally approved at the end of Year 1, we then were faced with a change in the host organization for the grant funding this program. Due to that, the program activities were again delayed an additional 3 months, an unexpected challenge that greatly affected our timeline and anticipated program completion.

Our program was based greatly on in-person activities, focus groups and face-to-face interviews, as well as health coaching which involved visiting the homes of patients and interacting in the community. Unfortunately, with the COVID-19 pandemic in March, 2021, our entire planned activity needed to change with social distancing and restrictions to improve health safety. The start of the pandemic also timed to right as our IRB and host organization change was complete, so we were then faced with the inability to complete any research activities during the early phases of the pandemic until mid-summer, 2021. At this time, we needed to change focus to a more distant approach to programming that could still accomplish our aims and build the foundation for a strong health coaching program in the future.

Due to the challenges listed above, we found that the changes in our programming actually lead to some successes in understanding the lived context of our patient population. Instead of designing a program based on our perceived understanding of needs of the community, we spent more time doing a deep dive with our patient population. This included greater focus and analysis on the complex nature of patient experiences, available services, and wanted programming, to better inform any future program activities.

Though our randomized control trial was a negative study without significantly different findings between control and test groups, there are some clinical and policy implications of this program. We found that there is a strong interest in counseling and educational outreach during a critical time such as the postpartum period, and that further adaption of the program may prove to be useful in the future. We suspect that the content and timing of texts for our program may not have been optimal for patients, as timing was based exclusively off of the postpartum appointment date which could often change. It is important for further adaptation of these programs by possibly surveying patients to see what was liked and disliked about the program, as well as working with the Sinai App lab to analyze any improvements to be made to increase adherence to postpartum care. Additionally, we hope to translate our text programs into Spanish.

CHALLENGES

- IRB and ensuring a sustainable host organization
- COVID-19 pandemic and reforming the program from an in-person and interactive coaching program to a more remote-resources and needs assessment

SUCCESSES

- Spending more time listening to our patient and community population to fully understand the depth and complexity of supports and needs in pregnancy and postpartum
- An exploration into digital technology solutions for education and counseling through a text-messaging based postpartum support program

SHIFTS IN THINKING

Our initial program was ambitious and action-packed, and may not have taken the time and analysis needed to really develop a stakeholder-informed and community desired program. We realized through our program activities, and the challenges faced, that there is a lot more listening to be done, and in order to advocate for really listening to patients as a health care institution, we have to also practice that philosophy ourselves.

We also found that roadblocks such as IRB approval, organizational slow-downs, and in fact even pandemics, could lead to more well-thought out programming that does not rush through the planning phases. And indeed, even the planning-phase of good programming can sometimes be as substantial and developed as the program itself.

Recommendations

To approach the wicked problem of high maternal morbidity and mortality, we recommend ingenuity and adaptability.

GETTING STARTED

In tackling this issue, a good understanding of the local and regional data regarding maternal health is important. We recommend performing a thorough needs assessment, including review of local epidemiological data, a review of current literature, and assessment of key stakeholders in the arena. This information can then be used for resource-mapping, to assess current available programming and potential gaps in services. Additionally, close involvement with an organization, such as a clinic or health-care provider that is a central hub of care for patients will allow for access to a patient population that though they are receiving care, may need additional support from a community and home perspective.

What we would recommend others to NOT do in tackling this issue: do not come in with preconceived notions on what the community needs or wants in terms of maternal health programming. It is an easy track to fall on for individuals with experience in maternal health or health coaching to assume they know what patients need or to plan a program based on what we THINK the issues are. Time must be spent to really explore patient and community understanding and needs, and to prioritize listening to the community we aim to serve.

BEST PRACTICES

Our best practices are as highlighted above in what we recommend and how to get started on an issue such as maternal health programming and health coaching.

In research activities, take the time to understand the IRB timeline, and plan accordingly with the knowledge that research activities may be on hold until the program has been reviewed and approved. In an aim to have the best practices for human subject research and ethical approval of all planned activities, the IRB is an important component to ensure that all issues are thought through and safe for participants. Additionally, do not allow organizational changes to be a total roadblock in planned activities- there may be a delay or a pivot in direction, but for important work it is vital to keep advocating for your communities to meet the goals of objectives.

Best piece of advice: take the time to design a stakeholder-informed program or policy. Not enough time can be spent on the importance of this issue. Too often, programs are designed based on the program lead's understanding of the issues, which may be well-intentioned but may not always be in line with the community needs. A true stakeholder-informed program will take time and effort to fully explore but will be worth it to inform on a program that is not only for the community, but by the community.



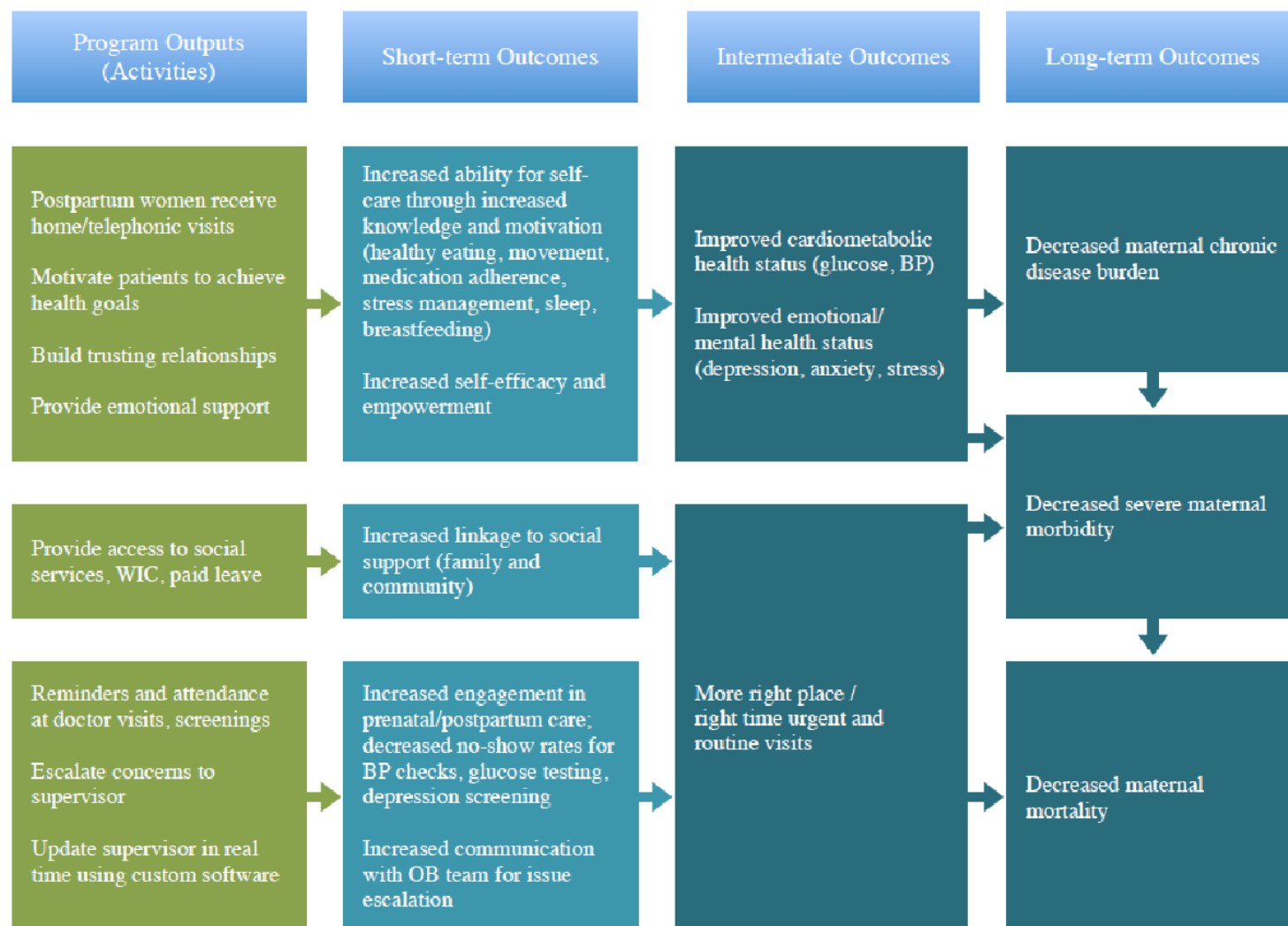
GET INVOLVED

If you are looking to take action on this urgent issue:

- Reach out to your Members of Congress in the House of Representatives and the Senate to make your voice heard about why maternal health matters
- Spread the word on social media: I'm joining the @BMHCaucus to end America's maternal health crisis and save the lives of [INSERT STATE] moms. #Momnibus #SaveMoms
- Join the efforts of community-based organizations who are leading critical initiatives where you live
- Stay informed about Momnibus updates by following the Black Maternal Health Caucus on Twitter @BMHCaucus

Appendix

APPENDIX A: PROGRAM LOGIC MODEL



APPENDIX B: MATERNAL HEALTH INTERVIEW GUIDE FOR PRENATAL WOMEN

INTERVIEW PROTOCOL: PRENATAL PERSPECTIVES

INFORMED CONSENT

Hello, welcome! My name is Jamillah Hoy-Rosas and I am a researcher and health care administrator. I am working with Mount Sinai Obstetrics on the project I am about to describe to you. Thank you for making time to talk to us today! Before we start asking you interview questions, I'd like to give you a quick refresher about our study, just to make sure you are fully informed and comfortable with doing this interview.

Mount Sinai Obstetrics has decided to develop a maternal health coaching program for prenatal and postpartum women. A maternal health coach is a person who can provide you with support and health information during pregnancy and after the baby is born; they could call you or visit you at home or come with you to a doctor's visit. We are interviewing 30 prenatal or postpartum patients who get their health care from Mount Sinai Obstetrics. Your responses and insights from this interview will help us design the best possible maternal health coaching program. We are planning to offer this coaching program to all women, with a focus on those with gestational diabetes or high blood pressure. Have you ever experienced diabetes or high blood pressure? Whether you have experienced these health conditions or not, your feedback is very important to us!

Anything you say will be combined with what other patients say in our report, and we won't quote any patient by name -- so no one at Mount Sinai or elsewhere will know which patient said what. We are keeping your identity a secret because we want you to feel comfortable sharing your honest opinions about your prenatal and postpartum experiences at Mount Sinai and in general. We think this conversation will take about 45 to 60 minutes.

You can skip any question you don't want to answer – just say “I'll pass on that one.” You can also end the conversation at any time if you don't like how it's going, and we will still send you the \$50 gift card we promised you. Your decision to participate or decline participation in this project will not in any way affect your care at Mount Sinai. This study may not directly benefit you, but it could benefit other women and families in the prenatal or postpartum period who enroll in the coaching program.

We'd like to record this conversation, to make sure our notes are complete. The audio recording and our notes will be saved to a computer that only researchers on this project can access and will be destroyed when our study is done.

Now that we've told you about our study, are you OK with us turning on our audio recorder and asking you our interview questions? Do you have any questions for me about our study?

How is your pregnancy going, how many weeks are you? Do you have any other children?

When answering the questions below, we would like you to think about your current pregnancy experience. Some questions will be multiple choice questions and some will be whatever you want to tell us.

Part A: Interview Questions

1. What support or resources have been helpful to you during pregnancy?
 - a. What has been the role of your family in terms of support or resources?
 - b. Your partner/baby's father
 - c. Friends
 - d. What resources/services in the community/neighborhood did you use? Say No if you did not receive the service or Yes if you received the service.
 - e. WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children)
 - i. Food stamps or money to buy food
 - ii. Childbirth education classes
 - iii. Breastfeeding counseling (La Leche League)
 - iv. Child care
 - v. Doula services
 - vi. Counseling for family and personal problems

- vii. Help to quit smoking
 - viii. Church program
 - ix. Food pantry
 - x. Program that provides clothes or other items for baby
 - xi. Other Please tell us:
 - f. [PROMPT] What other services in the community do you know about, if any?
 - g. [PROMPT]: Also, were there resources from your OB clinic that you found helpful?
 - h. **What are the best resources that you have used?
2. Many people have things they know or believe about pregnancy and motherhood that they learn from their families and other sources.
- a. Do family or friends have ideas about pregnancy and motherhood that they passed on to you?
 - i. [PROMPT]: What do they recommend is the best way to care for a mother during pregnancy (and during the weeks after the birth)?
 - ii. [PROMPT] Best way to care for the baby in the weeks after birth?
 - b. Is there anything else that has had an effect on your beliefs about pregnancy and motherhood?
 - i. [PROMPT]: For example, does your culture or religion suggest certain ways to care for yourself or your baby?
 - ii. [PROMPT]: Have you followed suggestions from online or online social networks? Any TV shows?
 - iii. Have you learned any helpful suggestions from books or articles?
 - c. **Of all of the influences you named (family, online sources, books), which one or two were the greatest influence?
3. What challenges did you face and what helped you during pregnancy? What are the biggest challenges you've had with taking care of yourself during this period?
- a. [PROMPT:] What did you find stressful or overwhelming during pregnancy? How do you cope with these fears and stressful moments?
 - i. If report high stress/anxiety: During your recent pregnancy, how often were you bothered by feeling nervous, anxious, or on edge? [Never Sometimes Usually Always]
 - ii. If report high stress/anxiety: During your recent pregnancy, how often were you bothered by not being able to stop or control worrying? [Never Sometimes Usually Always]
 - b. [PROMPT] Some women feel depressed or sad during pregnancy. Have you ever felt that way and can you mention some of the things you have been doing to take care of it?
 - i. If report depression or sadness: During your recent pregnancy, how often were you bothered by feeling down, depressed, or hopeless? [Never Sometimes Usually Always]
 - ii. If report depression or sadness, during your recent pregnancy, how often were you bothered by having little interest or pleasure in doing things? [Never Sometimes Usually Always]
 - c. [PROMPT] What are some examples of what you have been doing to care for your mental and emotional wellbeing? How about your physical wellbeing?
 - d. [PROMPT] [If woman has diabetes or HTN]: During this time of pregnancy, how has it been to take care of your diabetes or hypertension?
 - e. [PROMPT]: Do you have childcare? If so, who provides it and how often?
 - f. [PROMPT]: If you are working outside the home, what is it like to balance pregnancy and working? What has your employer been like?
 - g. [PROMPT]: Any issues with health insurance coverage?
 - h. How has the COVID-19 affected your pregnancy experience?
- >>Now I will ask some more sensitive questions, feel free to not answer if you like.
- i. [PROMPT]: During your pregnancy, were you worried about money, resources, or whether your food would run out before you got money to buy more?
 - j. [PROMPT]: Do you feel safe/calm/secure in your home (apartment/house)? In your building? In your neighborhood?
 - k. [PROMPT]: Did you find you wanted or needed cigarettes, alcohol, or other substances during times of stress?
 - l. **Of everything you have mentioned so far, what were the top two challenges for taking care of yourself?

4. We want to create a high quality maternal coaching program. This question about your health care will help us improve services. Your honest feedback would be appreciated. What has been your experience with your doctor and the prenatal clinic since becoming pregnant?
 - a. [PROMPT]: What are some of the good aspects of working with them?
 - b. [PROMPT]: What are some things you'd change about your doctor/nurse midwife?
 - c. [PROMPT]: What about other medical staff such as nurses? Administrative staff (front desk, billing)?
 - d. [PROMPT]: Can you walk through a typical appointment with them? ("walk us through what you do during a typical appointment")
 - e. [PROMPT]: [If woman has diabetes or HTN]
 - i. Has your doctor talked with you about HTN/DM? If so, what did your doctor say or what advice did they give about your GDM/DM or HTN?
 - ii. Who else did you meet with to learn about your GDM/DM or HTN? (dietician, social worker, CDE, doula, CHW)
 1. How many times did you meet with them?
 - iii. What did you learn? (medications, nutrition, other self-care skills)
 - iv. Did they give you guidance on monitoring your levels?
 1. How did you feel when you learned of the GDM or HTN?
 2. Can you tell me what is recommended for a doctor check-up for the mother after that baby is born?
 - f. [PROMPT]: What are your conversations like with your doctor? What do they feel like?
 - g. [PROMPT]: How do you feel about raising concerns or worries with your doctor?
 - h. [PROMPT]: How was your experience with getting information from the doctor?
 - i. [PROMPT]: Do you feel you have been treated poorly or differently, not listened to, or disrespected in any way by your doctor or medical staff? If so, why do you think that is?
 - j. [PROMPT]: Do you feel the staff and doctor understand and value your culture (and language if applicable)?
 - k. [PROMPT]: If you could choose, what race or ethnicity would you prefer for your provider? What gender would you prefer?
 - l. [PROMPT]: How likely is it that you would recommend Mount Sinai Obstetrics to a pregnant friend or family member, with 0 not at all likely to 10 very likely?

5. Part 1: Given your experience during pregnancy and reflecting back on you needs, what are the most important parts of a good maternal health coaching program?

Part 2: The reason we ask about your pregnancy needs is because we are building a maternal health coaching program. What do you imagine a health coach could do for you; how could a health coach help?

Which of these options/elements would you be most interested in seeing? (I'm going to read these options to you in groups, you should select your top 2 from each group).

Prenatal:

1. Group childbirth education
2. Certified labor and delivery support person (doula)
3. Learning on nutrition
4. Coaching on managing stress
5. Managing chronic conditions (diabetes and high blood pressure)
6. Child care voucher
7. Transportation voucher to get to clinic appointments
8. Help accessing WIC, food stamps, food pantry
9. Going with you to a prenatal OB visit
10. Learning to advocate for yourself with your doctor, nurses, or other staff
11. Information and education for partner/baby's father (partner support)
12. Online/cell phone based interactive information and education
13. Anything we didn't mention that you would want to suggest?

Part 3:

1. Many women who have given birth have difficulties attending OB appointments. What do you think would be most helpful to make sure someone can attend their postpartum visits?

2. [If patient has diabetes or hypertension]: What do you think would be most helpful for a woman with diabetes or hypertension in the prenatal or postpartum period?
6. Is there anything else you would like to tell me or recommend in how we design our coaching program?

Summary: Now that we have completed the interview questions, I would like to give a brief summary of the main points that I heard from you during this interview.

I would like to ask some brief multiple choice questions now before we finish our call.

Part B: Background Information

- 1) What is your age (range)?
 - a. 15-20
 - b. 21-25
 - c. 26-30
 - d. 31-35
 - e. 36-40
 - f. 40-45
- 2) What is your gender?
 - a. Male
 - b. Female
 - c. Non-Binary
 - d. Other
 - e. Don't know
 - f. Prefer not to answer
- 3) Do you consider yourself to be Hispanic, Latina/o, or of Spanish origin?
 - a. Yes
 - b. No
 - c. Don't know
 - d. Prefer not to answer
- 4) Please look at the categories below. What race or races do you consider yourself to be? Please select all that apply.
 - a. American Indian or Alaska Native
 - b. Asian
 - c. Black or African American
 - d. Native Hawaiian or Pacific Islander
 - e. North African or Middle Eastern
 - f. White
 - g. Other
 - h. Don't know
 - i. Prefer not to answer
- 5) How many other children do you have (not including your current pregnancy)?
 - a. 0
 - b. 1
 - c. 2
 - d. 3
 - e. 4
 - f. 5
- 6) What is your marital status?
 - a. Married

- b. Separated or divorced
 - c. Widowed
 - d. Never married
 - e. Living with a partner
 - f. Don't know
 - g. Prefer not to answer
- 7) Are you planning to co-parent the baby? If so, with who are you going to co-parent?
- a. Baby's father
 - b. Partner/boyfriend/husband
 - c. Other
 - d. Not co-parenting but family member(s) helping
 - e. Not co-parenting
- 8) What is the highest grade or level of school you completed or the highest degree you have received?
- a. Never attended school or only attended kindergarten
 - b. Grades 1 through 8 (Elementary)
 - c. Grades 9 through 11 (Some high school)
 - d. Grade 12 or GED (High school graduate)
 - e. College 1 year to 3 years (Some college or technical school)
 - f. College 4 years or more (College graduate)
 - g. Graduate degree (Master's, PhD, etc.)
 - h. Don't know
 - i. Prefer not to answer
- 9) Which of the following best describes your current work status?
- a. Working full time (≥ 35 hours per week)
 - b. Working part time (< 35 hours per week)
 - c. Homemaker
 - d. Unemployed
 - e. Disabled
 - f. Retired
 - g. Other
 - h. Don't know
 - i. Prefer not to answer

Part C: Additional Questions

- 10) How would you describe the time during your most recent pregnancy? Choose ONE answer:
- a. One of the happiest times of my life
 - b. A happy time with few problems
 - c. A moderately hard time
 - d. A very hard time
 - e. One of the worst times of my life
- 11) Before you got pregnant, would you say that, in general, your health was:
- a. Excellent
 - b. Very Good
 - c. Good
 - d. Fair
 - e. Poor

Closing: Thank you so much for your time and for sharing your experience and insights. We will send your gift card to the address on file at Mount Sinai. Would you be willing to do a second phone interview sometime after the baby is born?

C: MATERNAL HEALTH INTERVIEW GUIDE FOR POSTPARTUM WOMEN

INTERVIEW PROTOCOL: POSTPARTUM PERSPECTIVES

INFORMED CONSENT

Hello, welcome! My name is Jamillah Hoy-Rosas and I am a researcher and health care administrator. I am working with Mount Sinai Obstetrics on the project I am about to describe to you. Thank you for making time to talk to us today! Before we start asking you interview questions, I'd like to give you a quick refresher about our study, just to make sure you are fully informed and comfortable with doing this interview.

Mount Sinai Obstetrics has decided to develop a maternal health coaching program for prenatal and postpartum women. We are interviewing 30 prenatal or postpartum patients who get their health care from Mount Sinai Obstetrics. Your responses and insights from this interview will help us design the best possible maternal health coaching program. A maternal health coach is a person who can provide you with support and health information during pregnancy and after the baby is born; they could call you or visit you at home or come with you to a doctor's visit. We are planning to offer this coaching program to all women, with a focus on those with gestational diabetes or high blood pressure. Have you ever experienced diabetes or high blood pressure? Whether you have experienced these health conditions or not, your feedback is very important to us!

Anything you say will be combined with what other patients say in our report, and we won't quote any patient by name -- so no one at Mount Sinai or elsewhere will know which patient said what. We are keeping your identity a secret because we want you to feel comfortable sharing your honest opinions about your prenatal and postpartum experiences at Mount Sinai and in general. We think this conversation will take about 45 to 60 minutes.

You can skip any question you don't want to answer – just say “I'll pass on that one.” You can also end the conversation at any time if you don't like how it's going, and we will still send you the \$50 gift card we promised you. Your decision to participate or decline participation in this project will not in any way affect your care at Mount Sinai. This study may not directly benefit you, but it could benefit other women and families in the prenatal or postpartum period who enroll in the coaching program.

We'd like to record this conversation, to make sure our notes are complete. The audio recording and our notes will be saved to a computer that only researchers on this project can access and will be destroyed when our study is done.

Now that we've told you about our study, are you OK with us turning on our audio recorder and asking you our interview questions? Do you have any questions for me about our study?

How is your baby doing/pregnancy going? Do you have any other children?

When answering the questions below, we would like you to think about your current pregnancy and/or postpartum experience. Some questions will be multiple choice questions and some will be whatever you want to tell us.

Part A: Interview Questions

1. What support or resources have been helpful to you during pregnancy?
 - a. Family
 - b. Partner/baby's father
 - c. Friends
 - d. What resources or services did you use?
 - i. WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children)
 - ii. Food stamps or money to buy food
 - iii. Childbirth education classes
 - iv. Breastfeeding counseling (La Leche League)
 - v. Child care

- vi. Doula services
 - vii. Counseling for family and personal problems
 - viii. Help to quit smoking
 - ix. Other Please tell us:
2. Many people have things they know or believe about pregnancy and motherhood that they learn from their families and other sources.
- a. Do family or friends have ideas about pregnancy and motherhood that they passed on to you?
 - i. [PROMPT]: What do they recommend is the best way to care for a mother during the weeks after the birth?
 - ii. [PROMPT] Best way to care for the baby in the weeks after birth?
 - b. Is there anything else that has had an effect on your beliefs about pregnancy and motherhood?
 - i. [PROMPT]: For example, does your culture or religion suggest certain ways to care for yourself or your baby?
 - ii. [PROMPT]: Have you followed suggestions from online or online social networks? Any TV shows?
 - iii. Have you learned any helpful suggestions from books or articles?
 - c. **Of all of the influences you named (family, online sources, books), which one or two were the greatest influence?
3. What challenges did you face and what helped you after giving birth (postpartum)? What are the biggest challenges you've had with taking care of yourself during this period?
- a. [PROMPT:] What did you find stressful or overwhelming during pregnancy and new motherhood? How do you cope with these fears and stressful moments?
 - i. If report high stress/anxiety: In the past 2 weeks, how often were you bothered by feeling nervous, anxious, or on edge? [Never Sometimes Usually Always]
 - ii. If report high stress/anxiety: In the past 2 weeks, how often were you bothered by not being able to stop or control worrying? [Never Sometimes Usually Always]
 - b. [PROMPT] Some women feel depressed or sad during pregnancy or after having their child. Have you ever felt that way and can you mention some of the things you have been doing to take care of it?
 - i. If report depression or sadness: In the past 2 weeks, how often were you bothered by feeling down, depressed, or hopeless? [Never Sometimes Usually Always]
 - ii. If report depression or sadness: In the past 2 weeks, how often were you bothered by having little interest or pleasure in doing things? [Never Sometimes Usually Always]
 - c. [PROMPT] What are some examples of what you have been doing to care for your mental and emotional wellbeing? How about your physical wellbeing?
 - d. [PROMPT] [If woman has diabetes or HTN]: During this time of a new baby, how has it been to take care of your diabetes or hypertension?
 - e. [PROMPT]: Do you have childcare? If so, who provides it and how often?
 - f. PROMPT]: If you are working outside the home, what is it like to balance new motherhood/baby and working? What has your employer been like?
 - g. PROMPT]: Any issues with health insurance coverage since giving birth?

- h. HOW has the COVID-19 affected your pregnancy or postpartum experiences?

>>Now I will ask some more sensitive questions, feel free to not answer if you like.

- i. [PROMPT]: During the time since the baby arrived, were you worried about money, resources, or whether your food would run out before you got money to buy more?
 - j. [PROMPT]: Do you feel safe/calm/secure in your home (apartment/house)? In your building? In your neighborhood?
 - k. [PROMPT]: Did you find you wanted or needed cigarettes, alcohol, or other substances during times of stress?
 - l. *Of everything you have mentioned so far, what were the top two challenges for taking care of yourself?
4. We want to create a high quality maternal coaching program. This question about your health care will help us improve services. Your honest feedback would be appreciated. What has been your experience with your doctor and the prenatal clinic since becoming pregnant?
- a. [PROMPT]: What are some of the good aspects of working with them?
 - b. [PROMPT]: What are some things you'd change about your doctor/nurse midwife?
 - c. [PROMPT]: What about other medical staff such as nurses? Administrative staff (front desk, billing)?
 - d. PROMPT]: Can you walk through a typical appointment with them? ("walk us through what you do during a typical appointment")
 - e. [PROMPT]: [If woman has diabetes or HTN]
 - i. Has your doctor talked with you about HTN/DM? If so, what did your doctor say or what advice did they give about your GDM/DM or HTN?
 - ii. Who else did you meet with to learn about your GDM/DM or HTN? (dietician, social worker, CDE, doula, CHW)
 - 1. How many times did you meet with them?
 - 2. What did you learn? (medications, nutrition, other self-care skills)
 - a. Did they give you guidance on monitoring your levels?
 - iii. How did you feel when you learned of the GDM or HTN?
 - iv. Can you tell me what is recommended for a doctor check-up after that baby is born?
 - f. [PROMPT]: What are your conversations like with your doctor? What do they feel like?
 - g. PROMPT]: How do you feel about raising concerns or worries with your doctor?
 - h. [PROMPT]: How was your experience with getting information from the doctor?
 - i. [PROMPT]: Do you feel you have been treated poorly or differently, not listened to, or disrespected in any way by your doctor or medical staff? If so, why do you think that is?
 - j. [PROMPT]: Do you feel the staff and doctor understand and value your culture (and language if applicable)?
 - k. [PROMPT]: Does the race or ethnicity of your provider matter to you? Does the gender of the provider matter to you?
 - l. PROMPT]: How likely is it that you would recommend Mount Sinai Obstetrics to a pregnant friend or family member, with 0 not at all likely to 10 very likely?
 - m. [PROMPT]: What was the delivery/birth experience for you?
 - i. Who was there with you? (doula, family member, friend)
 - ii. Did you have a C-section or vaginal birth?

- iii. Did nurses or lactation consultants or others give breastfeeding advice in the hospital after you had your baby?
- iv. Did you feel pressure from any provider to induce, to have a c-section, or to breastfeed?
- n. [PROMPT]: Did you attend your postpartum appointment(s) (in first 8 weeks after the birth)? What was it like?
 - i. If no, what is the main reason why you didn't have the postpartum visit
 - 1. I didn't need more care
 - 2. I didn't have insurance for the visit
 - 3. I didn't have a way to get to the visit
 - 4. didn't feel well/was tired and didn't want to go out
 - 5. I had other things to do and didn't have time
 - 6. Other _____

5. Part 1: Given your experience during pregnancy and/or postpartum and reflecting back on your needs, what are the most important parts of a good maternal health coaching program. What are some of the things we can do to improve the care you are getting and how could a health coach help?

Part 2: The reason we ask about your prenatal and postpartum needs is because we are building a maternal health coaching program. What could a health coach do for you?

Which of these options/elements would you be most interested in seeing? **(I'm going to read these options to you in groups, you should select your top 2 from each group).**

Prenatal:

- 1. Group childbirth education
- 2. Certified labor and delivery support person (doula)
- 3. Learning on nutrition
- 4. Coaching on managing stress
- 5. Managing chronic conditions (diabetes and high blood pressure)
- 6. Child care voucher
- 7. Transportation voucher to get to clinic appointments
- 8. Help accessing WIC, food stamps, food pantry
- 9. Going with you to a prenatal OB visit
- 10. Learning to advocate for yourself with your doctor, nurses, or other staff
- 11. Information and education for partner/baby's father (partner support)
- 12. Online/cell phone based interactive information and education

Postpartum:

- 1. Going with you to postpartum OB visit
- 2. Breastfeeding support
- 3. Postpartum check-in with coach (before leave hospital with baby)
- 4. Child care voucher
- 5. Transportation voucher to get to clinic appointments
- 6. Anything we didn't mention that you would want to suggest?

Part 3:

1. Many women who have given birth have difficulties attending OB appointments. What do you think would be most helpful to make sure someone can attend their postpartum visits?
 2. [If patient has diabetes or hypertension]: What do you think would be most helpful for a woman with diabetes or hypertension in the prenatal or postpartum period?
6. Is there anything else you would like to tell me or recommend in how we design our coaching program?

Summary: Now that we have completed the interview, I would like to give a brief summary of the main points that I heard from you during this interview.

Closing: Thank you so much for your time and for sharing your experience and insights. We will send your gift card to the address on file at Mount Sinai.

****Mandatory sub-questions**

Part B-1: Social Support Question

1. During your most recent pregnancy, would you have had the kinds of help listed below if you needed them? For each one, say No if you would have not had it or Yes if you would have had it. [No Yes]
 - a. Someone to loan me \$50
 - b. Someone to help me if I were sick and needed to be in bed
 - c. Someone to take me to the clinic or doctor's office if I needed a ride
 - d. Someone to take care of my baby
 - e. Someone to help me if I were tired and feeling frustrated with my new baby
 - f. Someone to talk with about my problems

Part B-2: Background Information

- 1) What is your age (range)?
 - a. 15-20
 - b. 21-25
 - c. 26-30
 - d. 31-35
 - e. 36-40
 - f. 40-45
- 2) What is your gender?
 - a. Male
 - b. Female
 - c. Non-Binary
 - d. Other
 - e. Don't know
 - f. Prefer not to answer
- 3) Do you consider yourself to be Hispanic, Latina/o, or of Spanish origin?

- a. Yes
 - b. No
 - c. Don't know
 - d. Prefer not to answer
- 4) Please look at the categories below. What race or races do you consider yourself to be? Please select all that apply.
- a. American Indian or Alaska Native
 - b. Asian
 - c. Black or African American
 - d. Native Hawaiian or Pacific Islander
 - e. North African or Middle Eastern
 - f. White
 - g. Other
 - h. Don't know
 - i. Prefer not to answer
- 5) How many other children do you have (not including your current pregnancy)?
- a. 0
 - b. 1
 - c. 2
 - d. 3
 - e. 4
 - f. 5
- 6) What is your marital status?
- a. Married
 - b. Separated or divorced
 - c. Widowed
 - d. Never married
 - e. Living with a partner
 - f. Don't know
 - g. Prefer not to answer
- 7) Are you planning to co-parent the baby? If so, with who are you going to co-parent?
- a. Baby's father
 - b. Partner/boyfriend/husband
 - c. Other
 - d. Not co-parenting but family member(s) helping
 - e. Not co-parenting
- 8) What is the highest grade or level of school you completed or the highest degree you have received?
- a. Never attended school or only attended kindergarten
 - b. Grades 1 through 8 (Elementary)
 - c. Grades 9 through 11 (Some high school)
 - d. Grade 12 or GED (High school graduate)
 - e. College 1 year to 3 years (Some college or technical school)
 - f. College 4 years or more (College graduate)
 - g. Graduate degree (Master's, PhD, etc.)
 - h. Don't know
 - i. Prefer not to answer
- 9) Which of the following best describes your current work status?
- a. Working full time (≥ 35 hours per week)
 - b. Working part time (< 35 hours per week)
 - c. Homemaker

- d. Unemployed
- e. Disabled
- f. Retired
- g. Other
- h. Don't know
- i. Prefer not to answer

Part C: Additional Questions

10) How would you describe the time during your most recent pregnancy? Choose ONE answer:

One of the happiest times of my life

A happy time with few problems

A moderately hard time

A very hard time

One of the worst times of my life

11) Before you got pregnant, would you say that, in general, your health was:

Excellent

Very Good

Good

Fair

Poor