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Meredith Pinto Date

Bridging the gaps in care: Perspectives of obstetric service delivery providers on alternative models of care outside Metropolitan Atlanta, Georgia

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By

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Texas A&M University
2007

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An abstract of
a thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
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Abstract

Bridging the gaps in care: Perspectives of obstetric service delivery providers on alterative models of care outside Metropolitan Atlanta, Georgia

By Meredith Pinto

Background: A workforce study conducted in 2011 by the Georgia Infant and Maternal Health Research Group (GIMHRG) found that 52% of Primary Care Service Areas outside metropolitan Atlanta Georgia had an overburdening or complete lack of obstetric care. In response, GMIHRG collaborated with the Georgia Obstetrical and Gynecological Society (GOGS), the Georgia Department of Public Health, and the March of Dimes Foundation to identify the challenges that service providers face while delivering care and to describe essential components of new models of care that might be implemented. Proposed models of care include rotating physicians into shortage areas; incorporating certified nurse midwives, obstetricians, and maternal fetal medicine specialists into a tiered model; using a hospitalist model of care; and adapting mobile clinics.

Methods: We conducted 46 qualitative in-depth interviews with obstetricians, maternal-fetal medicine specialists, certified nurse midwives, and Georgia maternal and child health leaders. Stakeholders were recruited using a snowball method. Interviews were digitally recorded, transcribed verbatim and analyzed using MAXQDA software. We used a grounded theory approach to identify challenges providers face and to assess new obstetric service models that would to address these barriers in Georgia.

Results: Service delivery providers face significant financial barriers, including low Medicaid reimbursement, high cost of medical malpractice insurance, and high percentage of self-pay patients. Furthermore, the gaps within in the Maternal Care System include patient's late initiation into prenatal care and a lack of collaboration between stakeholder populations. Essential components of effective models of care include patient continuity of care, efficient use of resources, and risk appropriate care.

Discussion: Our analysis revealed that an ideal service delivery system would include closer collaboration among different stakeholder populations, decentralization of services, increased continuity of care, decreased time to care, and increase reimbursement rates that align with incentives for risk appropriate care. These findings should serve as the foundation for policy makers and program managers as they endeavor to resolve the obstetric provider shortage in Georgia. Incorporating these findings into Georgia's maternal and child health programming will improve maternal and infant health outcomes.

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I would like to express my appreciation to Adrienne Zurtuche and Bridget Spelke, the leaders of GMIHRG, Pat Cota of the GOGS, and Dr. Andrew Dott, for their valuable guidance during the planning and development of this project. None of this would have been possible without their passion and enthusiasm to help find solutions to the obstetric shortage in Georgia.

I would also like to give a heartfelt thank you to the research assistants who conducted the interviews for this project including Ayanna Williams, Jessica Harnisch, Erika Meyer, and Lauren Espinosa. The time you dedicated to helping with this project was invaluable and your encouragement throughout data analysis was incredibly motivating. I am also indebted to the men and women who shared their experiences and perspectives for this project.

I would like to express my deep gratitude to Dr. Roger Rochat and Dr. Monique Hennink for their patience, guidance, and encouragement throughout this past year. It was an incredibly humbling experience to work with such passionate people who care not only about this project, but also about my development as a public health practitioner.

Finally, words cannot express my appreciation to my family. You all have been an unwavering support throughout my life and I would not be where I am without all of your advice and guidance. Thank you.

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Chapter 1: Introduction

Project Rational

The Centers for Disease Control and Prevention (CDC) reports that in 2012 alone, nearly four million children were born in the United States and nearly 85% of women will experience at least one birth by the age of 45 [1]. This means that the Maternal Care System in the United States has the opportunity to reach millions of women throughout their lifetime and can be an important area to address the health and wellbeing of both women and babies. However, many factors affect a woman's ability to receive adequate health services including socio-demographic characteristics, such as income, race and ethnicity, and insurance; and physical characteristics such as her physical access to health care services before and during pregnancy [2]. Therefore, the United States has endeavored to address these disparities by creating 10-year maternal and infant health goals in Health People 2020, to improve the health and wellbeing of women and infants through an increase in preconception and inter-conception care [2].

Additionally, in 2009, an organization called the Childbirth Connection brought together a collaboration of nearly 100 stakeholders in maternal and child health to discuss the current state of the Maternal Care System in the United States [3]. From this symposium, they noted "the dominant model for provider care utilization in the US maternity care system features silo-based micro-systems with individuals delivering care in parallel. Such systems are vulnerable to duplication of effort, gaps in care, competitive environments, and waste of finite resources" [3]. From this, they proceeded to create eleven key recommendations for transforming the current system into a high-value, high-quality Maternal Care System. Many of these recommendations

aim to remove gaps and challenge that providers face within the system in order to generate increased access for women and children.

Georgia's Maternal Care System is very similar to the system described in the report from Childbirth Connection, with individuals delivering care in parallel and duplicating efforts. Consequently, the maternal and infant health outcomes in Georgia are dismal, with Georgia ranking 49th in the country for maternal mortality [4] and 25th for infant mortality [5]. Therefore, in 2011, an organization called the Georgia Maternal and Infant Health Research Group (GMIHRG) collaborated with the Georgia Obstetrical and Gynecological Society (GOGS), and the Department of Public Heath, and financially supported by the March of Dimes Foundation (MOD), to do a workforce assessment of obstetric services throughout Georgia. From this assessment they discovered that nearly 52% of counties outside of metropolitan Atlanta had an over burdening or complete lack of obstetric providers. Furthermore, GMIHRG estimates that by 2020 this deficit will increase to nearly 75%, potentially exasperating the already poor maternal and infant health outcomes [6].

Purpose statement and research question

In order to address this finding, in 2013, GMIHRG launch a comprehensive research study in an effort to clarify the impact of Georgia's obstetric shortage, explain the reasons behind the shortage and identify solutions for Georgia's Maternal Care System. This study is part of the third objective of GMIHRG's research and aims to understand the perspective of service delivery provider's on the current gaps in the Maternal Care System and opportunities for improvement to service-shortage areas outside the metropolitan Atlanta, Georgia.

Specific Research Question

- What are the challenges that obstetric service delivery providers face while delivering care within Georgia?
- What are the perspectives of service delivery providers on proposed alternative models of care?
- What positive aspects of care are consistent and necessary for a comprehensive alternative model of care?

Significance statement

Georgia has a clear need to improve maternal and child health outcomes at the end of pregnancy. Organizations such as GMIHRG, GOGS, and MOD are working diligently to find and create innovative solutions to this problem. Therefore, understanding the challenges that providers face within the system and identifying key characteristics of effective models of care can give these organizations, policy makers, and programmatic officials, the tools that they need to create innovative solutions for an effective Maternal Care System in Georgia.

Chapter 2: Comprehensive Review of the Literature

The Georgia Obstetric System

Nearly 130,000 babies are born in Georgia each year [7] and for obstetric providers providing quality pre-natal care to pregnant women and safely delivering these babies are of the upmost importance. However, in areas outside of metropolitan Atlanta providers face significant challenges in offering quality care to women. While ample research has been conducted on the barriers that pregnant women face when seeking obstetric care, little research exists that documents the challenges and opportunities for improvement on the provider's side. More research is needed on the perspectives of obstetric providers in order to create sustainable solutions for the Maternal Care System in Georgia outside the metropolitan Atlanta area.

Benefits of Prenatal Care

Prenatal care is critically important for finding and managing complications during pregnancy that could lead material mortality and morbidity and preterm births [8]. Prenatal care in the first trimester is especially important since much of the child's development occurs during this time and, if complications are caught early, providers can provide extra support and screenings to women throughout their pregnancies [9]. Research shows that women with inadequate prenatal care are 1.08 times more likely to have a baby with a low birth weight than mothers with adequate prenatal care [9]. Based on these statistics, we infer that prenatal care has an important place in preventative health care for pregnant women.

In 2007, nearly 15.8% of women in Georgia either had a late initiation of prenatal care or receive no prenatal care during their pregnancy[10]. In contrast to white women, minorities seem to

have less adequate care since 9.6% of white women had late or no prenatal care, and 20.9% of the black population and 29% of the Hispanic population had late or no prenatal care [10].

In 2012, the maternal mortality rate in Georgia was 20.9 deaths per 100,000 live births, or 8.4 more deaths per 100,000 live births than the national average, ranking the state 49th in the nation [4]. In the same year, March of Dimes reported that Georgia had a 12.7% prematurity birth rate and presented the state with a C-rating, meaning that it still had a long way to go to reach the national premature birth goals. These data provide a strong case for the need to expand and strengthen access to and utilization of prenatal care in Georgia.

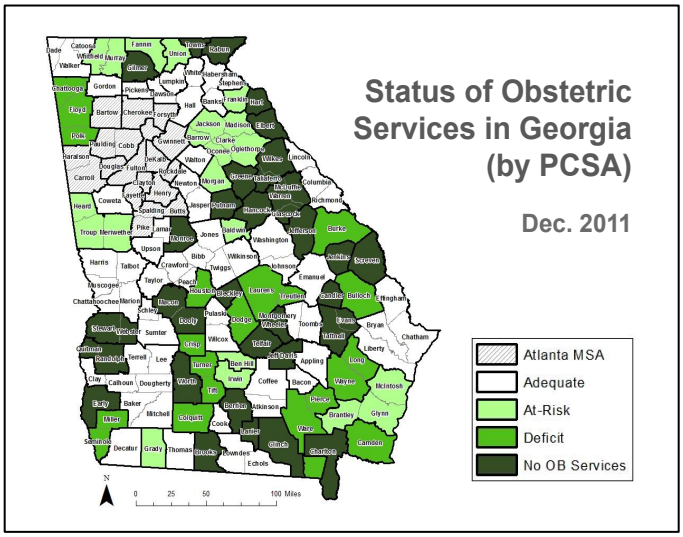
Current State of Obstetrics in Georgia

In Georgia, pregnant women are eligible for Medicaid up to 200 percent of the federal poverty level [11] and, in 2010, nearly 62% of all pregnant women had Medicaid insurance at some point throughout their pregnancy [12]. A study conducted in 2009 by the Agency for Health Care Research and Quality found that the national average expenditure for an uncomplicated pregnancy was $9,705 for all payments to providers, hospitals, pharmacies, etc. [13]. Little research has been conducted on the national amount that only clinical providers receive as opposed to facilities or pharmacies. However, this report did highlight that expenses to private insurance plans were significantly higher than expenses paid by Medicaid. For example, the expenses for private insurance were "about $1,100 higher for the prenatal care ($3,353 versus $2,230) and over $3,200 higher for the delivery ($9,549 versus $6,333)"[13]. However, in Georgia, the current reimbursement rates of Medicaid to a provider offering prenatal care and delivery are $1,205 from vaginal delivery with an additional $100 when patients enter into prenatal care in the first trimester and $1,605 for a cesarean delivery [14]. These reimbursement

rates have not changed since the year 2000, consequently not reflecting the increase in the inflation rate since that time or addressing the rising costs of medical services. This could possibly be an influencing factor in whether or not providers chose to administer care to Medicaid patients over privately insured patients.

Georgia also suffers from a misdistribution of clinical obstetric providers, which creates gaps in the coverage of care in areas outside of metropolitan Atlanta. In 2009, the American College of Obstetricians and Gynecologists (ACOG) reported that Georgia has 4.55 OBGYN's per 10,000 women of reproductive age, slightly above the national average[15]. Unfortunately for many patients outside metropolitan Atlanta, many of these providers are located in metropolitan Atlanta. Consequently, many areas in Georgia face a shortage of obstetric providers. In 2011, GMIHRG's workforce assessment found a significant deficit of obstetric services in Georgia outside the Atlanta Metropolitan Statistical Area (illustrated by Figure 1). Overall, 52% of Primary Care Service Areas (PSA's) had an overburdening or complete lack of obstetric care. This finding was confirmed by ACOG, which reported that 80 of 159 counties in Georgia lacked all OBGYN services [16]. Furthermore, ACOG has projected that the United States will have a 25% OBGYN shortage in 2030 and up to 30% in 2050, leaving little hope for improvement in already distressed areas [17].

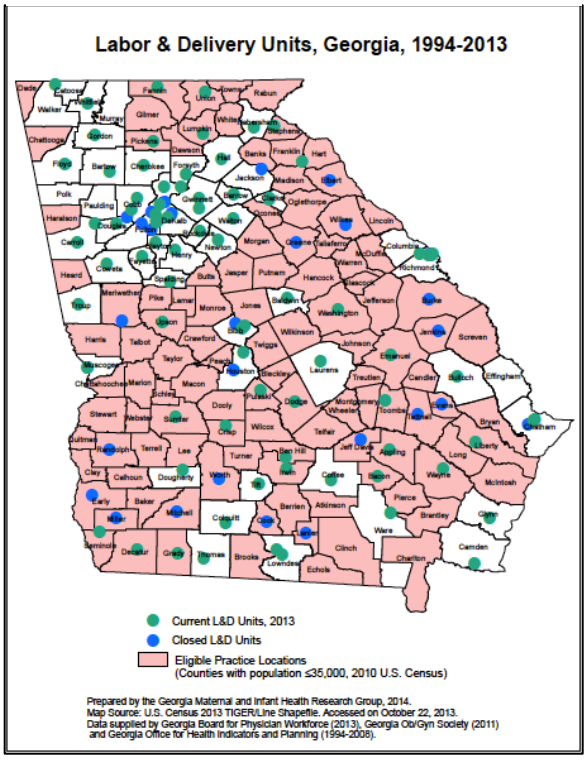
Figure 1



Georgia Maternal and Infant Health Research Group, 2011

This misdistribution of clinical obstetric providers has a significant impact on pregnancy outcomes for both women and babies, since outside metropolitan areas women often travel long distances to see a provider. A study conducted in 2013 by Anderson found that mothers who live over 45 minutes from their obstetric provider are 1.53 times more likely to have a premature delivery than those women who have less than 45 minute commute to their delivering hospital [18]. This is exacerbated by increasingly frequent hospital closings throughout rural Georgia. Figure 2 illustrates the number of birth facilities that have closed their Labor and Delivery Units since 1994. Nearly 20 of these unit closures are outside metropolitan Atlanta and since no new labor and delivery united have open during this time, many patients now have to travel further due to the increase in the geographic distance to hospitals.

Figure 2



One major contributor to the growing shortage of obstetric providers is the lack of family practitioners that are performing obstetric services in Georgia. The workforce assessment by GMIHRG revealed that 89% of the PSA's outside of metropolitan Atlanta had no delivering family practitioners (FP's) [6], and that only 13 FP's in the entire state work in obstetrics. A cohort study conducted in rural Tennessee in 2010 investigated why FP's were discontinuing obstetric care. They found that after 9 years post-obstetric fellowship, only 39% continued to provide obstetric care [19]. Cited reasons for cessation of services, not including personal

factors, included “closure of delivering hospitals, lack of group call support, hospital privileges refused, and insurance costs greater than revenue”[19]. While no known research has been conducted in Georgia on FP’s suspension of providing obstetric services, similar factors may contribute to retention rates in Georgia.

The OBGYN shortage in the United States is a growing and complex issue that has several influencing factors. These factors include an aging work force that is reaching the age of retirement, a shift in the demographics of the workforce that leads to an increased desire to work fewer hours, and overall career dissatisfaction [20]. A study conducted by J. Paul Leigh, et al, in 2002, found that OBGYN providers consistently rank highest on the list of dissatisfaction with their medical career, only surpassed by ear, nose, and throat doctors [20]. Another study confirmed this study by finding that only 7.6% of those OBGYN’s under 50 strongly agreed that they were satisfied with their work life balance, 82.8% agreed that fear of litigation influenced their practice, and 83.7% agreed that the cost of their malpractice insurance was too high [21]. Of the OBGYN’s who retired earlier than expected, 59.5% did so because of rising malpractice rates, 44.8% because of insufficient reimbursement rates, and 39.3% because health reasons[21]. Funk, who performed a nationwide survey of obstetricians in 2009, found that out of 1,020 OBGYN’s that responded to their survey, 91% said that professional liability insurance was the most important benefit that could be offered in order to recruit them to work in locations [22]. All of these factors seem to contribute to the overall provider dissatisfaction with obstetrics and gynecology.

Clearly, many of the factors that influence career satisfaction of OBGYN’s stems from finances, including low reimbursement rates for services and high malpractice premiums for insurance. Furthermore, in 2011, AGOG reported that OBGYN’s compensation for their work is lower than

many of their surgical counterparts and that rates of compensation depend on the location of the provider, with providers in rural areas receiving less money for their services than providers working in urban areas [15]. While Medicaid plays an important part in increasing access for women to receive obstetric care, the ACOG found a shortage of providers taking Medicaid patients in Georgia [14]. They attributed this finding to a shortage of providers in rural areas but further hypothesized that low reimbursement rates from Medicaid also contribute to the lack of providers participating in the program [14].

Models of Care

We conducted a comprehensive review of the literature in order to explore possible solutions for the obstetric shortage in Georgia. Four alternative models of care were identified as potentially appropriate for areas outside of metropolitan Atlanta. These solutions include an obstetric timeshare model, a tiered model of care, utilization of hospitalists and of mobile clinics. Participants of our study were provided brief outlines of each of these models before the interviews and asked in-depth questions about their potential use and efficacy in Georgia (See appendix 3).

Obstetrician Rotations – Time Share Model

This model is an adaptation of the "Locum Tenens" model that is currently popular across the United States. Locum Tenens originated in the 1970's with the goal of providing medical services to underserved areas [23] by providing short or long term replacements for doctors who are going on vacation or leave, or who are providers in underserved hospitals. The initial success of the program sparked a trend in which individuals travel to different locations to serve as place holders for hospitals and clinics in the absence of a permanent physician [23]. Locum Tenens

provide a unique service to medically underserved areas, especially rural locations where recruitment of permanent providers is difficult.

This model adapts the idea of using locum tenens to create an obstetric time-share model, where a rotating schedule of visiting OBGYN's will provide care in shortage areas of Georgia. Participating physicians would spend 3-4 days each month providing women in an underserved area with obstetrical and gynecological services. Incentives, such as luxury accommodations and access to quality golf courses for the duration of their stay, would serve to encourage physician participation in the program. All malpractice costs would be covered through the group practice.

For the last several decades, hospitals and policy makers have used financial incentives to recruit physicians to work with rural or underserved populations. Many of these financial incentives are directed by the government and can only be received if the provider meets the qualifications of the incentive. For instance, Georgia provides a $5,000 yearly tax credit to physicians that work in pre-defined underserved areas in Georgia for up to five years[24]. Georgia Board for Physician workforce provides loan repayment and loan forgiveness plans that pay $25,000 per year for up to four years to OBGYN's who work in the qualifying counties[25]. However, for our model we have explored additional incentives, such as luxury accommodations, on top of the normal financial incentive of working as a locum tenens to entice physicians to participant in this time-share. While policy makers are increasingly using financial incentives to attract physicians to rural areas, we found no studies of programs that incentivize providers with non-monetary benefits. Further research should explore innovative incentives such as those proposed in this model.

Tiered model of care

The second model is the tiered model of care, which encourages collaboration between different types of obstetric providers. In this model, all deliveries take place at a centralized hospital, while outpatient services are provided at part-time clinics distributed throughout the area. Certified Nurse Midwives (CNM's), provide care to low risk patients in decentralized clinics and assist in labor and delivery of low-risk patients. Obstetricians care for moderate risk patients, identified by the mid-level providers, in fewer, more centralized locations. They will then delivery complicated births and uncomplicated antepartum care. Finally, Maternal Fetal Medicine (MFMs) specialists see high-risk patients in one central location for pre-natal care and will deliver all high-risk patients. This model provides the option of a single flat-fee for comprehensive outpatient maternity care (including all labs, ultrasounds, monitoring, etc.). They also accept private insurance and Medicaid.

The national guidelines for management of pregnant patients emphasize the need for collaboration between different types of providers. Four types of providers regularly work in the Maternal Care System in Georgia: Certified Nurse Midwives, Obstetricians, Maternal Fetal Medicine Specialists, and Family Practitioners that have received additional training to work in obstetrics. Each one of these types of providers brings a unique voice to the Maternal Care System and has a distinct role to play while providing care. However, since very few Family Practitioners are providing obstetric services in Georgia they were not represented in this model of care. Nevertheless, the role that they might have in the future of obstetric services should not be diminished by this fact.

Since the late 1980's, Certified Nurse Midwives have been able to provide obstetric care in the United States including prenatal visits, labor and deliver, and post-partum visits. A systematic review of the literature conducted in 2011 found that CNM's are a natural counterpart to obstetricians and that CNM's generally "rely less on technology than do physicians and achieve similar or better outcomes"[26]. Furthermore, they use cesarean sections and invasive procedures such as forceps and episiotomy at lower rates then obstetricians.. Women who saw CNM's were also more likely to receive additional prenatal care, focused on health promotion and risk reduction, and had a more individual approach during their deliveries as opposed to those women who saw physicians during their pregnancies. In fact, this study found the evidence so strong in the favor of CNM's at least providing equivalent care to obstetricians, that they recommend using CNM's as one possible solution for overcoming the work force shortage in obstetric care [26].

Although sufficient evidence exists that demonstrates that CNM's provide quality care to patients, national recommendations developed by the ACOG still advise high-risk patients to see higher-level providers. Specific conditions require either additional prenatal care or a consultation with an obstetrician or a maternal fetal medicine specialist. These conditions include but are not limited to [27, 28]:

- Pre-existing medical conditions including diabetes, hypertension, and auto-immune diseases
- General conditions such as a body mass index less than 16.5 or greater than 30 and age less than 16 or greater than 34
- Pregnancy related conditions such as preeclampsia, membrane rupture, and pre-term labor

Therefore, consultation with higher-level providers is essential for the risk management of patients at an early stage in their pregnancy.

Maternal Fetal Medicine Specialists (MFM's) provide a significantly different form of care than CNM's. They specialize in high-risk patients and provide genetic or ultrasound consultations for diagnosis of the fetus in vitro. In 2005, Sullivan found that there was a strong inverse association between the number of MFM's that work in the state and the maternal mortality ratio [29]. In fact, they found that by increasing the number of MFM's in the state by 5 per 10,000 live births lead to a 27% reduction in maternal deaths [29]. It should be noted that this study is a cross-sectional design and has several limitations, however, it was one of the few studies that discuss MFM's potential role in the Maternal Care System. Furthermore, in a MFM workforce evaluation conducted in 2010, only 1355 MFM's practice in the United States, most practicing outside of the southeastern US, and 98.2% reside in metropolitan counties [30]. Therefore, if Sullivan's study can be validated and an increase in MFM's is associated with improved maternal health, then increasing the number of MFM's working in Georgia outside of metropolitan Atlanta may improve maternal health.

Hospitalists

The third alternative model of care is the obstetric hospitalist model. Obstetrician hospitalists work exclusively with hospitalized obstetrical patients and are full-time hospital employees that they enjoy a predictable shift-based work schedule. In this model, women see a community obstetrician for prenatal care, and their labor and delivery is attended by an Obstetric Hospitalist, who fetal heart tracings, address dysfunctional labor and preform operative deliveries. As hospital based physicians, they maintain communication with patients' regular physician and

provide the option of delivering for the physician. The women will then return to their community-based obstetrician for all postpartum care.

This model of care has been rapidly growing since the mid-2000 with 164 obstetric hospitalists currently practicing in the US. This model has the potential to provide a safer birthing experience for women and also a better work-life balance for providers. In their 2012 article, Olsen, et al., explain the numerous factors that brought about this model including the fact that many poor patient outcomes happen because an obstetrician is not immediately on the scene when the patient comes to deliver at the hospital [31]. Furthermore, younger providers are becoming more interested in few work hours a work sharing, resulting in rotations and shift work in hospitals [31]. In 2009, a study conducted by Funk and Anderson found that Obstetric Hospitalists were younger than other specialties within the obstetric field and that overall they had a higher rate of career satisfaction with 76% stating stratified or above and only 8% stating dissatisfied [22].

However, the efficacy of the hospitalist model is unknown in smaller rural hospitals. Funk found that a large majority of these providers are working in hospitals with more than 1000 births per year, and only 22% working in hospitals that deliver fewer than 1000 births per year [22].

Mobile Clinics

The next model of care is the use of Mobile clinics, where clinical providers use vans to travel around Georgia and provide prenatal care. Mobile clinics are popular modes of providing care to rural and vulnerable populations throughout the world; however, very little literature has been published on their overall impact on health outcomes in the United States. In fact, most organizations in the United States that currently utilize medical mobile clinics focus on uninsured or underserved areas that have possible immigrant or homeless populations. Students

from Harvard Medical School designed an interactive map that shows all mobile health clinics that are currently providing care in the United States. Nine mobile health clinics currently operate in Georgia, mostly in metropolitan areas[32]. While none of these clinics provide obstetric care, a few provide women's health services including mammograms and gynecology services[32].

A report created for the East and Central County Health Access Action Team in Central California describes the advantages of using mobile clinics for service provision. First, since the clinics are mobile they are able to see patients in their home communities, which have the potential to reduce many of the barriers that prevent patients from seeking care including hours of operation for clinics and the lack of transportation [33]. Furthermore, because mobile clinics generally seek out certain populations, including uninsured and underserved populations, the cost for consultations are generally free or at a reduced cost [33]. They also highlighted that because the clinics are "less institutionalized" members of the community are able to receive care with more anonymity than other clinics and could help build rapport faster with patients[33].

In 2010, Erin O'Connell published an impact evaluation of a mobile clinic in Florida that provided prenatal care to women. They conducted a retrospective case-control study using randomly assigned comparison group of women who delivered around the same time as the women who used the mobile clinic. They matched the comparison group on socio-demographic factors and the populations for both control and comparison group were predominantly immigrants from Mexico. The participants who used the mobile clinics had a statistically significant difference in the trimester that they initiated prenatal care and in the number of preterm births. Furthermore, they found that the mobile clinic group also had a lower percentage of low birth weight babies. The evidence from this study suggests that for certain populations,

mobile clinics could have an impact on their pregnancy outcomes [34]. However, with so few published studies on the topic, we lack the evidence to know if mobile clinics prevent poor health outcomes after pregnancy. Clearly the main focus of many of these mobile clinics is on reaching specific underserved populations.

Chapter 3: Manuscript

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Contributions of the Student

In 2013, GMIHRG began a research study that had three overall objectives; to clarify the impact of Georgia's obstetric shortage, to explain the reasons behind the shortage and to identify solutions for Georgia's Maternal Care System. My contribution to this study included being the primary investigator (PI) for the third objective - to identify solutions for Georgia's obstetric shortage. In this objective, we conducted interviews with 81 participants, including obstetric service delivery providers and women who gave birth in Georgia within the last two years.

As the PI on the study objective, I wrote and submitted the protocol for IRB approval and trained and managed six research assistants throughout data collection. This was all done in collaboration with the advisors of GMIHRG including Bridget Spelke, Adrienne Zertuche, Pat Cota, Dr. Andrew Dott, Dr. Roger Rochat, and Dr. Monique Hennink. The six research assistants (RA's) were Ayanna Williams, Jessica Harnisch, Erika Meyer, Lauren Espinosa, Alexandra Reitz, and Jenny Besse. The RA's all conducted and transcribed the interviews. My role was to maintain all confidential information, help RA's find and connect with potential study participants, and to assemble all information at the end of data collection.

The data used in this document is subset from this 2013 study. The research gathered through data collection was split into two research projects, one being an analysis of the perspectives of the clients and the other being this research study, the perspectives of service delivery providers. I conducted analysis of the data alone, but with the support and mentorship from Monique Hennink, and I conducted all other aspects of this study, including writing and table development, alone but with the support of Roger Rochat and Monique Hennink.

Abstract

Background: A workforce study conducted in 2011 by the Georgia Infant and Maternal Health Research Group (GIMHRG) found that 52% of Primary Care Service Areas outside metropolitan Atlanta Georgia had an overburdening or complete lack of obstetric care. In response, GMIHRG collaborated with the Georgia Obstetrical and Gynecological Society (GOGS), the Georgia Department of Public Health, and the March of Dimes Foundation to identify the challenges that service providers face while delivering care and to describe essential components of new models of care that might be implemented. Proposed models of care include rotating physicians into shortage areas; incorporating certified nurse midwives, obstetricians, and maternal fetal medicine specialists into a tiered model; using a hospitalist model of care; and adapting mobile clinics.

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Results: Service delivery providers face significant financial barriers, including low Medicaid reimbursement, high cost of medical malpractice insurance, and high percentage of self-pay patients. Furthermore, the gaps within in the Maternal Care System include patient's late initiation into prenatal care and a lack of collaboration between stakeholder populations. Essential components of effective models of care include patient continuity of care, efficient use of resources, and risk appropriate care.

Discussion: Our analysis revealed that an ideal service delivery system would include closer collaboration among different stakeholder populations, decentralization of services, increased continuity of care, decreased time to care, and increase reimbursement rates that align with incentives for risk appropriate care. These findings should serve as the foundation for policy makers and program managers as they endeavor to resolve the obstetric provider shortage in Georgia. Incorporating these findings into Georgia's maternal and child health programming will improve maternal and infant health outcomes.

Introduction

The Centers for Disease Control and Prevention (CDC) reports that in 2012 alone, nearly four million children were born in the United States and nearly 85% of women will experience at least one birth by the age of 45 [1]. This means that the Maternal Care System in the United States has the opportunity to reach millions of women throughout their lifetime and can be an important area to address the health and wellbeing of both women and babies. However, many factors affect a woman's ability to receive adequate health services including socio-demographic characteristics, such as income, race and ethnicity, and insurance; and physical characteristics such as her physical access to health care services before and during pregnancy [2]. Therefore, the United States has endeavored to address these disparities by creating 10-year maternal and infant health goals in Health People 2020, to improve the health and wellbeing of women and infants through an increase in preconception and inter-conception care [2].

Additionally, in 2009, an organization called the Childbirth Connection brought together a collaboration of nearly 100 stakeholders in maternal and child health to discuss the current state of the Maternal Care System in the United States [3]. From this symposium, they noted "the dominant model for provider care utilization in the US maternity care system features silo-based micro-systems with individuals delivering care in parallel. Such systems are vulnerable to duplication of effort, gaps in care, competitive environments, and waste of finite resources" [3]. From this, they proceeded to create eleven key recommendations for transforming the current system into a high-value, high-quality Maternal Care System. Many of these recommendations aim to remove gaps and challenge that providers face within the system in order to generate increased access for women and children.

Georgia's Maternal Care System is very similar to the system described in the report from Childbirth Connection, with individuals delivering care in parallel and duplicating efforts. Consequently, the maternal and infant health outcomes in Georgia are dismal, with Georgia ranking 49th in the country for maternal mortality [4] and 25th for infant mortality [5]. Therefore, in 2011, an organization called the Georgia Maternal and Infant Health Research Group (GMIHRG) collaborated with the Georgia Obstetrical and Gynecological Society (GOGS), and the Department of Public Heath, and financially supported by the March of Dimes Foundation (MOD), to do a workforce assessment of obstetric services throughout Georgia. From this assessment they discovered that nearly 52% of counties outside of metropolitan Atlanta had an over burdening or complete lack of obstetric providers. Furthermore, GMIHRG estimates that by 2020 this deficit will increase to nearly 75%, potentially exasperating the already poor maternal and infant health outcomes [6].

In order to address this finding, in 2013, GMIHRG launch a comprehensive research study in an effort to clarify the impact of Georgia's obstetric shortage, explain the reasons behind the shortage and identify solutions for Georgia's Maternal Care System. This study is part of the third objective of GMIHRG's research, and aims to understand the perspective of service delivery provider's. We chose this specific population because while ample research has been conducted on the barriers that pregnant women face when seeking obstetric care, little research exists that documents the challenges and opportunities for improvement on the provider's side. Therefore, this study aims to fill that void of research through gaining the perspectives of obstetric providers in order to identify sustainable solutions for the Maternal Care System in Georgia.

To understand the service delivery providers perspective on opportunities for improvements to the Maternal Care System, we presented them with four alternative models of care that were identified through an in-depth literature review before the study. These alternative models include an obstetric timeshare model, a tiered model of care, a hospitalist model, and mobile clinic model. Participants of our study were provided brief outlines of each of these models before the interviews and asked in-depth questions about their potential use and efficacy in Georgia. The models are explained in detail below:

Obstetrician Rotations – Time Share Model

This model is an adaptation of the "Locum Tenens" model that is currently popular across the United States. The goal of "Locum Tenens" is to provide medical services to underserved areas [23] by providing short or long term replacements for doctors who are going on vacation or leave, or who are providers in underserved hospitals. This model adapts this concept by creating an obstetric time-share model, where a rotating schedule of visiting OBGYN's will provide care in shortage areas of Georgia. Participating physicians would spend 3-4 days each month providing women in an underserved area with obstetrical and gynecological services. Incentives, such as luxury accommodations and access to quality golf courses for the duration of their stay, would serve to encourage physician participation in the program. All malpractice costs would be covered through the group practice.

Tiered Model of Care

The second model is the tiered model of care, which encourages collaboration between different types of obstetric providers. In this model, all deliveries take place at a centralized hospital, while outpatient services are provided at part-time clinics distributed throughout the area. Certified Nurse Midwives (CNM's), provide care to low risk patients in decentralized clinics and

assist in labor and delivery of low-risk patients. Obstetricians care for moderate risk patients, identified by the mid-level providers, in fewer, more centralized locations. They will then delivery complicated births and uncomplicated antepartum care. Finally, Maternal Fetal Medicine (MFMs) specialists see high-risk patients in one central location for pre-natal care and will deliver all high-risk patients. This model provides the option of a single flat-fee for comprehensive outpatient maternity care (including all labs, ultrasounds, monitoring, etc.). They also accept private insurance and Medicaid.

Hospitalists

The third alternative model of care is the obstetric hospitalist model. Obstetrician hospitalists work exclusively with hospitalized obstetrical patients and are full-time hospital employees that they enjoy a predictable shift-based work schedule. In this model, women see a community obstetrician for prenatal care, and their labor and delivery is attended by an Obstetric Hospitalist, who fetal heart tracings, address dysfunctional labor and preform operative deliveries. As hospital based physicians, they maintain communication with patients' regular physician and provide the option of delivering for the physician. The women will then return to their community-based obstetrician for all postpartum care.

Mobile Clinics

The next model of care is the use of Mobile clinics, where clinical providers use vans to travel around Georgia and provide prenatal care. Mobile clinics are popular modes of providing care to rural and vulnerable populations throughout the world; however, very little literature has been published on their overall impact on health outcomes in the United States. In fact, most organizations in the United States that currently provide medical mobile clinics focus on uninsured or underserved areas. Students from Harvard Medical School designed an interactive

map that shows all mobile health clinics that are currently providing care in the United States. Nine mobile health clinics currently operate in Georgia, mostly in metropolitan areas [32].

The goal of this study was to find innovative solutions to Georgia's Maternal Care System through in-depth interviews with obstetric service delivery providers. Our study was able to identify key challenges of individual clinical providers, describe gaps in the overall Maternal Care System, and provide recommendations for key components of care. These results give advocacy organizations, policy makers, and programmatic officials, the tools that they need to create innovative solutions for the Maternal Care System in Georgia.

Methods

Study Population

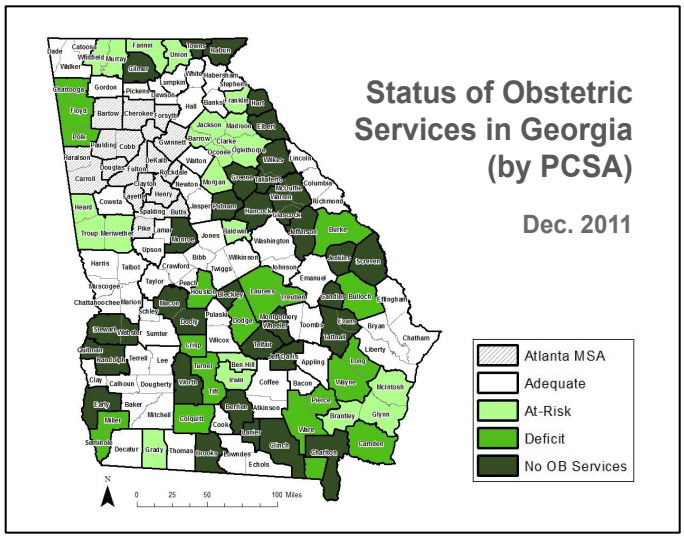
In-depth interviews were conducted with 46 health professionals who currently or have previously provided obstetric services in the state of Georgia in a variety of roles. Participants included clinical providers, who provide prenatal, labor and delivery support; staff members at local health district offices, who provide auxiliary services to pregnant women; and staff from care management organizations, which disperse Medicaid reimbursements and provide case management to high-risk women with Medicaid insurance. A full list of participants can be found on table 1.

Table 1

Participants	
17	Obstetrician-Gynecologist Generalists
5	Family Practitioners
2	Maternal Fetal Medicine Specialists
5	Certified Nurse Midwives
5	Staff Members of Care Management Organizations
7	Staff Members of the Department of Public health or GOGS
5	Hospital Administrators

In an effort to understand the diverse challenges faced by providers, we recruited study participants who worked in service-rich and service-shortage areas. The obstetric service map of Georgia created by GMIHRG in 2011 (figure 1), using data from a workforce assessment, shows the geographic distribution of the areas defined as service-rich and service-shortage. In this map, service-shortage areas are considered to either have no-obstetric services, have a deficit of services, or at risk of having a deficit of providers.

Figure 1



Georgia Maternal and Infant Health Research Group, 2011

We recruited participants using a snowball method. We began with known contacts, gathered referrals for additional colleagues, and contacted potential participants using a letter of endorsement from the GOGS, which was provided for accreditation of the assessment (appendix 2).

Data Collection

We collected data using semi-structured, in-depth interviews to allow participants to share their individual experiences and perspectives. Four research assistants were trained in the design of semi-structured interview guides, active listening techniques, qualitative interviewing, ethics of qualitative research, and transcription. Subsequently, these research assistants collaborated with key members of the advisory committee to develop the in-depth interview guides and conduct all interviews. Three different interview guides (appendix 3) were created that followed the same general outline but were focused towards the participant's position in the system, with unique

guides created for staff members at CMO's and DPH, clinical providers, and hospital administrators.

Each interview took approximately 60 minutes to complete and consisted of two sections. The first half focused on the participant's current position with specific questions addressing the challenges and obstacles to providing quality care. The second part explored the efficacy of the proposed models of care, discussed above.

Most interviews were conducted in the participant's office or home; however, due to the size of the study area, some interviews were conducted via telephone. Furthermore, while every effort was made to create an environment that promoted confidentiality, some participants refused to be recorded during their interviews because of the nature of their position within certain organizations. Therefore, these interviews used a note taker to capture key points. All interviews were conducted between July and September of 2013.

Data Analysis

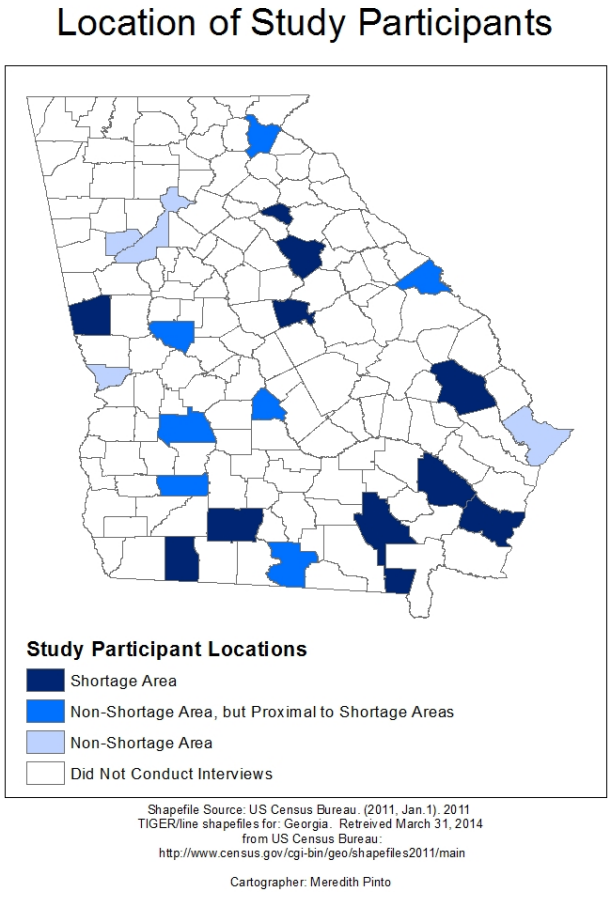
Members of the research team completed verbatim transcriptions of all interviews and, removed all identifying information from the final transcript to ensure the confidentiality of study participants. Qualitative data analysis was conducted using MAXQDA software. In an initial reading of the transcripts, we identified key issues that were later grouped into themes, refined, and entered into a codebook. The first third of the interviews were assessed for inter-coder reliability before finalizing the codebook and completing the data coding. The finalized codebook can be found on appendix 5 of this document.

The aim of data analysis was to extract core themes around the challenges that providers faced while providing Obstetric care and the efficacy of previously discussed models of care.

Furthermore, whole exploring the efficacy of the different models of care, researchers aimed to identify core components of care that can be later used in developing future alternative models in order to overcome the challenges and gaps in care. Data coding began with deductive themes identified through a previous literature review. These starting assumptions were that providers faced significant financial burdens stemming from low reimbursement rates and high malpractice insurance. However, through subsequent reading of interviews, additional challenges began to emerge and became inductive codes. Both inductive and deductive codes were applied to the interview transcripts and explored during analysis.

Data analysis was conducted looking at the perspectives of participants by their provider type, practicing location, and gender. By referencing the map created by GMIHRG in 2011, we assigned each participant a "service area type" based on his or her practice location. These categories became shortage area, non-shortage area, and non-shortage but proximal shortage areas. A map of these service area types can be found in figure 3. Furthermore, we later assessed the different challenges of clinical providers based on if they self identified as working in a solo practice or group practice. This helped to identify

Figure 3



individual challenges that clinical providers faced. After developing our results and conclusion, we validated our work by revisiting the interviews to make sure that our inferences were grounded in the words of our study participants.

Limitations

While we made every effort to ensure the validity of this study, several limitations still exist. First, because all participants were members of the service delivery side of the system, this study does not take into account the consumer perspective. Without this perspective, the recommendations made at the end of this paper must be validated through further research with consumers before they can be implemented in a larger scale setting. Second, the lack of providers located in shortage areas in Georgia meant that only a limited number of stakeholders from regions with the worst deficits were able to participate in the study. Finally, this study focuses on Georgia's Maternal Care System; therefore, the information presented in this study can only be applied to Georgia and should not be generalized to OB services more generally throughout the United States without additional research from those locations.

Ethical Considerations

In June 2013, prior to data collection, the Emory University IRB reviewed the proposed assessment and determined that it meets the criteria for exemption because it did not "meet the definition(s) of "research" with human subjects or "clinical investigation" as set forth in Emory policies and procedures and federal rules" (appendix 1). Trained field staff employed by the Georgia Maternal and Infant Health Research Group conducted the interviews. Data analysis began January 13, 2014 and all data was de-identified prior to analysis.

Results

Obstetric System Organization

A process map (appendix 6) provides a description of the Maternal Care System from the patient's perspective. This map allows one to see how different stakeholders work within this system and how each provides different types of essential care to patients. These stakeholders include Care Management Organizations, which administer Medicaid; members of the Department of Public Health; GOGS, an advocacy group that influences policy; hospital administrators, which influence individual hospital policies; and clinical providers which include Maternal Fetal Medicine Specialists, Obstetricians, and Certified Nurse Midwives.

Role of Care Management Organizations

CMO's are primarily responsible for distributing Medicaid reimbursements to providers and providing case management to high-risk women. Currently, three CMO's work in Georgia and each is individually responsible for the health outcomes of their patients. The CMO's intention is to build a comprehensive support system for their patients through case management of high-risk patients in order to adequately allocate and use financial resources.

Role of Clinical Providers

Clinical providers are responsible for providing women with prenatal care, labor and delivery support, and postpartum care. The type of provider and the level of intensity of care are contingent on the patient's risk of complications during pregnancy. CNM's generally see low risk patients and provide education to patients on prenatal health, and support them through labor and delivery. If CNM's work with higher risk patients, their role is generally in the office

providing pregnancy education, however, some will support physicians during labor but will not take an active role during delivery.

Only thirteen Family Physicians (FPs) in Georgia provide obstetric services. FP's stated that they provide services because other physicians will not take OB patients. FP's that do not work within the Maternal Care System stated that their reasons for not providing maternal care included hospital policies, which do not allow FP's to deliver in their facilities, and lack of sufficient clinical skill, and ultimately, the do not make enough money to cover their malpractice insurance.

Obstetricians see most patients within the Maternal Care System. They provide care to both low-risk and high-risk patients depending on their skill level and the rating of hospital in which they practice. Hospitals are rated based on their capacity to provide different levels (I-III) of OBGYN services. Level I hospitals should not deliver high-risk patients because they do not have the facilities or monitoring techniques needed to provide highly technical care to their patients.

Maternal Fetal Medicine specialists provide care and consultation for high-risk patients and often co-manage patients with an OB or FP during prenatal care. They will do deliveries for patients only for those that are extremely high-risk and they work at higher rated facilities (Level II or III).

Role of DPH and GOGS groups

The Department of Community Health partners with CMO's to improve health outcomes for the Medicaid population. County Departments of Public Health provide pregnancy tests in their facilities but do not provide any other type of prenatal care, since Medicaid does not reimburse

them for it. Their primary role is to provide women with auxiliary services such as WIC or family planning. They provide prenatal services for undocumented or uninsured women.

The Georgia Obstetric and Gynecology organization is an advocacy group that works closely with the providers for continued education and quality control and advocates on the providers' behalf in the local and state governments. They also focus on building connections with other stakeholders so that providers can do their job more efficiently.

Challenges of Clinical Providers

When we began to analyze the data there seemed to be a number of challenges that were specific to clinical providers and created barriers for these physicians to provide care to patients. While other participant populations faced similar challenges, the way that these challenges influenced clinical providers seemed to have more of a direct influence on patients and contributed to the gaps in the Maternal Care System as a whole.

Cost of Service Delivery

While nearly every participant population cited finances and funding as being a major challenge, it seemed that clinical providers felt this overwhelmingly more than other populations. A large majority of clinical providers expressed that Medicaid reimbursements were too low and the cost of malpractice insurance was too high. The low reimbursement rates affected their practice and impaired their ability to provide care to their patients. They expressed the need to add more patients to their schedules, if they took Medicaid patients, since reimbursements were low. This means that the clinical providers are left with very little time to provide pregnancy education to their patients. One even mentioned that she had learned how to "talk fast" in order to get all of the information to her patients.

Clinical providers financial struggles were exasperated by the high cost of medical malpractice insurance. This challenge was significantly higher for those providers who are paying for their own malpractice insurance than those providers who are covered by their group practice or hospital. This burden is articulated well when an OBGYN stated that his biggest challenge was getting paid. One OBGYN stated that his biggest frustration was that everything costs more "malpractice insurance, employee salaries and benefits, utilities, rent. So how do they think that we can keep providing service and be happy, keep that smile on our face, and keep paying us the same? Other insurance has gone down, private insurance has gone down, and Medicaid has stayed the same". The result is that a few providers felt that in the future it might not be "lucrative to continue to provide obstetric services". Furthermore, financial burdens have prevented some providers from expanding their services and caring for Medicaid patients. One OBGYN noted, "the challenges now are that you really can't make a living taking care of people on Medicaid and Medicare and pay your liability insurance... Now we take people whether they are Medicaid or wealthy or whatever. But we draw from a lot of the counties around us, [and focus on] the people who have insurance."

It is important to note that inadequate funding also hinders provision of care from the Department of Public Health. Participants from district health offices noted that funding for many of their programs comes from private grants rather than state or federal government.

Liability

While the cost of medical malpractice insurance contributes to providers' financial burden; the threat of potential lawsuits was also discussed as having an impact their clinical practice. Nearly half the OBGYN'S and MFM participants stated they might practice defensive medicine due to the fear of a potential medical malpractice lawsuit. An OBGYN described this challenge well

when she stated, “I think we may practice defensive medicine. I never regretted doing a C-section… but I still think there are situations where interventions are done because you are so worried about a bad outcome.” Another OBGYN stated “I don't want to say that we practice defensive medicine, but we certainly do a lot of testing, antenatal testing of mothers, and before we send them home that baby is going to look good. If there is any question, then we are going to keep that mother and baby. Unfortunately, some of that is fueled by defensive medicine and the threat of a malpractice suit”. Increasing the tests provided to mothers is important for providers to find potential complications, but if this is done in fear and not because of potential clinical signs of a problem, it has the potential to increase the burden on providers and strain the resources of an already over-burdened system. If this happens, it could have a snowball effect and create bigger financial barriers for providers in the future.

Some participants displayed a defeatist attitude while discussing this challenge. They commonly expressed that malpractice was just part of the system and out of their control. The following quote, from an OBGYN, is an example of this type of attitude: “You come out of residency and think you’re going to conquer the world and do all these things and save everybody’s life but you come out learning you have to practice medicine completely defensively and it’s kind of scary, ya know. Everything, every patient and situation, is looked at as a potential malpractice and you hate to do that because then the patient becomes, not the enemy, but they become not necessarily on your side.” When providers begin to have this type of attitude toward their patients, it has the potential to create mistrust between the provider and patient, ultimately creating more barriers for effective maternal care within the system.

Culture of Doctors

The culture of providers tended to play a role in the way that the participants perceived their work and influenced how they collaborated and interacted with other stakeholders in the system. An example of this culture is the "good ol' boy mentality" of older doctors who tended to work long hours, deliver their own patients, and not collaborate with other OBGYN's or mid-level providers. Our interviews also revealed that providers who worked alone faced significantly more challenges than those providers who worked in groups. Working in a solo practice did offer OBGYN's a larger financial incentive, since they do not have to split their low reimbursements with anyone, but they were always on call and bound to their responsibilities. Several noted that they felt that it was difficult to take time off because they were either unable to find substitutes to cover their calls or take on the substantial financial burden of paying a temporary doctor. In one provider's words: "For about 2 years…I was a solo practitioner taking call by myself. So I was on call 7 days a week for 24 hours a day. And the "taking call" wasn't so bad; it was the fact that I could not leave [town]. And to be able to leave I had to bring in a, what do you call it, locum tenums. And to pay a locum tenums to take a 3 day vacation, a 3 day weekend, usually cost about $5000."

A few providers did not trust the quality of mid-level providers, especially during labor and delivery. Others seemed worried that increasing the use of mid-level providers would cause some confusion about the role of each provider and were concerned that mid-level's would be mistaken for doctors. This sentiment could be the catalyst that prevents obstetricians from collaborating more closely with CNM's.

Gaps in Current Obstetric System

Our analysis also identified challenges that crossed participant populations and were more ingrained into the Maternal Care System as a whole. These challenges create gaps in the current model of care and aggregate the deflected balance of the system as a whole, creating barriers for both patient and provider.

Patient Population Influences on Provision of Care

Participants discussed the challenge of working with populations of lower socio-economic means, especially because these populations tended to be more transient and at higher risk for pregnancy complications. A sentiment that was echoed repeatedly by both obstetricians and staff members at CMO's was that "there are very few, very very few people in [this area], especially the underserved, that are not high risk. The tobacco use, I mean all of the classics: they're over weight, they're underweight, they're teenagers, I mean most of the people who are underserved, are also at risk".

The culture of patients also influenced provider's ability to encourage compliance with recommendations to attend prenatal care visits and to have patients engage in behaviors that reduce high-risk factors. Participants believed that this population tended to be less inclined to listen to pregnancy education and continued behaviors that make them high-risk for pregnancy complications leading to a lack of compliance. Furthermore, several participants noted that when patients come late or do not attend appointments it becomes difficult to have an efficient schedule and shorter wait times. A staff member of a CMO said that the biggest complaint that he hears from physicians "is the no-show rate…there are times that [physicians] will multi-book [patients] and all of them will show up, and then [the patients] will complain because they have to wait. Then there are times when they will multi-book and hardly anyone shows up and they

could have put, maybe, a commercial patient into that slot". Case management was also difficult with this population for the CMO's since the case management is generally done through telephone calls and ground mail.

One challenge expressed by clinical providers, is the lack of other MFM's that are available to provide consolations for high-risk patients. In fact, one family practitioner even noted that while their practice makes every effort to send people to specialists, when it comes to delivering their patients they "don't know the definition of high-risk… We deliver everybody. High-risk is an after thought… We don't want to do high-risk work, but high-risk walks into our department everyday." This causes a significant problem within the system when women who have specific risk factors must deliver at higher-level hospitals where specialists have the technology and education to manage those complications. One participant tried to articulate this culmination of problems when he said, "that's what I'm trying to say, because the population [rural providers] are serving is higher risk. Poverty, there is a lot of poverty so those rural areas have the doubly whammy. They have the population itself is at higher risk because of the poverty, the literacy, all the associated factors. On top of that, you have limited resources." [Staff Member, District Health Office]

Late Entry into Medicaid

Participants across the board cited late induction into prenatal care as being an important gap in the Maternal Care System in Georgia. CMO participants confirmed this and noted that the length of time that it takes for women to complete the Medicaid process means that some women will not enter into prenatal care until their second trimester, long after they should begin receiving care. Late enrollment is a clinical challenge because it puts patients at higher clinical risk and that providers are "are playing catch up" to address and manage these risks, much later

than advised. A description of the process and how it impacts the system is described by a member of a CMO, who said, "right now, if a woman goes to (a District Health Office), she gets her pregnancy test, then she goes to the Medicaid enrollment vendor, she goes through the process, and then she has up to 59 days to make a decision about what CMO she wants to join—that's two months. By the time she finds out that she is pregnant, she is already 6 weeks or 8 weeks and it's another two months to decide what CMO she wants to join. By the time I get both of my pregnant women, they are already in their second trimester, very far along."

Collaboration of Service Delivery Providers

Lack of collaboration between the service delivery providers was not specifically discussed, however, it seemed to be an underlying theme influencing individual clinical provider challenges and creating duplication of services within the system. Specifically, collaboration of efforts between mid-levels, obstetricians, and MFM's was discussed as essential when providers talked about their work schedule, however, it was clear that there were challenges when trying to effectively collaborate. For example, since there were many high-risk patients, obstetricians needed to collaborate with MFM's to co-manage their patients. However, this was a significant challenge for those working in shortage areas because MFM's commonly live in larger cities, sometimes at distances that were difficult for their patients to get to. Furthermore, while a majority of providers supported working with CNM's, a few obstetricians had strong beliefs on the quality of services provided by CNM especially during labor and delivery. Others were against using CNM's because they felt that patients might confuse the role of the Doctor and CNM. This provides a distinct challenge within the system and makes it difficult for patients to receive effective care.

Staff members at health district offices often discussed lack of collaboration as a cause for duplication of services since both CMO's and the DPH provide case management to patients. CMO's use phone calls and text messages to provider case management for their patients, whereas DPH generally uses outside funds for more specific case management such as home visitations, centering pregnancy programs, etc. However, one CMO described a challenge with this type of service when working with a transient population where "40% of our members we are unable to reach because either they have no phone number, there's a bad phone number, or it's an invalid phone number. We are trying to reach out to them and it's a challenge. That informs me and tells me that for this population that the usual telephonic outreach may not be as effective as it could be or I supplement that through other means of connecting with the member." However, DPH's are rarely utilized to fill this gap even though some are equipped to provide in-depth management and home visitations to patients. Furthermore, staff of DHO's said that they want to contribute to effective case management, but the CMO's they are not reimbursed by Medicaid to provide case management and that they could contribute to more efficient case management if they were able to collaborate with CMO's.

Important Components of Providing Care

Participant's responses to the alternative models of care revealed three main themes that were important for provision of prenatal care: continuity of care, efficient use of resources, and risk appropriate care.

Continuity of Care

Participants expressed that continuity of care was extremely important for patients and many reacted very negatively toward models of care that had a rotation of providers, including the time-share and hospitalist models. They not only discussed the importance of preserving of

medical information, but also continuity of the patient provider relationship. A member of a district health office described this lack of continuing of care as being "in terms of information that can be lost. That is not just of medical history and something critical like that, but there is certain information that you get from seeing a patient over and over". The few participants who have used the hospitalist model of care still felt that continuity of care with patients was important. One CNM stated that she made an effort to "build that relationship with [the patients]. I don't think you could use a hospitalist model if you had an outpatient practice where the patient saw a whole bunch of different providers. If they saw whoever was there for that day, and none of them were going to be the one that delivered them, I think that would be really different". This quote confirms the fundamental need to have a consistent provider work with the patient in order to preserve the continuity of care.

Efficient Use of Resources

During analysis, researchers noted that participants frequently discussed the efficient use of resources while talking about collaboration between providers. Participants noted that mid-level providers could more effectively and efficiently complete certain aspects of the Maternal Care System than OBGYN's, especially since OBGYN's time tended to be discussed as a limited resource. These aspects include the "educational piece… the case management piece, it doesn't need to be a physician …it's a better utilization of their resources to take care of those patients and the education really should take place by those lower level providers." This sentiment was echoed by CNM's who discussed their role in the system by stating that research has "demonstrated for many, many years in the United States excellent outcomes for nurse midwives, we should be the first line. We are trained in normal pregnancy and physiology; we should be the first line because most pregnancies are normal. We know when they are not

normal, and when they are not normal, then we refer up. That way, you have the best utilization of resources."

Risk Appropriate Care

Another gap identified in the current system of care is that there is no incentive to send women to the correct level of care for their pregnancy risk. One member of the DPH stated, "as long as we reimburse people at the global fee, doctors are going to keep women in the level of care that they should not be and that is a problem… For the ways things are structured now, hospitals and doctors want to keep those women. They know they may be at risk, but the family practice or even the OB may want to keep it because they know that is money, even though it is not in the best interest of the momma. But that is not the way the reimbursement flows, there is no incentive to send the woman to the right level of care".

Discussion

Service delivery providers face a number of challenges that impact and exacerbate the gaps in Georgia's Maternal Care System. These factors influence the way that providers give care and also have the potential to perpetuate the barriers that patient's face when seeking care. The study found that the cost of service delivery, including low reimbursement rates for Medicaid and the high cost of malpractice insurance, was a core challenge for clinical providers. This is an important finding because it was a pervasive theme throughout the interviews and influenced much of the behavior of the physicians, including their decision to provide care to Medicaid patients, to collaborate with other physicians or mid-level practitioners, and, ultimately, continue to work in obstetrics. Consequently, some providers discussed providing care to Medicaid patients as a civic duty and did so because they felt compelled to help people in their community who had no other place to go.

Another important finding was the interplay that seems to exist between the culture of doctors and their ability to collaborate with other providers. Based on the interviews, it seemed that some older providers, and providers that worked in severe shortage areas, were less willing to collaborate with CNM's to provide care to patients. They tended to question the quality of CNM's work more frequently and, for shortage area providers, seemed more uncomfortable leaving a CNM alone in the hospital in case a high-risk patient walked into the hospital and needed help immediately. Conversely, many of our participants across sectors expressed that the system should be set up so that obstetricians collaborate with CNM's for pregnancy education and support of low-risk births, and also MFM's to mitigate the complications associated with high-risk factors.

These important findings were essential in understanding the challenges that exist within the system so that alternative models of care could be identified. When the study took into account both the challenges and the perspectives on alternative models of care, we were able to identify six core components of an ideal service delivery model; decentralization of services, increased collaboration between providers, continuity of care, and reimbursement rates with incentives for risk appropriate care, decreased time to care, and a streamlining of the functionality of the liability system.

Components of an Ideal Service Delivery System

1. Decentralization of services
2. Increased collaboration between providers
3. Increased Continuity of care
4. Increase reimbursements with incentives for risk appropriate care
5. Decrease time to care
6. Streamline functionality of the liability system

Many of these components of care were supported by the Childbirth Connections report, *A Blueprint for Action [3]*. These national recommendations coincide with our recommendations for an increase in collaboration between providers, an

increase in reimbursement rates with incentives for risk appropriate care, and streamlining the functionality of the liability system. The other recommendations are specific to alleviating Georgia's gaps and challenges.

Decrease time to care, decentralization of care, and increased continuity of care are three recommendations that are specific to Georgia and aim to reduce the disparities for women. The ability to have women enter into prenatal care earlier needs to be at the forefront of any system wide change. This means both decreasing time associated with getting women onto Medicaid insurance and assisting women to see a provider earlier. This means that Georgia either needs to streamline their process for getting women into Medicaid insurance and reduce the confusing paperwork and long wait times, or it needs to expand Medicaid so that women continue to have insurance and they do not need to reapply every time they find out they are pregnant.

Getting women into care earlier can also be facilitated through decentralization of care into shortage areas. As providers begin to collaborate more closely with one another, CNM's need to be sent into outlying communities to provide prenatal care for low-risk pregnancies using satellite clinics. Even though this CNM may not support the patient throughout labor and delivery, this provides patients with a steady clinical provider to see during pre-natal care, a component of care that was discussed frequently by participants. Providers need make an effort to maintain a relationship with the patient and use a standardized electronic medical record system to capture the medical needs of the patient. The goal of this continuity is to be invested in the lives of the patients and help them feel that the doctors care about the future of the community.

The *Blueprint for Action* identifies CNM's and Family Practitioners as "primary maternal care providers" and the best providers to care for women with low-risk pregnancy [3]. Our study confirmed this recommendation with many participants highlighting CNM's unique ability to provide pregnancy education and support during labor, thus reducing the burden on obstetricians. Therefore, in order to provide the most appropriate care for women in the community, CNM's need to be incorporated more frequently into our Maternal Care System in order to adequately utilize our limited obstetric providers and to reduce duplication of efforts. Furthermore, because our participants discussed the difficulties providing high-risk care to patients, we need to provide innovate solutions to encourage closer collaboration between OBGYN's in shortage areas and MFM's who live in larger cities.

Our participants expressed that the current state of the liability system creates situations where some clinical practitioners practice defensive medicine, which has the ability to create poor health outcomes for patients and increase the cost of health care since doctors might ask for unneeded tests and procedures. The *Blueprint for Action* supports a transformation of this system, since "in many cases claims are filed because of a bad outcome even though there was no negligence"[3]. A transformation of this system has the capacity to facilitate doctors to provide the best care possible for their patients and reduce the financial burden that physicians face due to the high cost of malpractice insurance.

Finally, our interviews suggested an increase in reimbursement rates for clinical providers, which might facilitate more providers entering into shortage areas, or for more providers to begin seeing Medicaid patients. Furthermore, both the *Blueprint for Action* and our interviews supported this increase being tied to incentives for risk appropriate care [3]. The current model does not incentivize providers to send the women to the correct level of care, because when

providers send women to higher risk care their reimbursement goes away with them. Therefore, as we re-think the way that reimbursements flow, we need to think about the impact that these reimbursement rates have on the patients health outcomes within the Maternal Care System in Georgia.

Chapter 4: Public Health Implications

Georgia has a clear need to improve maternal and child health outcomes at the end of pregnancy. Organizations such as GMIHRG, GOGS, and MOD are working diligently to find and create innovative solutions to this problem. Therefore, understanding the challenges that providers face within the system and identifying key characteristics of effective models of care, can give these organizations, policy makers, and programmatic officials, the tools that they need to create innovative solutions for the Maternal Care System in Georgia.

Our study found that service delivery providers face a number of challenges that when combine together impact and exacerbate the gaps in Georgia's Maternal Care System. These factors influence the way that providers give care and also have the potential to perpetuate the barriers that patient's face when seeking care. However, mitigating these challenges and providing recommendations for alternative models of Georgia's Maternal Care System should be at the forefront of our minds. Therefore, our study recommends six core components of an ideal service delivery model that should be addressed as policy makers, programmatic officials, and clinical practitioners within Georgia wherever possible. These include decentralization of services, and increased collaboration between providers, increased continuity of care, and increased reimbursement rates with incentives for risk appropriate care, decreased time to care, and a streamlining of the functionality of the liability system.

Since these recommendations work within different levels of the system, some on the individual level and some on the global level, these components need to be examined and implemented by different stakeholders across Georgia.

On a global level, Medicaid officials need to facilitate the decrease time to care by streamlining the paperwork associated with getting women onto Medicaid insurance. Furthermore, policy makers should look into expanding Medicaid insurance so that women continue to have insurance after they give birth. This is in accordance with the national Health People 2020 goals which recommend preconception and inter-conception care to improve the health and wellbeing of women and infants[2]. Furthermore, policy makers at the global level need to address the low reimbursement rates for Medicaid and also streamline the functionality of the liability system. Both of these recommendations are essential to creating a cohesive Maternal Care System, but clinical providers are powerless to change these aspects of care.

However, not all of these recommendations need to be address at the global level. Staff members at the district health offices or clinical providers have the ability to implement some of these recommendations at the individual level as well. For example, increasing collaboration between clinical providers can be achieved by OBGYN's taking initiative to work in closer collaboration with CNM's and MFM's. This collaboration can be achieved in a variety of ways, including the use of telemedicine. Most department of public health offices around the state are now equipped with telemedicine capabilities, therefore having the ability to provide tele-consultations with MFM's. People designing new health systems in shortage areas need to be conscious of the services currently in the community and be sure that additional services, including CNM's and telemedicine, do not disrupt the current system.

This collaboration between providers can also facilitate decentralization of care into shortage areas. Clinical practitioners who work proximal to shortage areas have the ability to easily implement this type of model. By providing women in shortage areas with this type of service, they have the potential to get women into care earlier and quickly identify complications that

could cause adverse health effects for both women and infant. Furthermore, clinical providers need to be conscious of the need for continuity of care with the patients and make ever effort to create a relationship with their patient. This could possible facilitate trust between the patient and provider and potentially mitigate the high default rate and lack of complicate from the patient.

Finally, in order to understand the patient's perspectives on Georgia's Maternal Care System, additional research is needed in order to:

- Explore how patients make decisions about their health and wellbeing during pregnancy
- Explore patient perspectives on challenges within the system and the efficacy the proposed components of care.
- Explore the provider-patient relationship to see how providers can provide more culturally appropriate care to patients.

This additional research can help the system address cultural barriers that may be preventing patients from entering the system and remaining compliant to providers throughout their pregnancy.

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Appendix 1: IRB Approval

EMORY UNIVERSITY | Institutional Review Board

8/28/2013

Meredith Pinto
Rollins School of Public Health
Emory University

RE: Determination: No IRB Review Required
Title: *A Qualitative Assessment of Gaps and Opportunities in Obstetrical Care Delivery in Georgia*
PI: Meredith Pinto

Dear Ms. Pinto,

Thank you for requesting a determination from our office about the above-referenced project. Based on our review of the materials you provided, we have determined that it does not require IRB review because it does not meet the definition(s) of "research" with human subjects or "clinical investigation" as set forth in Emory policies and procedures and federal rules, if applicable. Specifically, the purpose of this assessment is to identify barriers, gaps and opportunities in obstetric care delivery in Georgia. To do this, the project will focus on previously identified areas of Georgia with shortages of obstetric services and examine state and local stakeholders perceptions of the obstacles and areas for improvement in our current system of perinatal health care delivery. By interviewing a variety of prenatal care stakeholders, the proposed work strives to answer the research question that is to "assess the gaps and opportunities in obstetrical care and delivery in Georgia". You aim to develop obstetric provider recruitment/retentions strategies and provide recommendations for alternative models of care with high levels of feasibility/acceptability in those communities. The overarching goal of this assessment is to provide recommendations to policy makers and key stakeholders on how to strengthen the maternal and child health services in the shortage areas in Georgia.

Please note that this determination does not mean that you cannot publish the results. If you have questions about this issue, please contact me.

This determination could be affected by substantive changes in the study design, subject populations, or identifiability of data. If the project changes in any substantive way, please contact our office for clarification.

Thank you for consulting the IRB.

Sincerely,

Michael Arenson, MA
Analyst Assistant

Emory University
1599 Clifton Road, 5th Floor - Atlanta, Georgia 30322
Tel: 404.712.0720 - Fax: 404.727.1358 - Email: irb@emory.edu - Web: http://www.irb.emory.edu

Appendix 2: Letter of Endorsement

Georgia OBGyn
GEORGIA OBSTETRICAL AND GYNECOLOGICAL SOCIETY

P. Ruth Cline, MD
President
740 Prince Avenue
Building #3
Athens, GA 30606
(706) 548-4272

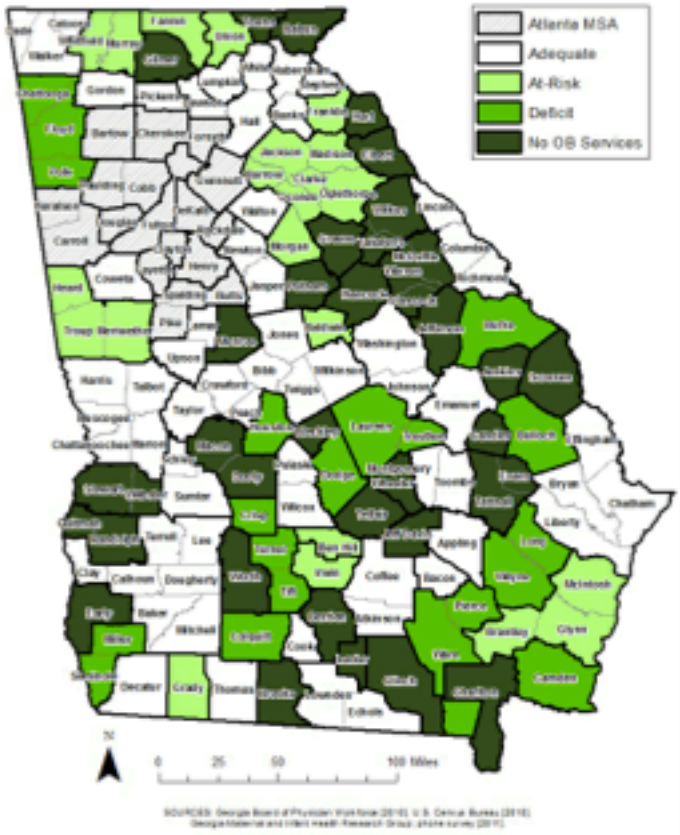
Patricia Cota, RN, MS
Executive Director

June 2013

Dear Colleague,

The Georgia OBGyn Society, working through a grant partnership with the Georgia Department of Public Health and the March of Dimes, is conducting research on the obstetrical shortage in Georgia. Initial research determined at least 40 counties in the state did not have an obstetrical provider and the number was growing.

The second part of the research delves into reasons for the shortage and potential solutions. It involves collecting data from professionals throughout the state who have insight into obstetrical care from many perspectives. Your name was provided to us by an advisory committee indicating you as someone whose knowledge would be valuable to this project.



Georgia Maternal and Infant Health Research Group (GMIHRG) headquartered out of Emory and Rollins School of Public Health will be conducting the research. When they contact you please make time in your schedule to be interviewed by the GMIHRG representative. What you have to share is important to improving access to obstetrical care for Georgia.

Results of the project will be shared with all those who find them useful to help improve access to OB care. Thank you for your time and we look forward to your input for this project. Please contact me at 770-904-5294 if you have any questions.

Pat Cota
Executive Director

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Appendix 3: Proposed Models of Obstetric Care

Model 1. Ob-Gyn Time-Share

A large obstetrical group in Atlanta has proposed increasing access to obstetric and gynecological services in shortage areas by developing a rotating schedule of visiting Obstetrician/ Gynecologists. Participating physician would spend 3-4 days each month providing women in an underserved area with obstetrical and gynecological services. Incentives, such as luxury accommodations and access to quality golf courses for the duration of their stay, would serve to encourage physician participation in the program. All malpractice costs would be covered through the group practice. The aim of this model is to reduce the burden on local physicians, as well as increase the availability of services to women in these communities.

Model 2. Tiered Model of Care

Since 2002, a private Atlanta based practice has used a tiered system of care to provide both obstetrical out-patient and in-patient services to a large region in metropolitan Atlanta. All deliveries take place at a centralized hospital, while outpatient services are provided at nine part-time clinics distributed throughout the area. Outpatient services are provided on three tiers:

- Mid-level practitioners (certified nurse midwives (CNMs), obstetrical physician assistants (PAs)) provide care to low risk patients in decentralized clinics. Care is delivered part-time, in community-based facilities at low cost.
- Obstetricians care for moderate risk patients, identified by the mid-level providers, in fewer, more centralized locations. Many obstetricians in this model work part-time and maintain their own private practices.
- Maternal Fetal Medicine (MFMs) specialists see high-risk patients in one central location.

This tiered outpatient system is complemented by a similarly tiered system for in-patient services:

- Normal, uncomplicated births are attended by mid-level providers (CNMs and obstetrical PAs)
- Complicated births and uncomplicated antepartum care are attended by obstetricians.
- High-risk obstetrical care is handled by MFMs.

Departing from the fee-for-service model, this model provides the option of a single flat-fee for comprehensive outpatient maternity care (including all labs, ultrasounds, monitoring, etc.). They also accept private insurance and Medicaid. Over the past 11 years, this model of care has been effective at simultaneously increasing access and reducing cost of obstetrical services in the metropolitan setting.

Model 3. Obstetrician Hospitalist

Obstetrician hospitalists work exclusively with hospitalized obstetrical patients. They manage labor, follow fetal heart tracings, address dysfunctional labor and preform operative deliveries. Many also care for gynecological and obstetric emergencies. As hospital based physicians, they maintain communication with patients' regular physician and provide the option of delivering for the physician. As full-time hospital employees, they enjoy a predictable shift-based work schedule. For these reasons, this model of obstetric care has been increasing in popularity since 2010. Georgia currently has three hospitals that use this model, Gwinnet Medical Center - Lawrenceville, Athens Regional Medical Center and Wellstar Cobb Hospitalists.

Model 4. Mobile Clinics

Historically, in Georgia and the southeast, mobile clinics and home visitation programs have been effective at reaching populations and improving outcomes for women living in shortage areas. There are several existing programs in Georgia that focus primarily on maternal and infant health in the post-partum period (ex. Nurse Family Partnership, BabyLuv).

Appendix 4: Interview Guides

Obstetric Provider Interview Guide

Georgia Maternal Infant Health Research Group

Objective 3B – Target Population:

OB Providing Health Care Providers

Objective 3B

Explore gaps, barriers and opportunities in the availability of obstetrical care in rural Georgia.

Purpose Statement

What are the challenges that providers experience while providing obstetric care to their patients? What are their suggestions for improvement in areas of Georgia that are obstetrically underserved?

Target Population: OB Health Care Providers

1. Generalists/Family Practitioners: Must live and work in the target areas for the assessment, and must provide obstetric care to their patients.
2. Certified Nurse Midwives/Nurse Practitioners: Must live and work in the target areas for the assessment, and must provide obstetric care to their patients.
3. Maternal-Fetal Medicine Specialists: Must live and work in the target areas for the assessment, and must provide obstetric care to their patients.

INTRODUCTION

Good afternoon. My name is _____ and I am _____. I am doing a research project for a group called the Georgia Maternal and Infant Health Research Group and we are interested in learning about the care that practitioners provide, the challenges they face, and the suggestions that they have to better obstetric care and health outcomes in areas of Georgia that are underserved. We feel that by discussing these experiences with you, someone who has first hand experience, we can more fully understand how to provide suggestions on how to better obstetric care in areas of Georgia that are underserved. This interview will take between 45 to 60 minutes. I would like to let you know that your participation is voluntary and you can stop me at any time. Please do not hesitate to let me know if you feel uncomfortable answering any of the questions. I would like your permission to tape record this conversation so that I can come back to it later and have an accurate account of what we talked about. No one else will hear this recording aside from me. If I discuss this interview with anyone else your name will be omitted from the records. If you would like, you can choose an alias for the purpose of confidentiality in the transcript.

Is it ok if I start the recorder now?

Before we get started do you have any questions for me?

WARM UP QUESTIONS

I am first going to ask you a bit about yourself and your practice.

1. Where are you originally from?
    a. (If different) What brought you to this area?
    b. (If different) Did you grow up in a rural area?
2. How do you like living and practicing in the area that you live now?
    a. (If living in the same) What is your reasoning for living in the same area/region that you grew up in?
3. Could you describe your medical school training to me?
    a. (If not stated) More specifically, did you do clinical rotations/focus on rural/shortage area medicine?
4. Can you walk me through typical day at work?
    a. What is your practice like?
    b. How many patients do you see in a day?
    c. What is your call schedule like?
5. Can you describe your level of satisfaction with your work schedule and your lifestyle outside of work?

GENERAL HEALTH CARE IN YOUR AREA

Now we are going to ask you about the healthcare system in your area, and your work experience within the healthcare system.

6. Could you give me more specifics about your patients that require obstetric care?
    a. Can you describe the typical women that you care for (age, working status, education level, how many children)?
    a. Specifics:
    b. What financing mechanisms do your patients use (Insurance payments/ reimbursement method)?
    c. Proportion of Medicaid/Medicare
7. Where do the majority of your patients live, in reference to where you practice?
    a. How far do they travel?
    b. How do your patients get to your office?
    c. Medicaid transport?
8. Can you describe your patient's education level about pregnancy and risk?
    d. Does your work schedule allow for prenatal education?
9. Do you provide obstetric care?
    a. Specifically: Delivery? Prenatal care?
    b. Proportion OB, GYN?
10. Could you describe your role in delivery once the patient starts labor to the actual delivery?
    a. Specifics:

i. Who is there throughout the labor and delivery?
ii. Who cares for the patient when she is in labor?
iii. Who delivers the patient?

11. How do you feel about the obstetric facilities and technology that are available to you?
    a. Are there any improvements that you would like to see in the facilities/technology that would better obstetric care in your service?
12. Describe the challenges that you face on a daily basis in providing obstetric care.
13. Are there aspects of your job that make it easier to provide obstetric care to your patients?
14. How does malpractice insurance affect your practice?
15. Do you know any colleagues that have stopped doing obstetrical care in your area?
    a. Can you describe the circumstances that lead them to make this decision?
        i. Have they moved away?
        ii. Retired early?
        iii. Continue to practice but not practice obstetric (just GYN)
16. What model of obstetric care would **you**, personally, like to see in rural/shortage areas of Georgia?
    a. How do you feel about Telemedicine?
17. How do you see the role of **non-MD providers** (CNMs/NPs/PAs) changing in the future in providing obstetric care to shortage areas of Georgia?
18. How would it help if a nursing school in your area began a training program for CNMs?

CLOSING QUESTIONS

Now I would like to ask you a few more general questions before we finish the interview.

19. For those residents and new NPs/CNMs who are entering your area, what do you think their challenges will be?
20. Do you think they will stay in underserved OB areas of Georgia?
21. How could we ***recruit*** more practitioners to practice in underserved OB areas of Georgia?
    a. How do you feel about loan reimbursement programs (either Federal or Georgia funded)?

Are there any additional comments that you would like to make in regards to reducing the gaps and barriers, and expanding the opportunities for obstetric care in rural Georgia?

Thank you so much for your time and your opinions, all of us at GMIHRG appreciate everything that you have shared with us.

Hospital Administrator Interview Guide

Georgia Maternal Infant Health Research Group

Objective 3B – Target Population: Hospital Administrators

Objective

Explore gaps, barriers and opportunities in the availability of obstetrical care in rural Georgia.

Purpose Statement

To understand the role of hospital administrators (specifically working with labor and delivery units) in the Maternal Care System in rural Georgia, how the shortage of clinical providers affects their work, and comments and/or suggestions on alternative models of care.

Target Population: Hospital Administrators

A labor and delivery (L&D) unit just recently closed in Burke County, which increased the surrounding shortage area, so we are particularly interested in that hospital. Administrators in varying positions will be contacted, depending on what services the hospital provides. The goal is to talk with L&D nurse managers, maternity services directors, and/or someone in another role whose hospital does not have an L&D unit, for a total of four participants.

Recruitment Strategy: Existing connections provided through GMIHRG will be most useful for this population, and snowball recruitment will be essential.

INTRODUCTION

Introduction: Thank you so much for being here today! My name is Erika and, I am working with a group called the Georgia Maternal and Infant Health Research Group. We are exploring the gaps, barriers, and opportunities in the availability of obstetric care in rural Georgia. We would like to learn from your first-hand experience about the role of hospital administrators in maternal health care, especially those working with labor and delivery units,. The interview will take between 45 and 60 minutes, but please know that your participation is voluntary and you can stop me at any time. Don't hesitate to let me know if you feel uncomfortable answering any of the questions. I would like your permission to tape record this conversation so that I can come back to it later and have an accurate account of what we talked about. No one else will hear this recording – just me. If I discuss this interview with anyone else your name will be omitted from the records.

Would you like to suggest a code name for when I transcribe our conversation?

Is it ok if I start the recorder now?
I have a list of topics I would like to discuss but please feel free to bring up anything else that you think is relevant or important for me to know. Before we get started do you have any questions for me?
Okay, let's get started.

PERSONAL AND PROFESSIONAL BACKGROUND

I'm going to start with some short questions about your background.

1. Where you are from originally?
   Probe: (If rural) Did it influence you wanting to live/work here?
2. How many years have you lived here?
3. Can you describe your professional background, including where you went to school (name, state?) and what degree(s) you possess?
4. What do you like most about living/working here?
5. What do you feel are the biggest challenges in working/living here?

CURRENT POSITION

Now I'm going to ask you some questions about how you see your role in providing perinatal care.

6. What is your current position?
   a. How long have you had that position?
7. Tell me a little bit about your hospital and the types of services it provides.
   a. (if the hospital has an L&D unit) How many deliveries occurred in your hospital in the last calendar year?
   b. What is the annual cost of having a labor and delivery unit at your hospital? (cost of structure/equipment, maintenance, professional staff, support staff)
   c. How wide of an area does your hospital serve for OB care?
   d. (if the hospital does not have an L&D unit)How far is the closest hospital with an L&D unit?
8. Can you walk me through a typical workday for you as it relates to the L&D unit? (Meetings, paperwork, working with board members, etc.)
   a. Depends on their position: If you were to draw a pie chart of your responsibilities, what percentage would you say you spend working with the labor and delivery unit?

GAPS AND BARRIERS

I would now like to know a little about your patients, and the gaps and barriers that you face in providing services to them.

9. Can you describe your obstetric patient population? Demographics of women in the catchment area?
   a. (Age, race/ethnicity, documented/undocumented, and payment sources: Medicaid, private insurance, cash, etc.)
10. Do you think your hospital's patients have equal access to prenatal care?
    a. (if unequal) What do you think are the main barriers for women in this area to receiving prenatal care?

11. Does your hospital allow family practitioners to deliver? If not, why? Would you consider it?
    a. What about laborists/OB hospitalists?
    b. And certified nurse midwives?
12. How do you see the role of non-MD practitioners (CNMS, NP's, PA's) changing in the future to provide OB care to your patients?
13. (if they have an L&D unit)What benefits do you see that having an L&D unit brings to your hospital?
    a. What about the burdens? Are there any ongoing struggles? (Probes: recruiting MDs, anesthesia, Medicaid reimbursement problems)
    b. What is the turnover for your OBs? Programs in place to retain physicians?
    c. Do you your colleagues have different perceptions? Can you explain? Give examples?
14. Does your hospital face any limitations due to its location, resources, patient population, etc.?
    a. Does your hospital employ locum tenens? (contracted, temporary physicians)
    b. Are malpractice costs covered for local OBs and FPs (if applicable)?
15. In terms of financial constraints, how has Medicaid reimbursement affected the operation of your L&D unit?
    a. Do you deliver emergency Medicaid patients? Do they receive prenatal care?
    b. Do you get paid for these deliveries?
16. Which of the CMOs do you contract with? How would you compare them with traditional Medicaid?
    a. Do you have any recommendations about how to improve the support you receive from Medicaid or the CMOs?
17. Some hospitals in rural Georgia have closed or are considering closing their L&D units. Have those types of conversations happened here? Is this something that concerns you?
    a. What are you thinking about doing? Can you discuss these ideas openly?
18. What makes your unit sustainable? Are there steps you have taken to ensure that your unit stays open? What are they? What is being done here to address these issues?

OPPORTUNITIES

I'm now going to move on to future opportunities for expanding and stabilizing patient services.

19. What kind of improvements would you like to see in your hospital, specifically regarding obstetric care?
    a. What would help you ensure the sustainability of your L&D unit?
20. I am going to describe to you a few models from other Southern states that have been suggested to improve obstetric care in Georgia, and I would like to hear your thoughts about each of the proposed models of care. After I give you the details, would you mind giving me any thoughts you have about each of them? You can think of concerns/pros/cons as they relate to your particular position, or just general reactions.

21. What are your perceptions of this model? What do you perceive are the benefits of this model? What are your concerns with this model?
22. Would this model be able to coordinate and function in conjunction with or parallel to your hospital?

CLOSING QUESTIONS

I am now going to ask you a few last general questions before we finish the interview.

23. Are there any additional comments that you would like to make in regards to reducing the gaps and barriers to care in non-metropolitan Georgia?
24. Or opportunities for expanding care?

Thank you so much for taking the time out of your busy schedule to meet with me today. Do you have any final questions before we wrap up?

Maternal and Child Health (MCH) Officials Interview Guide

Georgia Maternal Infant Health Research Group

Objective 3B – Target Population:

Maternal and Child Health (MCH) Officials

Objective 3B

Explore gaps, barriers and opportunities in the availability of obstetrical care in rural Georgia.

Purpose Statement

Interviews with MCH leaders will provide a broad historical context of the changes in Department of Public Health (DPH) programs, administration, funding, and policies that will better inform the experiences and perspective of other key stakeholders (such as practitioners and hospital administrators).

Target Population: Care Management Organizations/Medicaid Officials

I will interview a total of 12 Maternal and Child Health (MCH) officials from DPH. Interviewees should have an understanding of the funding, administration, and state/local policies that affect obstetric care throughout the entire state of Georgia or in one of the four target areas.

INTRODUCTION

My name is Ayanna Williams and I am going to be a second-year Masters of Public Health student in the fall. I am working with a group called the Georgia Maternal and Infant Health Research Group and we are interested in exploring the gaps, barriers, and opportunities in the availability of obstetric care. We feel that by discussing these topics with you, someone who has first-hand experience, we can more fully understand the role Maternal and Child Health officials play in the delivery and administration of obstetric care in Georgia. For the purposes of our study, we are focusing on pre-natal services and deliveries. This interview will take between 45 to 60 minutes. I would like to let you know that your participation is voluntary and you can stop me at any point. Please do not hesitate to let me know if you feel uncomfortable answering any of the questions. I would like your permission to tape record this conversation so that I can come back to it later and have an accurate account of what we talked about. No one else will hear this recording – just me. If I discuss this interview with anyone else your name will be omitted from the records. Is it ok if I start the recorder now?

I have a list of topics I would like to discuss but please feel free to bring up anything else that you think is relevant or important for me to know. Let's begin by talking about and your professional background.

WARM UP QUESTIONS

1. Tell me about your current job
    a. PROBE: Division
    b. PROBE: Length of employment
2. Why did you choose to work with the Department of Public Health?
3. In what ways do you work with obstetric care services or programs?
    a. PROBE: Interaction with OB practitioners and/or hospital administrators
    b. PROBE: What OB services/ programs do you provide or work with?
    c. PROBE: What OB services/programs do you NOT provide or work with?
4. What percentage of your typical work week is spent on obstetric programs/services?
5. When working on obstetric programs or services, do you collaborate with other divisions of the Department of Public Health?
    a. PROBE: If so, what divisions do you work with and in what capacity?
    b. PROBE: Do you work with any of the following divisions: women's health, family planning, Medicaid, WIC, Babies First, etc.

FUNDING

Now, I would like to talk about funding sources for obstetric care.

6. What are primary source(s) of funding for obstetric care, by program, at the state/district/local level?
    a. PROBE: Examples: MCH Block Grants, Title X family planning, Title XX Medicaid, state funds, district/local funds
    b. PROBE: Percentage of funding from each source?
    c. PROBE: Do health districts vary in use of funds for OB services? How?
7. How are MCH funds distributed?
    a. PROBE: Where does it go?
    b. PROBE: How is the allocation of resources decided?
    c. PROBE: Are there obstacles to getting the funding where it needs to go?
8. Is the funding sufficient for the current Medicaid population?
    a. PROBE: For which Medicaid programs?
9. How has funding changed in the past 10 years, from before CMOs to after CMOs.
    a. PROBE: By program?
10. How do you anticipate the level of funding for obstetric services in Georgia will change in the coming years?
    a. PROBE: Why?

GAPS/CHALLENGES

Now I would like to discuss potential gaps (shortage areas) in obstetric care and the causes of those gaps.

11. What are the gaps (shortage areas) in obstetric services?
    a. PROBE: What are major causes of these gaps?
12. What interventions have been instated (past or present) to address these gaps in obstetric care?
    a. PROBE: Rural vs. metropolitan areas?
    b. PROBE: Utilization of obstetric services?
    c. PROBE: Variation in types of obstetric services?
    d. PROBE: Types of practitioners?
    e. PROBE: Location of services?
13. What area(s) of obstetric care are most successfully implemented and utilized? Why do you think this is so?
14. Do you feel that the Medicaid CMOS have helped DPH improve services?
    a. PROBE: Are they cost efficient?
    b. PROBE: Are they cost efficient?
15. Are there ways the Medicaid CMOs could do a better job administering obstetric care services and programs?

OPPORTUNITIES

I would like to ask you a few questions about opportunities for improving obstetric care and obstetric programs in Georgia.

16. Are there any new/recently instated laws, regulations, or programs that will allow DPH to improve obstetric care in Georgia?
    a. PROBE: National laws/policies?
    b. PROBE: State laws/policies?
    c. PROBE: Local laws/policies?
17. What funding sources are available for the DPH to acquire new funding for obstetric care services/strategies in Georgia?
    a. PROBE: National laws/policies?
    b. PROBE: State laws/policies?
    c. PROBE: Local laws/policies?
18. How will the full implementation of the Affordable Care Act (in January 2014) affect obstetric care in GA?
    a. PROBE: What do you think will be the anticipated effects of Medicaid Expansion (if implemented)
19. Who are the state's obstetric service collaborators/advocates outside of the government?
    a. PROBE: For example, March of Dimes, Babies First, professional associations (GOGs, public health, neonatologists, Planned Parenthood)

I am going to describe to you a few models from other Southern states that have been suggested to improve obstetric care in Georgia, and I would like to hear your thoughts about each of the

proposed models of care. After I give you the details, would you mind giving me any thoughts you have about each of them? You can think of concerns/pros/cons as they relate to your particular position, or just general reactions.

CLOSING QUESTIONS

Now I would like to close with a few general questions before we finish.

1. Of the topics we discussed today, where would you recommend focusing funding and interventions to improve obstetric care in Georgia?
2. Do you have any final questions for me or any information you would like to share that is relevant to our project?

Thank you for your time. GMIHRG will spend the next few months collecting data from a variety of providers, administrators, and mothers. Once our report is complete, we would be more than happy to send you a copy of our findings. If you have any questions between now and then (or would like to add additional information, between now and August 1) please feel free to contact me.

Appendix 5: Code book

	Code Name	Code Definition	What the code is not…
1	Model 1	Anything referring directly to "model 1"which involves a **rotating schedule** of visiting Obstetrician to service shortage areas of GA. For example, a physician would spend 3-4 days each month providing obstetrical services in different clinics.	
2	Locum Tenens	Anything referring to a "**locum tenens",** whereby a physician temporarily substitutes for regular local physicians. Either using this specific term or describing the concept.	
3	Model 2	Anything referring directly to "model 2" which is a **tiered model of care whereby** RN/CNM are the lower tier who see low risk patients, OB's on the middle level see medium risk/all antepartum patients, and MFM's at the top level see high risk patients	This model is not just about the different types of practitioners that work within obstetrics. Its more about them working together to solve the problems.
4	Model 3	Anything referring to "model 3" that is the **hospitalist model** whereby pregnant women are seen by a regular obstetrician for pre/post natal care only, and see a separate hospitalists who delivers their baby.	
5	Model 4	Anything referring to "model 4" which is a **mobile clinic** available in communities for example at a DPH venue or satellite clinic location.	This is not home visitations where the provider goes into the patients home to provide care
6	Home visitations	Anything referring to Ob's, CNM's, or NP's providing care to patient's **in their homes**	This is not the same as mobile clinics where the provider goes into the community to provide care a few times a month
7	Telemedicine	Anything referring to the use of **video calls** to provide patients with OB care. This could be between patient and provider or between providers for coordination of care.	This is not the use of text messaging or phone calling in order to coordinate care.
8	Telephones	Anything referring to the use of **phone calls or text messages** to coordinate care of a patient. This could be from provider (or CMO) to patient or from provider to provider for coordination of care.	This is not the same as telemedicine where providers use video calls to talk to patients.

9	Global Fee	Anything referring specifically to the **"global fee"**, the **method** that CMO's use to reimburse Ob providers for their services.	This is **not referring to the specific dollar amount** that physicians are reimbursed from Medicaid, but instead referring to the method of reimbursements.
10	Medicaid reimbursement	Anything referring to the **actual cost, dollar amount,** that Medicaid (or CMO's) reimburse providers for seeing Medicaid patients	This is not referring to the method of reimbursement called the "global fee" this is instead talking about specific dollar amounts.
11	Not just pins on a map	Anything referring to a **barrier that patients face** when trying to see any type of OB provider.	
12	Wrap around services	Anything referring to **"inter-conception care or wrap around services"** which are the medical care provided to women **between pregnancies**. This can include family planning, treatment for diabetes and hypertension, etc.	This is not referring to postpartum care.
13	Uninsured	Anything referring the **uninsured population**. For example, how providers either do or do not give care to people who are completely uninsured. This also includes payments for these services and how they are reimbursed for these services (either through self-pay or emergency Medicaid). This is also referring to the uninsured not receiving prenatal care. This can also include the number of uninsured patients that providers give care to.	
14	Finances	Anything referring to **money**, including discussion of insurance/Medicaid reimbursements, the cost of keeping facilities open (including purchasing technology), etc.	
15	CMO high risk	Anything referring to how **CMO's assess the risk of patients**. Including, what they look for, how they document it, how it is different from clinical risk, etc.	This is not referring to clinical assessment of high-risk patients.
16	High risk patients	Anything referring to how **practitioners assess the risk of a patient and high-risk patients in general**. Including, what practitioners look for, how they document it, how it is different from CMO risk assessment, the risk factors for pregnant women, increase	This is not referring to the CMO's assessment of high-risk patients

		in high risk patients over time, etc.	
17	Feet on the street	Anything referring to **being in the community and building rapport with patients**. This could include collaborating with the community to provide OB care, catering services to the needs of the community, building rapport with the patients, etc.	
18	Quality Incentive	Anything referring to **incentivizing the quality of OB care.** This is specifically referring to the fact that some providers keep patients in high-risk situations because they are either trying to keep the reimbursement or because it would be hard to transfer them. This code aims to understand why some providers keep patients in these higher-risk situations, and to understand how/the need to incentivize the quality (in this case the transfer of high-risk patients to appropriate hospitals).	
19	Transportation	Anything referring to **transportation**. This could include how patients get to appointments (including walking), Medicaid vans, the use of EMT services, the quality of the EMT services, etc.	This does not include the distance that people are away from the providers. This is solely discussing transportation methods.
20	Distance	Anything referring to **how far patients are away from providers**. This includes the time it takes for them to get to providers, how geography plays a part in the distance, how different models improve/don't improve distance to providers, etc.	This does not include transportation
21	Recruitment Need	Anything referring to the **need to recruit more providers** (OB's, Nurses, CNM, MFM) into shortage areas. This also includes discussions of the difficulty to find and retain skilled providers.	This does not include strategies for recruiting new providers.
22	Recruitment Strategies	Anything referring to **methods to recruit obstetric providers**. This is including OB's, nurses, MFM's, etc.	This is not the difficulty getting and retaining trained OB providers. This is specifically only talking about the method to recruit them.
23	Center closures	Anything referring to **OB center closures**. This includes hospitals, labor and delivery	This is not including physicians who have stopped providing OB

		units, clinics, etc.	services.
24	Solo provider	Anything reference to working in a **solo practice** (does not have to include the term solo provider), but it includes any struggles or benefits of providing care with a small work force.	
25	Group practice	Anything reference to working in a **group practice** including discussion of how many people are in the group practice (including nurses and midwives), the struggles or benefits of working with a larger provider population, etc.	
26	Provider Stop	Anything referring to **OB providers ceasing to provide OB care** to patients. This could be because they retired, couldn't keep up the payments, etc.	This is not referring to center closures, which is where facilities have stopped providing OB care.
27	DPH role	Anything referring to the **role that the Department of Public Health plays in providing OB services**. (NOTE: many people refer to DHP as "public health")	
28	Limitations of mid-level providers	Anything referring to the **limitations that mid-level provider's has when seeing patients**. This could include lack of ability to work autonomously, inability to write prescriptions, etc.	This does not refer to the perceptions of the quality of care given by different providers.
29	Perceptions of quality	Anything referring to the **perceptions that people have of working with different providers.** This could include views of mid-level providing high quality care, mistrust of certain types of providers, trust of certain providers, inherent differences between providers, etc.	This is not referring to the limitations that mid-level provider's have when providing care.
30	Collaboration	Anything referring to the need for Ob's, CNM's, and MFM's to work together to provide care for patients.	
31	Effects of Payer Population	Anything referring to the **effects of the OB payer population**. This is means anything referring to the balance between uninsured, Medicaid, and privately insured patients. This code is especially looking at the effects that certain payers might on provider's ability to provide care.	

32	Patient Demographics	Anything referring to the **demographics of patient population** that the participant works with. This could be number of people uninsured, on Medicaid or with private insurance, education level, location in which they live.	This is not referring to the education that patients have about their pregnancy.
33	Medicaid Insurance	Anything referring to specifically to **patients who are on Medicaid**.	
34	Private insurance	Anything referring specifically to **patients who have private insurance**	
35	Technology	Anything referring to **medical technology** that providers use with patients. This could include the items they use or it could be the need for additional technology. Medical technology includes: ultrasound machines, fetal heart monitors, electronic medical records, etc.	
36	Malpractice insurance	Anything referring to **"malpractice insurance"** which could include the cost, who provides it (hospital, group practice, self, etc.), how it impacts providers doing their job, etc.	
37	Pregnancy Education	Anything referring to **"pregnancy education"** which is either the **patient's level of education about their pregnancy** or the providers discussing who educates the patients, the need to educate patients, how much time it takes to educate patients, etc.	This is not referring to patients overall education level. This is specifically referring to patient's education about pregnancy.
38	Post-partum Care	Anything referring to **"post-partum care"** which includes the services provided, who provides them, the non-compliance of patients, continuation of breastfeeding, etc.	This is not the same as inter-conception care.
39	Hospital Admin Impact	Anything referring how the **hospital regulations influence care**. This could include changes in hospitals over time, how they support/don't support providers, who they allow to provide care, etc.	
40	CMO	Anything referring to how **CMO's specifically influence care**. This could include changes over time since CMO's began, how they have changed the system, benefits, challenges of having them, etc.	This is not discussing Medicaid or Medicaid reimbursements
41	Provider work	Anything referring to the **specifics of the providers work** including work hours, call	

		schedule, group/solo provider, time spent on OB/GYN, etc.	
42	Referral	Anything referring to the specialist and referrals to specialists.	

Appendix 6: Georgia's Hypothesized Maternal Care System