Considerations for Implementing a Hospital-Based Staff Model for Doula Support Services

by

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Abstract

Doulas provide emotional, physical, and educational support to persons experiencing pregnancy. Doula support during the prenatal, intrapartum, and postpartum period has been shown to have a positive effect on health outcomes for birthing persons. This type of support has been identified as a priority to limit the use of clinical interventions during labor and birth and improve the patient experience. Despite the growing public interest to incorporate doulas into the interprofessional care team, patients primarily secure doula services through private contracts with agencies or individual contractors. The benefits of doula support may not be fully realized due to the lack of access for many birthing people and the disjointed interaction between doulas and the healthcare system.

The goal of this current state assessment and supplemental case study is to illustrate the potential synergies created when doula support services and hospitals integrate to align patient care. An analysis of the literature describes the historical use of doula services, documented impacts on patient outcomes, current reimbursement considerations, and the recent evolution in their relationship with healthcare systems. The case study describes a hospital-based staff model at UPMC Magee-Womens hospital that highlights administrative considerations for integrating doula support with the maternity care team. This case describes year one of the program and the operational design, as well as considerations for the program's future sustainability. The adoption of hospital-based doula programs can impact public health by potentially disrupting traditional obstetric service models.

Table of Contents

List of Tables

List of Figures

Preface

Many studies cited in this essay refer to pregnant women or birthing women using the gender binary system. The language used to describe the findings of these studies reflects the chosen language of the individual authors of that work. However, not all people who are pregnant or people giving birth identify as “women” or “mothers”. The analysis performed in this master’s essay and the highlighted case is not meant to be exclusive to a patient population that is comprised of female-identifying pregnant and birthing people.

1.0 Introduction

The maternal mortality ratio (MMR) and the severe maternal morbidity ratio (SMM) are indicative of a grave threat to birthing persons and families in the United States (U.S.). The maternal mortality ratio is the number of maternal deaths per 100,000 live births. This rate in the U.S. has increased in recent years from 15 in 2010 (Douthard, Martin, Chapple-McGruder, Langer, & Chang, 2021) to 23.8 per 100,000 in 2020 (Hoyert, 2022). This increase is not solely due to the Covid-19 pandemic, as the rate in 2019 was 20.1 per 100,000 (Hoyert, 2022). More alarming perhaps is how the U.S. compares to similar high-income countries. In 2017, the MMR rate for the U.S. was nineteen. In comparison, Australia's MMR was six and The United Kingdom's MMR was seven (Douthard, Martin, Chapple-McGruder, Langer, & Chang, 2021). Severe maternal morbidity, unintended outcomes that result in short or long-term health consequences, have also been increasing in the U.S. despite their preventable nature (Severe maternal morbidity: screening and review. Obstetric Care Consensus No. 5., 2016). The most recent CDC data demonstrates the number of SMM cases per 10,000 delivery hospitalizations grew by twenty percent from 1993 to 2014, after excluding blood transfusions (Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, 2021). Observed differences in maternal mortality are complicated by racial and ethnic factors (National Center for Chronic Disease Prevention and Health Promotion, 2020). In 2020, the mortality rate for non-Hispanic Black women was 2.9 times higher than non-Hispanic White women with 55.3 deaths per 100,000 live births (Hoyert, 2022). Healthcare providers, insurers, and legislators are increasingly turning to non-clinical solutions in an attempt to curb these trends.

In recent years, the body of evidence has grown that doulas as an intervention help to bridge the gap between providers and patients, positively impact clinical outcomes, and improve the patient experience. A doula is a nonclinical support person "who provides continuous physical, emotional and informational support to a mother before, during and shortly after childbirth to help her achieve the healthiest, most satisfying experience possible" (DONA International, n.d.). The concept of non-clinical support during labor is not new. In America, the social childbirth philosophy dominated until the 1930s when the medical-illness model began to emerge (McCool & Simeone, 2002). In the present, many birthing persons expect to give birth in a hospital setting with some form of medical intervention. To better interact with the increasingly complex healthcare system in the U.S. that sometimes fails to meet patient needs, birthing persons have turned to doulas to navigate through this space. Hospitals, healthcare organizations, and community organizations have also begun to explore doula services as a means to improve the patient experience and the health of birthing persons and infants in the community.

The University of Pittsburgh Medical Center (UPMC) is an integrated care delivery and finance system headquartered in Pittsburgh, Pennsylvania that operates as a not-for-profit institution. The system is comprised of forty hospitals and generated revenue of $23 billion in 2021 (UPMC, 2021). Within the larger system, fifteen of the hospitals act as primary, secondary, and tertiary obstetric hospitals. The UPMC Magee-Womens Hospital (Magee) in Pittsburgh, Pennsylvania provides highly specialized obstetric and women's health services and acts as the flagship for the women's health service line. A report from 2019 indicated that that the MMR for Black woman in Pittsburgh was higher than the same measure in 97% of similar cities. This occurred despite evidence that Black pregnant persons started prenatal care sooner and had fewer cases of gestational diabetes and hypertension than similar cities (Howell, Goodkind, Jacobs,

Branson, & Miller, 2019). In November 2020, Magee initiated a hospital-based staff model for doula services to address these known disparities in maternal outcomes in their service area. This builds upon larger national trends exploring the effect of birth support services in improving maternal and infant outcomes by both the payer and provider arms.

2.0 Literature Review

2.1 The Role of Doulas in Addressing Disparities in Maternal and Infant Health

Extensive literature highlights the clinical benefits of doula support during the prenatal, delivery, and postpartum period. This includes clinical outcomes for both the mother and the infant. During delivery, the continuous emotional and physical labor support provided by the doula plays a key role in the differences observed. Continuous labor support by doulas has been shown to positively impact cesarean birth rates, instrumental vaginal birth rates, the need for oxytocin augmentation, and the duration of labor (Gruber, Cupito, & Dobson, 2013). A study of twenty-seven randomized controlled trials analyzed the impact of continuous labor support and found evidence that women were less likely to have negative experiences with birth, labor pain medications, epidurals, and low five-minute Apgar scores. Of note, larger effects were observed when the woman was supported by someone in a doula role versus hospital staff (National Partnership for Women & Families, 2018). Outside of the labor period, doulas can also influence outcomes. Evidence finds that doula support is tied to timely lactogenesis and higher breastfeeding prevalence at six weeks (Nommsen-Rivers, Mastergeorge, Hansen, Cullum, & Dewey, 2009). A home visiting program that combined educators and doulas also demonstrated higher breastfeeding initiation rates (Hans, Edwards, & Zhang, 2018). This small sample of studies highlights some of the evidence of doulas influencing clinical outcomes.

Addressing the pervasive disparities observed in maternal mortality and maternal morbidity rates in the U.S. requires changing more than the clinical components. Doulas are uniquely valuable because they can influence the way pregnant persons interact with the healthcare

system and the way the healthcare system interacts with the patient in turn. There is a an inherent and wholly human desire to have a good birth. Yet, socio-demographic factors and complex historical factors related to exclusion from the maternity care team impede this from becoming reality (Kozhimannil & Hardeman, 2015). Kozhimannil et al. in 2017 described a small study (n=14) focused on racially/ethnically diverse, low-income pregnant women that evaluates the role that doulas play in a "Good Birth". Characteristics of a "Good Birth" were described by Dr. Anne Lyerly as agency, personal security, connectedness, respect and knowledge. The focus group associated doula care with the ability to influence all five of these characteristics (Kozhimannil, Vogelsang, & Prasad, 2016). Many definitions exist to describe a good birth that focus on clinical metrics and a healthy mom and baby. The definition developed by Lyerly, however, is just a single example of a definition that goes beyond that traditional view rooted in clinical care. This ability to help a person have a good birth beyond the clinical definition is of interest to providers, insurers, policy makers, and most importantly, pregnant persons.

Doulas also witness the patient-provider interactions over the course of care during pregnancy. Disrespect and abuse in birth occur in low, middle, and high resource countries, particularly for low-income women, racial/ethnic minorities, and immigrants (Morton, Henley, Seacrist, & Roth, 2018). In a survey of 1435 doulas and 967 nurses, Morton et al. quantified the types of disrespect/abuse witnessed by these two professions. Approximately 66% of doulas and 65.1% of nurses reported witnessing a care provider engage in a procedure without fully informed consent occasionally/often. The question was raised if the practitioner had witnessed a provider deliver a service that was against the explicit wishes of the woman, and 21.7 percent of doulas reported occasionally/often. In contrast, only 13.2% of nurses reported the same. The same difference arises when asked if they witnessed more procedures because of race and ethnic

background (Morton, Henley, Seacrist, & Roth, 2018). Doulas frequently benefit from being present during the entire birth and for portions pre- and post-delivery. This presents a unique opportunity to debrief with the patient after they process what occurred, good or bad.

2.2 Access to Doula Services for Pregnant Persons

Although the evidence demonstrates the influence on clinical and experience-based outcomes, access to doula services is inadequate. These barriers can be organized into two categories: cost and geography. One study examined survey results from women who gave birth in the United States in 2012 and only 6% reported using doula services (Attanasio, Jou, Joarnt, Johnson, & Gjerdingen, 2014). The same study by Attanasio et al. found that 39.3% of uninsured birthing persons and 32.6% of women with public coverage who had not had a doula reported wanting doula support. Private doula contracts generally run between $700 and $1,500 for services rendered with fees typically paid for by consumers out-of-pocket (Kozhimannil & Hardeman, 2015). These costs can be prohibitive to potential clients who fall into the uninsured category or fall into the financial bracket that is eligible for public coverage. Cost also impacts the number of trained doulas available. As of 2021, DONA International, a well-established organization that provides training, estimated the total costs of training and certification to be $700-$1100 for their program (DONA International, 2021). Childbirth International offers a range between $680 and $745 (Childbirth International, 2022). These amounts are not trivial for persons with significant socioeconomic concerns, and they act as a weighty barrier to entry for this industry. These cost-driven forces contribute to keeping the overall number of doulas low.

There is no direct way to assess the level of doula services available in any area or specific areas; however, access to general maternity care serves as a proxy measure. A March of Dimes Report from 2020 collated census data from 2010 and HRSA Area Health Resource files from 2017 that indicated 34.9% of women live in a maternity care desert and 11.4% have low access to maternity care. Maternity care deserts are "counties in which access to maternity health care services is limited or absent, either through lack of services or barriers to a woman's ability to access that care" (March of Dimes, 2020). From this data, it is possible to speculate that the availability of doulas follows a similar trend. Pregnant persons must rely on traveling to access maternity services and potentially doula care. These factors would reduce access significantly for rural pregnant and birthing persons. The emergence of maternity applications like Seven Starlings, which combines licensed therapists and doula-led peer groups, could lead to improved access for rural patients who desire doula support. The limitations caused by geography are being pushed as technology evolves and new virtual doula services emerge.

2.3 Provider Perceptions of Doulas

Although the public has placed an increased emphasis on the use of doula services, members of the maternity care team may hold conflicting opinions. Some team members hold opinions that encourage doula participation as part of the care team, while other opinions lead the team members to treat the doula like an obstacle. One investigation found that clinicians and providers view doulas as helpful because the clinician can outsource tasks they do not have time to complete (Torres, 2014). Another study described positive aspects such as support for limited English patients, sharing ideas, educating patients, and forming partnerships. However, the same

study discussed adversarial interactions related to clinical decision making. Nurses and other providers expressed that these adversarial interactions occurred often when the birth plan had to be altered. Additionally, physicians sometimes perceived challenges to their authority or felt like "the enemy" (Neel, Goldman, Marte, Bello, & Nothnagle, 2019). These perceived challenges may have arisen as part of helping the patient to advocate for themselves, while others may be linked to operating beyond the traditional scope of practice. A small cohort of doulas cited having to combat the adverse effects on provider-doula relationships caused by "rogue doulas" acting outside of their scope and making medical decisions (Adams & Curtin-Bowen, 2021). It is important to acknowledge that this scope may be blurred not only by the doula but also the medical team. Especially, if considering the commentary provided on being able to outsource tasks. The blurring of lines makes it easier for them to be crossed by both parties.

2.4 Potential Costs Savings for Payers from Doula Services

There is potential for patient access to doula services to lower overall healthcare system spending through decreasing cesarean sections, repeat cesareans, epidurals, complications, chronic conditions, and improving breastfeeding rates (Strauss, Sakala, & Corry, 2016). Strauss et al. explored potential cost savings using data from 2013, with a focus on reducing cesarean births. In 2013, one in three births was by cesarean section delivery, with an average cost that was 50% more than a vaginal birth. Assuming doula services could decrease cesarean sections by 28% based on other studies, there was the potential to save $1.74 billion for private insurers and $659 million for Medicaid (Strauss, Sakala, & Corry, 2016). However, it is important to note that cesarean sections are sometimes medically necessary, so realizing the full 28% may be difficult depending on the

case mix. In another theoretical model with doulas supporting a woman's first birth, researchers proposed cost-savings up to $884 and cost-effectiveness up to $1360 per doula. This resulted from reductions in cesarean births, maternal deaths, uterine ruptures, hysterectomies and increased QALYs (Greiner, et al., 2019). The concept of doulas lowering costs remains tangible because of their ability to influence clinical outcomes. This will need to be closely examined by interested parties to see where the cost of the doula potentially exceeds the savings.

2.5 Reimbursement for Doula Support Services

Despite the demonstrated improvements in clinical outcomes and patient experience scores, particularly for those experiencing the adverse social determinants of health, doula programs continue to struggle to receive adequate and sustainable funding. In 2016, HealthConnect One commissioned a study of existing doula programs by a bipartisan policy firm, TRP Health Policy. This analyzed data available between July 2016 and January 2017. This study focused on community-based doula programs and providing recommendations for policy and sustainability. A total of ninety-eight doula organizations were surveyed based on the criteria that they focused on decreasing health disparities and improving outcomes for high-risk populations (HealthConnect One, 2017).

Coverage for maternity care services includes self-pay, private insurance, military-sponsored coverage, and Medicaid. The type of insurance (or lack of) that the patient reports heavily impact reimbursement strategies that the doula groups may choose to pursue from a policy perspective. In this survey, 96% of programs served persons who were insured by Medicaid, 64% of programs served uninsured clients, 36% worked with privately insured clients, and 35% dealt

with self-payers (HealthConnect One, 2017). However, when looking at the funding streams for these groups, there is disconnect. The current source of funding was private foundation grants for 70% of the organizations. Government grants and patient contributions were equal at 25%. Medicaid funding was less of 5% of current funding (HealthConnect One, 2017). This is not unexpected, because in 2016 and 2017 the only states that offered Medicaid reimbursements for doulas were Minnesota and Oregon (Hart, 2021). The sustainability of these community-based programs remains in question unless significant shifts in reimbursement structures occur or partnerships form. Funding for programs like these is precarious in the best of circumstances. One survey respondent stated, "'The greatest disappointment for our program was that the funding was cut after 2 years in spite of outstanding service and outcomes statistics'" (HealthConnect One, 2017). This unfortunately may be a reality for many other programs attempting to offer not only community doula services, but doula support in general.

2.5.1 Private Contracts with Doulas

Doulas have historically existed on the periphery of traditional clinical maternity care services as paraprofessionals. According to Ahlemyer & Mahon, though some doulas are employed or contracted by healthcare providers, many doulas elect to practice independently, form small groups, or join larger doula collaboratives (Ahlemeyer & Mahon, 2015). It is difficult to assess the number of doulas operating independently in the United States because there is no general registry. However, Bey et al. reports that private-pay doulas generally proceed post-training to create a small business and operate under a private practice model (Bey, Brill, Porchia-Albert, Gradilla, & Strauss, 2019). These doulas offer a selection of services related to continuous support during labor, prenatal support, postpartum support, and more to their clients. The doula

determines the pricing for these services and manages the collection. Doulas who want to help clients with limited funds face the challenge of serving the people who need the help versus sustaining their own livelihoods.

2.5.2 Private Insurance

A review of the literature presents a mixed picture of whether private insurers will reimburse for doula services. Various insurance providers with different plan offerings and contracts become part of an even more complex web when state mandates and legislation are considered. In 2016, Strauss et al. recommended that private insurance plans should include doula support services as a covered benefit based on demonstrated clinical outcomes and as an innovative tool to improve maternal and infant health (Strauss, Sakala, & Corry, 2016). Some plans may offer a doula benefit or reimburse members directly for the service if they pay out of pocket (Chen, 2018). For instance, CVS Health agreed to provide a doula benefit up to $1,200 per year (CVS Health, 2021). Chen identifies barriers for direct reimbursement to doulas because traditionally insurers set parameters for what services can be billed and the requirements for submitting those requests. These revolve around specific authorized services. For example, if doula services were mandated as preventative service by the Department of Health Resources and Services Administration, then private insurers would have to allow the service without cost sharing (Chen, 2018). No additional conversation around that topic has arisen, which indicates that in the near future, coverage will be at the discretion of the individual insurers.

2.5.3 Medicaid Coverage for Doula Support Services

Medicaid is responsible for covering maternity-related costs for a large portion of pregnant persons. In 2018, 43% of all births were paid for by Medicaid, while 49.1% were paid for by private coverage. According to the Medicaid and CHIP Payment Access Commission, the shares of this 43% varies by state with some Medicaid coverage counting for more than half of the births (MACPAC, 2020). According to the Kaiser Family Foundation, all states are required to provide coverage for services related to pregnancy through Medicaid to women with incomes up to 133% of the federal poverty level because these are classified as essential services. All states must also cover women up to sixty days postpartum. States have significant authority to define what counts as maternity benefits unless they expanded Medicaid eligibility under the Affordable Care Act. In those cases, specific services are defined by the United Sates Preventative Services Task Force (Gifford, Walls, Ranji, Salganicoff, & Gomez, 2017). This discretion to define covered maternity care services under Medicaid means that individual states have the authority to decide whether they will include doula support services.

2.5.3.1 State Plan Amendments

States that do want to offer reimbursement for doula services under Medicaid may pursue a state plan amendment. Medicaid state plans are an agreement between the state and federal government that outline how the Medicaid program is administered, the eligibility, the services included, the mechanism for reimbursement, and administrative activities that are relevant. These agreements are amendable for permissible reasons, including policy changes, operational changes, program changes, corrections, or informational updates (Centers for Medicare & Medicaid Services, n.d.) For a state considering Medicaid coverage for doula services, these amendments

offer a feasible route. State plans can cover services through the revised CMS preventative services rule (2334-F) (Bakst, Moore, George, & Shea, 2020). In 2013, CMS published this final rule which revised CFR 440.130(c). This rule adjusted statutory language that allows preventative care to be provided by practitioners "other than physicians or other licensed professionals" if these services are recommended by those entities and at state option (Mann, 2013).

The first states to reimburse for doula services elected to use this mechanism, including Minnesota, Oregon, and New Jersey (Hart, 2021). States who utilize this revision to drive state plan amendments face a heavy administrative burden. The state must outline the practitioner's qualifications, education, a registration program if needed, and credentials (Bakst, Moore, George, & Shea, 2020). Each of these elements requires comprehensive data analysis, stakeholder input, and policy review. The tactical details must be developed for how to implement each element. The frontloaded burden may act as a barrier for states, but ultimately it also helps to develop critical infrastructure early.

2.5.3.2 Alternative Methods

Although three states pursued a state plan amendment, one state investigated an alternative pathway to include doula services in benefits. In 2018, Florida's Agency for Healthcare Administration (AHCA) offered an optional expanded benefit for enrollees in managed care plans to access doula services. According to the Doula Medicaid Project, many managed care plans did elect to offer doula services. Plans had discretion over the implementation, credentialing, competencies, and design. The reimbursement rates are negotiated with each plan and therefore vary (Hart, 2021). As of December 2021, reimbursements ranged from $450 to $1110 (Robles-Fradet, 2021). Plans also define who is eligible for benefits within the larger umbrella of Medicaid managed care. For example, some plans offer doula services only to members whose pregnancies

meet high-risk criteria (Robles-Fradet, 2021). The qualifications to fall into a high-risk category are determined by the organization. The lack of standardization surrounding these criteria limits access for birthing persons. This pathway potentially removes barriers for states that are concerned with developing the necessary infrastructure and planning to pass a state amendment. In exchange, the state gives up a portion of the oversight to the independent plans. While this reduces temporal issues, it introduces variability in the type of services offered, the competency expectations for the doulas, and the population that has access to the services.

Other states also pursued alternative pathways, but they are not currently reimbursing for doula services. The National Academy for State and Health Policy describes the methodology of Indiana and Nebraska. Nebraska allowed Medicaid contracted managed care organizations to provide the option for doula services as a value-added service (Platt & Kaye, 2020). Only one MCO enrolled, and the program ended. Legislation was introduced for reimbursement, but that stalled (Hart, 2021). The Indiana State Department of Health created a separate grant from Title V MCH Block Grant funds and awarded them to a doula program. This program then provided services to women enrolled in Medicaid (Platt & Kaye, 2020). After this grant expired, Indiana passed legislation that would allow for a state amendment, but the funding was stripped and services continue to be grant funded (Hart, 2021).

These examples provide some evidence that states choosing to start with an alternative route end up moving toward state plan amendments. However, there is not enough evidence for the trend to be generalizable. The trend also does not account for any state specific circumstances that may have influenced the impact of these programs during the period where they were active. It will be important to analyze outcomes in Florida and watch their next steps to see if this alternative would be worthy of consideration by other states.

2.5.3.3 States with Medicaid Reimbursement for Doula Services

Individual states administer Medicaid; therefore, variable reimbursement policies and implementation plans are enacted based on state politics and priorities. The Doula Medicaid Project, run by the National Health Law Program, closely tracks this movement. As of fall 2021, four states are actively reimbursing doulas for their services through Medicaid: Florida, Minnesota, New Jersey, and Oregon. These states incentivize a certain number of visits through a global payment for a set number of postpartum, prenatal, and labor support encounters. For example, Minnesota will reimburse a combination of six prenatal and postpartum visits and a labor and delivery encounter. In contrast, Oregon reimburses for two prenatal visits, two postpartum, and labor and delivery services (Hart, 2021). States who pursued this route later seem to have analyzed actions taken by the other states when determining the reimbursement rates for prenatal and postpartum visits. Minnesota reimburses $47 per encounter, Oregon at $50 (Hart, 2021), and New Jersey at approximately $50 based on $16.62 per fifteen minutes (New Jersey, 2021). Debate has raged over the values assigned to these services and the delivery mechanisms for these payments. As of March 2022, seven other states are in the process of reimbursing for doula services. These states have the advantage of learning from the first movers as they work to implement the reimbursement mechanisms and operational details.

2.5.3.4 Current Progress Toward Medicaid Reimbursement in Pennsylvania

In March 2021, Representative Morgan Cephas (D-Philadelphia) introduced House Bill 1175 (HB 1175) to provide medical assistance reimbursement for doula services. The bill proposes the following:

> The department shall provide reimbursement to a certified doula for providing childbirth education and support services, including physical and emotional

> support, to an individual covered under the medical assistance program during pregnancy, labor and delivery and up to one year postpartum. (H.B. 1175, 2021)

The bill outlines the expectation for doulas to be certified by approved organizations and the maintenance of a state doula registry. It also described additional education, travel reimbursement, and criminal background checks. The bill also leaves open the possibility of pursing a state plan amendment if necessary. A critical part of the bill is the creation of a Doula Advisory board. This body is responsible for approving certification programs, reporting to the department, setting reimbursement rates for the medical assistance population, and providing general advisement (HB 1175, 2021). During 2021, this advisory board transitioned into a nonprofit organization called the PA Doula Commission. They have set five priorities for 2022: fair reimbursement, state certifications and standards, developing a provider type, furthering recognition of the profession, and establishing a board (Jewish Healthcare Foundation, 2021). At the present time the bill remains in committee, while the organization works on these action items.

This bill benefits from the lessons learned from its predecessors in other states. Reimbursement rates and reimbursement for travel and mileage have been contentious issues in other states with reimbursement schemes. In this state, the PA Doula Commission heads that discussion with a wide representation of members from both the state and local doula organizations. This could result in reimbursement proposals that more closely align with those expected by the local doula workforce. Local doulas and the state also hold joint responsibility for determining acceptable certifications. Though DONA is the most widely recognized certification body, it does not necessarily represent the values of all doulas. Offering a broader range of choices allows doulas and organizations to pursue certifications with different content, price points, and

delivery methods. The integrated advisory board places the right people in the same room at the same time to drive change.

2.5.4 The Need for Improved Reimbursement for Doulas

Like other workers in the United States, paraprofessionals who offer doula support expect to earn a living wage. Doulas may be asked to weigh passion for the work against the expected compensation from state and private payers. Early data from a national survey in 2003 (n=626) indicated that 96.2% of doulas strongly agreed or agreed that their work was rewarding on a "personal or emotional level". This stands in stark contrast to the 37.5% who strongly agreed or agreed that their work was rewarding on a financial level (Lantz, Low, Varkey, & Watson, 2005). The same study reported that the mean gross income was $3,645 with nearly 50% of respondents making less than $1,000 per year. An additional paid job provided supplemental income for 71% of respondents (Lantz, Low, Varkey, & Watson, 2005). The study does not delineate the source of the funds. This data is also limited by the time that has elapsed since the study was released, however, doulas continue to cite financial issues as an issue even when receiving Medicaid reimbursements.

In 2019, in response to New York's doula pilot, several doula groups generated a report that lists adjusting reimbursement rates to provide the opportunity to earn a living wage (Bey, Brill, Porchia-Albert, Gradilla, & Strauss, 2019). Oregon reimbursed labor and delivery services at a rate $75 which later had to be adjusted to $150 (Hart, 2021). Doulas in Oregon reporting quitting over reimbursement issues and general dissatisfaction with the rates (Nguyen, 2021). Structural issues with reimbursements exacerbate the difficulty of doulas trying to earn a living wage. It

becomes difficult to maintain a sustainable workforce and observe the positive effects of doula services when reimbursement concerns cause constant entry and exit into the industry.

2.5.5 TRICARE Coverage for Doula Support Services – A Five Year Pilot

The Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), also known as TRICARE, is the health delivery component of the United States Department of Defense. The Assistant Secretary of Defense for Health Affairs under the Department of Defense (DoD) announced in October 2021 that TRICARE would authorize three new provider types: certified labor doulas, certified lactation consultants, and certified lactation counselors. This five-year pilot that began in January 2022 aims to evaluate the effect of these services on maternal and fetal outcomes and the feasibility of their continued coverage (F.R. 6006, 2021). The inspiration for this change began as part of the Childbirth and Breastfeeding Support Demonstration. Historically, TRICARE cited the non-clinical nature of doulas services as the main reason they could not be authorized Tricare providers (TRICARE West, 2022).

2.5.5.1 Purpose of the Demonstration

The reason for this dramatic shift in reimbursement strategy is described in the notice filed with the Federal Register. As part of the National Defense Authorization Act for Fiscal Year 2021, Congress instructed the Secretary of Defense to carry out the initiative. The report cited as a key factor concerns about the US maternal mortality rate being higher than similar high-income countries and continuing to steadily rise. Additionally, increasing maternal morbidity related to postpartum bleeding, high blood pressure, infection, and mental health disorders acted as a driver. Internal analysis by the DoD from 2009 to 2018 indicated that for their population the pregnancy

related mortality ratio and the infant mortality rate was statistically significantly below national benchmarks (F.R. 6006, 2021). Despite superior rates in the Tricare population, the initiative was implemented starting in January 2022. The continued advancement of the program perhaps reflects a decreasing tolerance for any infant or maternal death for constituents and by proxy their elected representatives. As access to care has expanded following the Affordable Care Act in 2014 and medical science continues to advance, the U.S. should expect to witness a decrease in maternal and infant mortality rates. Congress' directive to the Department of Defense reflects that expectation and creates a unique pilot to observe the potential impact of doula support services on those rates and other metrics.

2.5.5.2 Doulas as an Intervention

The DoD selected doula services as an intervention because of their potential to impact both the pregnancy period and the three-month period after delivery, known as the "fourth trimester" (F.R. 6006, 2021). Tikkanen et al. reported in November 2020 that 52% of pregnancy related deaths in the US occur during the fourth trimester (Tikkanen, Gunja, FitzGerald, & Zephyrin, 2020). The justification for doulas services specifically relates to their ability to engage with the patient during the prenatal, delivery, and postpartum period. The DoD commissioned an independent technology assessment to evaluate the potential impact of doulas services. From this assessment the areas that could potentially be positively impacted were "shortened duration of labor, decreased epidural anesthesia, decreased anxiety during labor, decreased rate of stillbirths and low Apgar score in infants, and increased maternal feelings of coping well with labor and feeling that the birth experience was good" (F.R. 6006, 2021). This highlights the desired impact not only on clinical outcomes, but on the patient experience during birth.

2.5.5.3 Delivery Model

Labor support services by doulas will be available to TRICARE Prime and TRICARE Select members at a gestational age ≥ 20 weeks receiving care at managed care support contractors at locations in the United States. Overseas eligibility for the same group will begin in 2025. Beneficiaries will be automatically enrolled when they access at least one covered service, and their claim will be tagged with a unique processing code (F.R. 6006, 2021). Understanding of doula support services varies and it is unclear what happens if a member should choose not to engage with the doula whenever they outreach. DoD analyzed 150 doula training and certification programs to come up with a list of acceptable doula education organizations and requirements for the doula to be considered a contractor under TRICARE. The service coverage will include a combination of six total antepartum and postpartum encounters at $46/visit, as well as one encounter of continuous labor support at $690 (F.R. 6006, 2021). A contracted doula would therefore be eligible for $966/patient assuming all seven encounters are completed. It is unclear what the expected case load per contractor would be and if the contractor would be able to engage in private contracts with clients simultaneously. It is also unclear whether the doula would participate in a warm hand-off or refer to lactation support specialists under the same benefit.

2.5.5.4 Considerations Following the Pilot

This five-year pilot will provide key insights on the quantifiable effects of doula support services on a portion of the 9.6 million (TRICARE, 2021) members of this population. It is difficult to anticipate how many of the eligible members experiencing a pregnancy in this period may elect to utilize these services or if the distribution of doulas across the service area will amount to equal access for participants. For members overseas, it may be difficult to find a doula certified by one of the acceptable certification organizations listed in the plan. Additionally, adjustment may need

to be made based on the unique TRICARE population if this data is used by other parties. Despite these restrictions, it is reasonable to suspect that private insurers and state Medicaid programs will look to the results as evidence for potentially modifying their own reimbursement structures. Providers may also look to the impact on outcomes when considering whether to deploy resources to build doula support service capabilities.

2.6 Community-Based and Hospital-based Doula Programs

2.6.1 Community-based Doula Programs

While some doulas provide support only during a specific period of pregnancy, community-based doulas typically engage with the client in the prenatal, delivery, and postpartum period. Non-clinical organizations usually employ the doulas or hire them as contractors. DONA International described community-based doulas as doulas who work with younger, low-income pregnant persons with little support. They develop a relationship with the client and then connect them to other community programs (Earls, 2014). HealthConnect One outlines five essential components for their community-based programs: employing members of the target community, having doula support from early pregnancy up to the first months postpartum, using a diverse team approach with other community stakeholders, facilitating experiential learning, and providing salaries, supervision and support for the doulas (HealthConnect One, n.d.). Overall, community-based doulas provide support services over the continuum of pregnancy that are integrated with existing community resources.

The structure of community-based programs, including the population they serve, and the funding they receive, varies widely. In HealthConnect One's survey of nintety-eight community doula organizations, 80% were independent nonprofits. The other 20% were located within other organizations. The majority (81%) offered antepartum, labor, and postpartum support whereas the minority offered labor support only (HealthConnect One, 2017). The size of these programs ranged from one to twenty-one doulas with an average of ten. Programs served a surprisingly large range of families, between ten and three hundred with an average of twenty to sixty (HealthConnect One, 2017). This range may reflect different models of delivery and varying resources deployed per participant. It is not outlined in this report how often each program chooses to meet with participants and any complementary services they may perform. Operational differences would account for the dramatic range seen above in combination with the number of doulas.

2.6.2 Hospital-based Doula Programs

Hospital-based doula programs are less common than community-based programs. This may be due the poor perceptions of doulas by medical providers (Neel, Goldman, Marte, Bello, & Nothnagle, 2019), funding limitations (HealthConnect One, 2017), and the additional administrative burden the hospital takes on. The concern also exists that patients with historical mistrust of the medical system may react with skepticism to the established partnership between the hospital and the doula advocating for them. A small study with White, Hispanic, and Black women was conducted that indicated low-income women and racial/ethnic minorities may be likely to utilize hospital-based doula programs (Attanasio, et al., 2021). These forces seem diametrically opposed at first glance, but there is opportunity to reconcile the relationship to help patients achieve a "Good Birth".

Volunteer programs are operating at several facilities in the United States including Dignity Health Methodist Hospital, Sutter Health, UNC Medical Center, Heywood Hospital, and others. Sutter Davis released a case study reporting that doulas provided labor and postpartum support for 23% of the 1,500 births a year. Doula services are provided free to patients, at Sutter Davis, and the hospital trains the doulas in core competencies they identify (Hartman, n.d.). Generally, hospitals will provide training and expect a time commitment in return. There would also be an administrative cost for program oversight and training.

Instead of utilizing volunteers, some hospitals integrate doulas into the care team as contractors. Swedish Hospital in Seattle, Washington offers doula services to its patients through a doula program with contracted doulas. According to their 2020 report, doulas attended 645 births. The program is run as a non-profit, where the 25% of the revenue from self-pay clients feeds back into the program for administrative costs and to provide free care for those who meet a certain threshold. Swedish Hospital reports that 99% of their nurses and providers would want to work with a doula again, and that 98% of providers and staff feel that a doula had a positive impact on the patient experience (Swedish, 2020). The enhanced inter-collaboration that a volunteer model or contractor models facilitates can help increase the volume of patients served, the patient's experience with the healthcare system, and provider and staff perceptions of doula support.

Hospitals also have invested in integrating doulas into the maternity care team as staff, which can truly be considered a hospital-based model. It is reasonable to speculate that this type of affiliation could inspire feelings of mistrust in the target population due to perceived loyalties to the hospital rather than the client. Several programs have navigated these patient reservations successfully to run hospital-based doulas services with staff doulas. A survey of hospital-based doula programs from 2014 indicated that there were eight staff model programs out of thirty-four

that met the survey criteria (Beets, 2014). In 2020, The Birth Sisters published their service model for hospital-based doula support. This includes 1-8 prenatal visits from twenty-four weeks onward, continuous labor support, and 1-4 visits during the postpartum period. The program offers doula services to low-income women who meet a set of predetermined criteria due to all program funding being philanthropic. Boston Medical Center pays the doulas an hourly wage as employees. The cost of the program is approximately $1000 per mother and baby couplet. Service and gaps are tracked through a Microsoft Access Database (Mottl-Santiago, Herr, Rodrigues, Walker, & Feinberg, 2020). Other programs sustain themselves through a set fee for doula services. Valley Health System in new Jersey maintains a team of doulas and charges $750.00 for the service according to their website (Valley Health System, n.d.). Hospitals may design unique models that work within the context of their environment, both financial and clinical.

As public interest in doulas increases for their ability to influence outcomes and the patient experience, hospitals will likely consider the costs and benefits of the different models based on the context of their environment, the resources available to them, patient demand, and the goals for the maternity and infant teams. Models that rely on contracting or employment benefit from the natural relationship created between the doula and the organization that can be leveraged to integrate them into the care team. Organizations considering this model must keep in mind the additional risk and administrative burden associated with the doula's relationship to the organization. The state that governs the organization can also introduce added complexity by requiring certifications, reporting, and certain billing procedures that effect current and future doulas. The case study introduced below will explore an example of a hospital-based doula program at a women's hospital within an integrated delivery and financing system that navigated through these considerations between January and December 2021.

3.0 Case Study at UPMC Magee-Womens Hospital

3.1 Purpose of the Case Study

This case study examines the hospital-based staff model for doula support services at UPMC Magee-Womens Hospital from January 2021 to December 2021. Considerations raised in the literature review including operational design, analyzing the impact of doula support on clinical outcomes, and funding stream opportunities relevant to organizations in Pennsylvania will be discussed within the context of this program's unique environment. This environment is shaped by the program residing within a large, urban women's health specialty hospital that is part of an integrated delivery and finance system. Patients were in different stages of the prenatal and postpartum periods during this time; therefore, any patient information will be solely based on patients who delivered or had a concrete end to the pregnancy episode by December 2021.

3.2 UPMC Magee-Womens Hospital

UPMC Magee-Womens Hospital (Magee), in Pittsburgh, Pennsylvania, is recognized as a National Center of Excellence in Women's Health and a Magnet Hospital for excellence in nursing (UPMC, 2022). Magee serves as the central administrative body for policies and practices related to obstetrics and gynecology in the UPMC system, guiding the other hospitals on best practice within the boundaries of their own unique circumstances. The hospital maintains a close relationship with its sister organization, Magee-Womens Research Institute (MWRI), which

functions as the research and grant management arm. This crucial relationship drives innovative care through the careful management of federal and state dollars. The value of this work toward improving the lives of women, infants, and pregnant persons is highlighted by the department of obstetrics and gynecology receiving the highest amounts of National Institutes of Health funding of this type in the nation (Beigi, 2021). The philosophy of care that this hospital is aligned with lends itself to flexibility and change to meet the needs of each unique patient. The Womancare Model of Care centralizes the patient as the driving force of their care and recognizes the individual circumstances of their life. This model of care revolves around eight core principles: quality, access, respect, education, research, empowerment, integrated care, and advocacy (UPMC, 2022). This patient-centered philosophy and the unique research-oriented environment created a space where a doula model of patient support could thrive.

3.2.1 Operating with an Integrated Delivery and Financing System

The United States' healthcare system is frequently described as fragmented due to healthcare providers and organizations working within their own silos rather than working to facilitate collaborative care. Systems that integrate delivery and finance components seek to enhance the level of collaboration to improve the health of patients and control costs. UPMC describes this model as a way to: align incentives, share knowledge, respond to new needs quickly, connect with providers, and deploy and study new interventions and programs (UPMC Health Plan, n.d.). Integration succeeds when deliberate intentions unify the services towards a common goal. One area where this integration is critical is the complex period before, during, and after pregnancy.

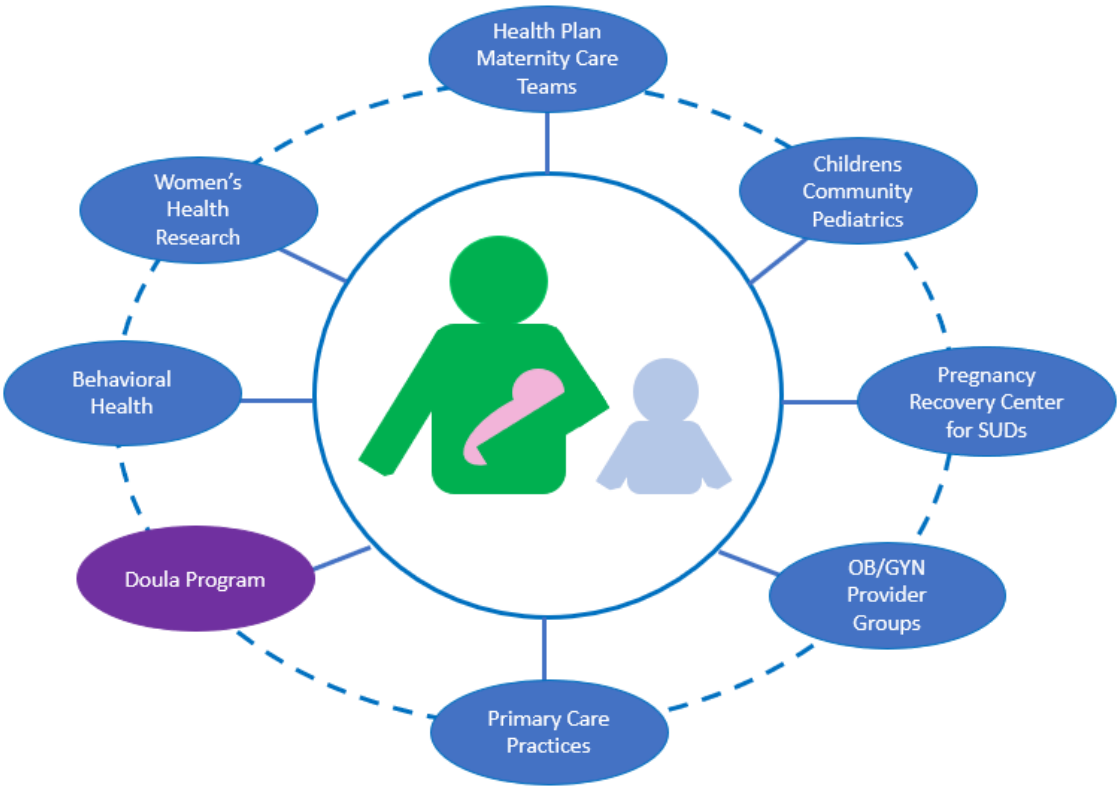


Figure 1. Services Related to a Pregnancy Episode in an IDFS

The Magee Doula Program is the newest piece of an essential suite of services that provide critical care from preconception through childhood. Birthing patients do not only interact with the medical system in a single event only when they deliver at a hospital. Care, resources, and education are necessary prior to, between, and after a pregnancy. These interactions in turn impact the health of the birthing person and the baby. The doula program provides vital support for patients who may struggle to interact and understand the purpose of the different components of the system and how they work to collectively influence their health. Doulas offer distinct value in an IDFS by directly connecting patients to different resources from the early pregnancy period to early infancy. This doula program follows birthing persons from the first trimester up to 84 days

post-delivery, which allows a unique trust to form during this period as the patient moves between resources.

3.3 Historical Use of Doula Support Service for the UPMC Oakland Campus

The Birth Circle Doulas of UPMC Magee-Womens origins began in 2004 as part of the East Liberty Family Health Center (East Liberty), a federally qualified health center (FQHC). The affiliation with East Liberty presented unique opportunities to coordinate medical, behavioral, and social resources for patients. The funding mechanism during this period is not well documented, but it believed that a portion of funds came from private contracts with the UPMC Health Plan. East Liberty organized doula training sessions to facilitate the necessary workforce volume. Doulas were able to see patients in East Liberty, perform home visits, and could provide labor support at any of the local hospitals.

In 2012, the doula group transitioned to UPMC. This transition moved the independent group into the structure of the larger integrated delivery and finance system. UPMC chose to house the doulas under the Department of Family Medicine (Family Medicine). This placement created strategic advantages because Family Medicine provides prenatal/postpartum services and has processes in place with birthing hospitals to manage deliveries. In this space, the doulas were managed by several lead doulas and a program director who reported to Family Medicine leadership. The program procured funding through private donations, grants, and UPMC Health Plan reimbursements. Leadership in the Women's Health Service Line recognized the value of this service and believed that value could be amplified if it was housed under the Director of Women's

Health Operations and the Director of Women's Health Services at UPMC Magee-Womens. The transition officially occurred in November 2020.

3.4 Operational Design

The organizational structure of The Birth Circle Doulas of UPMC Magee-Womens is illustrated in Figure 2. The program relies on three tiers of leadership comprised of experienced

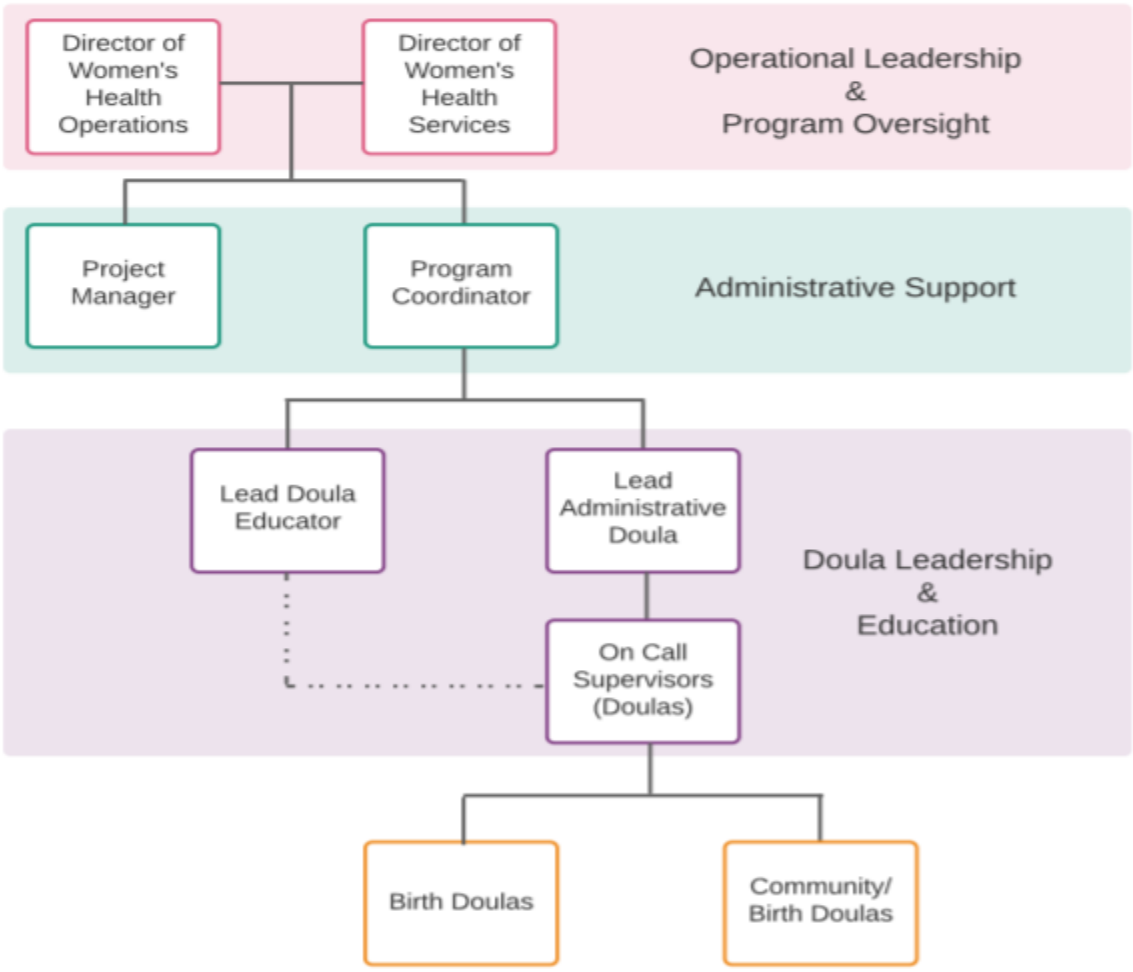


Figure 2. Organizational Structure

community doulas and hospital administration from the Women's Health Service Line. The Director of Women's Health Services and the Director of Women's Health Operations jointly lead the program in addition to their individual departments. Placing the program under the Women's Health Service line rather than a physician group provides a strategic advantage because the range of both departments affects activities across the hospital and the system, rather than a specific patient population. The program hired administrative support to improve data management, oversee the daily tactical details, and lead process improvement projects. The administrative load was a dissatisfier to the doulas, and these roles alleviated a portion of that. The practice component is led by a dyad of doulas with over twenty years of industry experience combined. More information about specific responsibilities is in Appendix B – Appendix Table 1. Both the role of the doula and the administrator is critical to ensure operational processes are functional and the quality of care for patients is optimal.

Currently, the team is comprised of twenty-five doulas who are assigned roles to provide care during either the delivery phase or during the prenatal and postpartum period. Community doulas are assigned a caseload of clients to follow them through the prenatal and postpartum

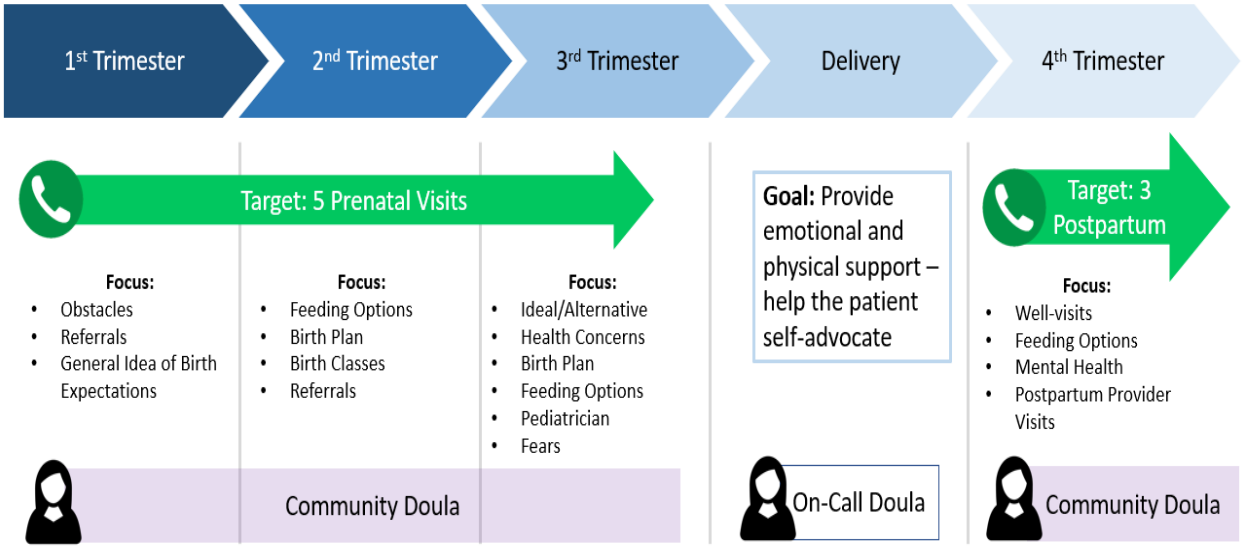


Figure 3. Model of Care by Trimester

period. The ideal visit cadence involves five prenatal visits, continuous support during labor and delivery, and three postpartum visits (Figure 3.) Doulas tailor their interactions to the needs of the patient but cover a core set of topics in each trimester. Casual doulas and community doulas are expected to provide coverage for births through an on-call delivery system. The on-call delivery system is communicated to patients during program registration to set the expectation that their community doula may not be the doula who supports them during labor. Community and casual doulas sign up for four, twelve hour on-call shifts per month. Doulas self-elect to take additional shifts depending on their capacity. The on-call doula then provides a warm transfer back to the community doula to resume postpartum care.

The Magee doula program also offers support for patients who were not previously engaged with the program who present at Magee for an expected birth based on availability. The service is provided free of charge and the doula will offer the patient postpartum support from a

community doula. These “urgent” requests may be transfers from The Midwife Center, patients with unique circumstances, limited/no English patients, or upon patient request. Nurses and

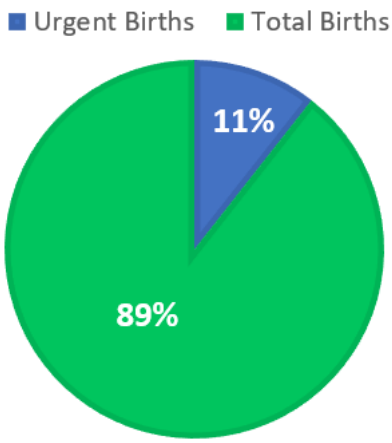


Figure 4. Percent of Urgent Deliveries at Magee Out of Total Deliveries (n=414) (2021)

providers play a critical role in identifying patients who may need additional support during labor. The relationship between the providers and the doulas and the increased availability of doula staff caused the number of call for support at urgent births to rise dramatically from one in 2020 to forty-nine in 2022. The forty-nine urgent births represent approximately 11.8% of the total deliveries supported by the doula program in 2021 (n=414), assuming that all urgent births were attached to a patient record in the EHR (Figure 4).

The program employees two full-time flex employees, two full time doulas, three part-time doulas, one moonlighter, and nineteen casual doulas. A moonlighter in this case is classified as an employee who is assigned hours in another department. Benefits are provided through UPMC for full-time staff and offered at discounted rates for part-time employees to purchase. Doula are paid an hourly rate ranging from $16.86 to $26.55 based on previous experience. Doulas are paid a set amount for labor support based on the duration spent supporting the labor. Moving employees

from a casual position to a part-time or full-time position is a mechanism to help support program sustainability. The access to benefits and increased hours incentivizes employees to remain with UPMC rather than switching professions or leaving to work with another employer.

This operational model results in estimated costs of $705.25 on average per patient. The estimate takes the total spending for the year 2021 and divides it by the 414 patients. This number is not precise, but it offers a glimpse into the spending. For 2022, the doula program at Magee engaged financial analysts from the Women's Health Service Line to determine a more precise amount spent per patient. This will involve removing training costs, education, and other hours not directly related to patient care.

3.4.1 Orientation and Ongoing Education

Upon hire, doulas are trained in core competencies, documentation in the EHR, AIDET + the Promise from the Studer Group, and service recovery. Doulas attend up to three mentored births with an experienced doula to help familiarize them with Magee and hospital policies. The experienced doula mentor completes a mandatory competency assessment and shares that feedback with the new doula, the program coordinator, and the directors. The educational lead doula and the administrative lead doula organize additional support to address areas of opportunity in practice. Doulas are then released to the general schedule to select their four monthly shifts. To ensure continued support, each doula is assigned an experienced "buddy" who acts as a sounding board for ideas, questions, and concerns. These processes prepare doulas to navigate births and provide the foundation for potential future work in a community doula role.

Building an efficient doula program requires deep-rooted connections with providers, community groups, staff, and other resources within the system. To enhance the connections

between the doulas and these parties, educational events are hosted to address knowledge gaps for doulas and introduce existing or new services. This education session occurs monthly, and doulas must either attend the meetings in-person, virtually, or review the materials within two weeks. Select historical topics have covered trauma-informed care, a physician question and answer session, OB specific medical issues, anesthesiology and epidurals, and community resources for immigrants. All time spent on educational activities is paid at the regular rate.

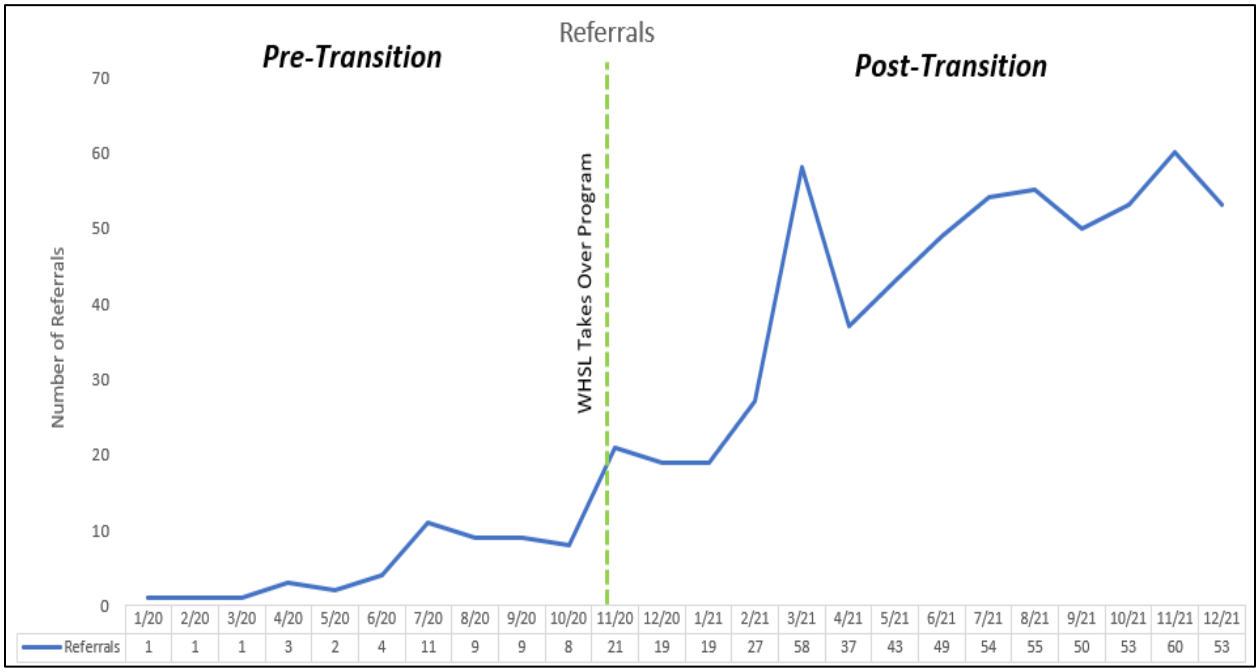


Figure 5. Referrals by Month for the Magee Doula Program

3.4.2 Eligibility and Referrals

Any patient planning to deliver at UPMC Magee-Womens is eligible for doulas services at no cost. These patients receive OB care from over eighty clinical practices that deliver at Magee. The program does not exclude patients based on the insurance provider or insurance status. While

the program resided under the Department of Family Medicine, the program was only available for patient with the UPMC Medicaid product. Patients may either self-refer or be referred by community partners, providers, or staff. The program hosted meet and greet public events for provider groups, distributed programmatic brochures, and redesigned the UPMC doula specific website (Appendix A). Posters with the faces and names of all of the doulas were also placed in breakrooms for staff in the hospital-based outpatient clinics, the newborn intensive care units (NICU), and the delivery units. These efforts towards enhanced communication with patients and providers contributed to an increase of referrals, with an average forty-seven per month in 2021, compared to an average of seven per month in 2020 (Figure 5). For 2022, the program will continue to analyze referrals per month to assess program capacity and trends that emerge due to the seasonality of births.

3.5 Data Collection Methods and Program Analysis

3.5.1 Clinical Analytics & The Electronic Health Records

Future funding, quality improvement initiatives, and stakeholder buy-in depend on the ability to collect and appropriately display data about changes in targeted outcomes. Historically, the doula program relied on paper documentation to capture and report interactions with clients. To share data with the UPMC Health Plan, doula leadership manually entered data into the claims-based record and care management system, HealthPlaNET. Maternity Care Managers at the Health Plan reviewed this information and could outreach with different support resources. Although these processes tied the doulas closely to the Health Plan, they did not facilitate strong bonds with

the clinical care team. Leadership identified the electronic health record as a critical way to tie the actions of the doulas and the other members of the maternity care team together.

To strengthen ties within the clinical setting, program leadership developed a set of SmartPhrases for prenatal, intrapartum, and postpartum visits. EPIC enables SmartPhrases which

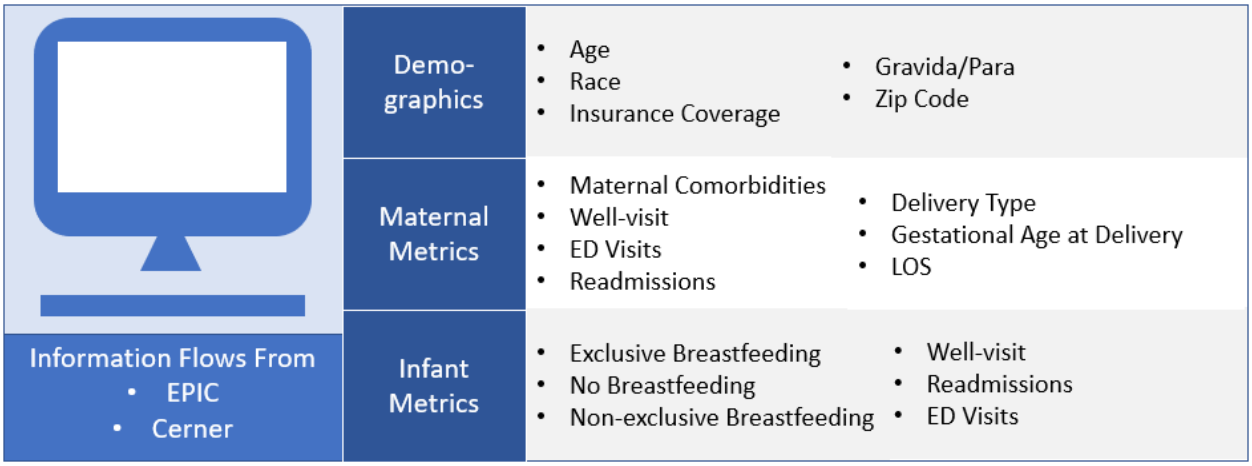


Figure 6. Clinical Analytics Capabilities

allows users to quickly insert templates that guide documentation (Jarou, et al., 2021). The use of SmartPhrases ensures a degree of standardization to help doulas and other members of the clinical care team orient to the notes quickly. SmartPhrases also act as digital tags so that the encounter can be linked to a patient and a doula. Enabling the program to generate operational reports and track utilization metrics. These tags also feed directly into larger clinical analytics platforms. The platform allows the program to isolate the patient population who received doula support, and ties demographic data, maternal metrics, and infant metrics to that group (Figure 6).

A limitation of this data is that the information must come from a discrete field in the electronic health record and is dependent on appropriate and accurate documentation by providers. The advantage of this system is that fewer resources are devoted to manual data analysis. The ease

of availability allows the program to identify improvement opportunities in real time and then act upon them. Indirectly, easy access to high quality data contributes to program sustainability efforts and helps to facilitate the case for more funding, more staffing, and program continuity.

Table 1. Racial & Ethnic Composition of the Doula Program versus Allegheny County Birth Demographics

Program Demographics (2021)			Allegheny County Birth Demographics (2018)		
Race/Ethnicity	n=	%	Race/Ethnicity	n=	%
White	183	44.2	White	8810	69.0
Black	168	40.6	Black	2565	20.0
Native	2	0.5	Asian/Pacific Islander	833	6.0
Asian	35	8.5	Multirace	321	3.0
Other/Declined	26	6.3	Hispanic	296	2.0
Total	**414**			12825	

3.5.2 Doula Patient Population Data

Demographic data for the program's patient population feeds from the electronic health records into the clinical analytics dashboards. There are two limitations to the data set; the race/ethnicity listed on the EHR does not always match with how the patient would self-describe because it is inputted by staff or providers, and Hispanic versus non-Hispanic is not notated. The racial and ethnic composition of the program provides relevant context when examining the impact on clinical outcomes and patient experience. The volume of White patients and Black patients is similar with 44.2% and 40.6%, respectively (Figure 2). Other groups represented a small portion of the total population. Most patients enrolled in the doula program reside are tagged with their residence in an Allegheny County zip code. As a comparison, birth demographics from Allegheny County in 2018 were pulled (Monaghan, 2018). For this case study, the UPMC categories were simplified to create a better comparison with the Birth Report. Only 20% of the births in Allegheny

County were attributed to Black mothers, yet 40.6% of the doula program participants identified as Black. Though this is a small sample size (n=414), the differences in the distribution may indicate the appeal of the program to members of certain races.

The program also collects data to make inferences about the level of affluence and resources available to patients based on where they reside. Patients enrolled in the doula program live in 117 unique zip codes with an average area deprivation (ADI) index score of 68.57. The Health Resources & Services Administration (HRSA) developed ADI to account for income, education, employment, and housing quality. The lower the ADI the more affluent the area (Columbia University, n.d.). The higher average ADI indicates that the social determinants of health, such as a lower education level, could negatively impact the health of the patient and the resources available to them during pregnancy. An average ADI of 68.57 indicates that patients may be more likely to experience issues such as housing insecurity, food insecurity and more that must be accounted for when developing their plan for during and after pregnancy.

3.5.3 Measuring Health Literacy and Experiences of Discrimination

During pregnancy, patients receive a plethora of resources and information either verbally, virtually, or in printed form. Patients must then make choices about the care they want to receive and the information they use to make those choices during pregnancy. The CDC defines health literacy as, “the degree to which individuals have the ability to find, understand, and use information and services to inform health-related decisions and actions for themselves and others” (CDC, 2021). A systemic review indicates that health literacy is connected to reproductive health knowledge on contraception, prenatal vitamin use, exclusive breastfeeding, fertility, STIs, and prenatal screenings (Kilfoyle, Vitko, O'Connor, & Cooper Bailey, 2016). The unique role doulas

fill as patient advocates may have an impact on patient reproductive health literacy. To examine if this program influenced health literacy, all patients beginning their engagement in year two of the program will be asked to participate in an assessment upon enrollment and then after the postpartum period is complete. The tool selected was the Rapid Assessment of Adult Literacy in Medicine (REALM). This assessment will be delivered using the secure Teams platform by the Program Coordinator and volunteers. The Program Coordinator will use REDcap analysis software to collect and analyze the data set.

To complement the healthy literacy evaluation, a tool was selected to measure self-reported experiences of racism. Structural racism exists in healthcare settings, and the birthing population is not free from that burden. The Experiences of Discrimination tool developed by Nancy Krieger was selected as a feasible tool to gather this data. This self-reporting tool was validated in a population of working class African American, Latino and white adults for public health research (Krieger, Smith, Naishadham, Hartman, & Barbeau, 2005). The Program Coordinator will ask a series of questions included in this assessment to the patient and then enter the results. The Krieger tool will be delivered in tandem with the REALM assessment at the beginning and end of the engagement using the Teams video platform and REDcap analysis software. Patients can decline and exit the assessment at any point. Data from the analysis will provide information on reporting experiences with racial discrimination prior to doula support and post-doula support. A limitation of this work is that it can only be delivered in English or Spanish at present.

3.5.4 Patient Satisfaction Surveys

Table 2. Survey Questions for Patients

#	Questions
1	How helpful was your birth doula to you and your partner or support person during your birthing experience?
2	How helpful were the number of calls and visits by your doula during your pregnancy in providing support and birth planning?
3	I would choose to have a doula in the future.
4	How well were your birth preferences and labor support options considered and offered by your birth doula?
5	How sensitive was your birth doula to your cultural beliefs?

Hospitals continually assess the patient experience due to the incentive structures tied to these results and because of growing consumer interest in their experience. These questions cover a wide range of topics. The doula program specifically wanted to investigate the interaction with the doula, the ability to help the patient self-advocate for their idea of a "Good Birth" and cultural sensitivity. The five questions developed are shown below (Table 2). A small sample was conducted in Q1 of 2021 (n=20) that showed favorable results; however, the statistical power is limited by the sample size and the considerable program changes that have occurred since that period. The survey will be offered on a voluntary basis at the end of the doula engagement by the Program Coordinator to assess quality improvement opportunities beginning in Q1 of 2022.

3.6 Funding Streams for the Magee Doula Program

The Magee doula program yields to the same sustainability concerns as community-based organizations. Depending on the level of leadership buy-in and the demand for the service,

hospital-based programs may be afforded some degree of flexibility in the short term to navigate through periods of low productivity or funding delays. The Birth Circle Doulas of UPMC Magee-Womens were awarded one year of funding by the Richard King Mellon Foundation in 2021 to improve access to doula support services. This was part of a set of three grants meant to address infant and maternal health that totaled approximately one million dollars, collectively. This allowed for significant investments during the early stages of the program. The Birth Circle also benefits from being a part of an integrated delivery and financing system. The Health Plan recognizes the potential clinical and cost-saving benefits associated with doula services. This leads to private reimbursement agreements for a certain suite of services for patients with UPMC for You insurance.

3.6.1 What Medicaid Reimbursement Progress in Pennsylvania Means for the Magee Doula Program

Hospitals, like Magee, and other organizations in Pennsylvania must pay close attention to the reimbursement rates, certification requirements, and other components that are related to doulas. This will be a critical part of both compliance and employee retention. The inability to bill payers for services historically acted as a barrier for some doulas to remain independent in the profession. As the process develops, more doulas could elect to pursue independent or small group work outside of community organizations or healthcare organizations. Figure 7 highlights this new potential mobility and contributing factors. This would affect the pool of candidates and the turnover rates.

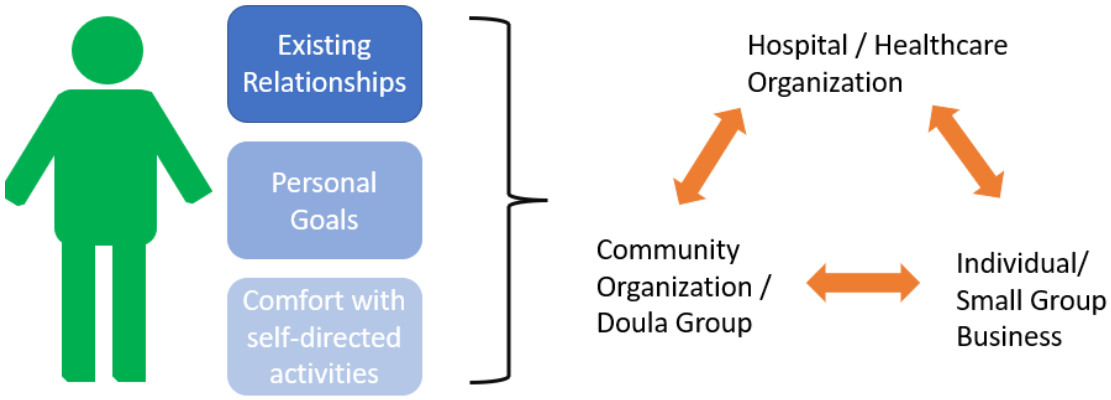


Figure 7. Increased Doula Mobility with Reimbursement Changes

Organizations may propose to pay for trainings and certifications in exchange for the individual providing services for that organization for a set period, as the cost of these qualifiers remains a barriers. Certifications also frequently require the doula to attend and report on a set number of births that they supported. Organizations, doula groups, and community groups can leverage existing pathways that generate clients as an attractive benefit for doulas seeking certification. Benefits in the form of paid time off, health insurance, and retirement savings also act as a potential attractant. However, the average cost of benefits in the hospital industry is estimated to be 34.8% of the total compensation per hour (Bureau of Labor Statistics, 2021), which is a significant cost in industries where margins are already small.

Magee must define and advertise its unique value as an employer connected to an insurer to attract and retain doulas if reimbursement is approved in Pennsylvania. Processes and relationships are in place within this organization to assist with navigating and optimizing payments within this new billing environment. Payments from the medical assistance program are not processed instantaneously, therefore funds are required to remain functional in the interim period. Operating within a larger healthcare system provides flexibility during funding cycles to

ensure the continuity of the program. Independently employed doulas may find these delays more impactful if being a doula is their main source of income. Additionally, Magee must prepare to reevaluate current processes and requirements in the event that the state bill passes. This requires strategic planning to anticipate necessary changes over the course of the next year of the program to take advantage of new opportunities and plan for future barriers. Reimbursement for medical assistance enrollees provides a new funding stream to enhance program sustainability.

4.0 Limitations

This case study is limited by a small population size (n=414), no current outcome data, a lack of patient and provider feedback, and protected information about financing between the Magee doula program and the UPMC Health Plan. UPMC Magee-Womens delivers approximately 10,000 babies per year, so the patients receiving doula support represent roughly 4% of the population. This dampens the ability to identify statistically significant changes in clinical outcomes that would translate to a broader population. The power of the case study is also hindered by not including outcome data. This data is expected to be published in a journal later in the year. While clinical outcomes are important, the program cannot merely be evaluated using these measures. It is essential to measure the doulas' impact on creating a culture that allows patients to have a "Good Birth". A small patient satisfaction survey (n=20) was conducted by an internal quality improvement department within the first five months of the program, that demonstrated positive perceptions of the program. However, larger, continuous sampling will better elucidate the patient experience with the doula, the hospital, and their birth. Providers were also not surveyed during this one-year period. Provider perceptions of doulas play a critical role in their integration into the maternity care team. Although a pre-program baseline cannot be developed, changes in provider perceptions can be tracked moving forward. Finally, financial information related to the details of the contract with the UPMC Health Plan cannot currently be described.

The generalizability of the case is also limited by the IDFS environment. The doula program exists as part of a suite of services available to birthing persons throughout their reproductive period. Other healthcare organizations may provide a different set of services or services that are not part of an integrated delivery model. Additionally, the UPMC suite of services

shares a culture, though this may differ for services with a looser alignment structure. The shared culture introduces different opportunities to change provider and staff perceptions of doulas as part of the care team. This specific case, therefore, may be more relevant for similar systems.

5.0 Discussion

Non-clinical support persons and traditional medical providers may find themselves lost in a complex series of interactions while attempting to provide a "Good Birth" for patients. This disconnect causes the maternity care team and the doula to remain unaligned, although their goal is the same. The case study at Magee-Womens Hospital highlights one model of how hospitals can introduce doula services to support their pregnant and birthing patients while integrating the doula with the existing maternity care team. Hospitals with reservations about employing doulas or concerns about patients' perceptions of that employment status may choose to invest in market research to gauge public interest. Only one study to date has investigated interest in hospital-based doula services for low income and racial and ethnic minorities. This is not necessarily generalizable to each hospital's patient population. Magee benefits from a prior relationship with a community-based doula model that was associated with UPMC's Department of Family Medicine. Hospitals interested in forming preliminary connections can foster relationships with community-based programs and private doulas in the local area. These relationships can help start conversations about policies and procedures within the hospital that currently support or act as barriers to private or community doula care. Once the hospital is more welcoming to all doulas, it is easier to be welcoming to doulas as employees.

Doula services exist within the hospital space, but the funding mechanisms may be unique from the rest of the facility. Hospitals should consider grant funding as well as agreements with payers for financing the program. Integrated delivery and finance systems maintain an advantage due to their combined interest in improving maternal and infant outcomes and reducing costs. This allows for more creative conversations about reimbursements for services. As more states move

towards Medicaid reimbursement for doulas services, funding concerns will shift away from having to solely rely on grants. The business case for hospital-based services will strengthen as funding streams are diversified, which could be a factor in the number of programs observed across the United States.

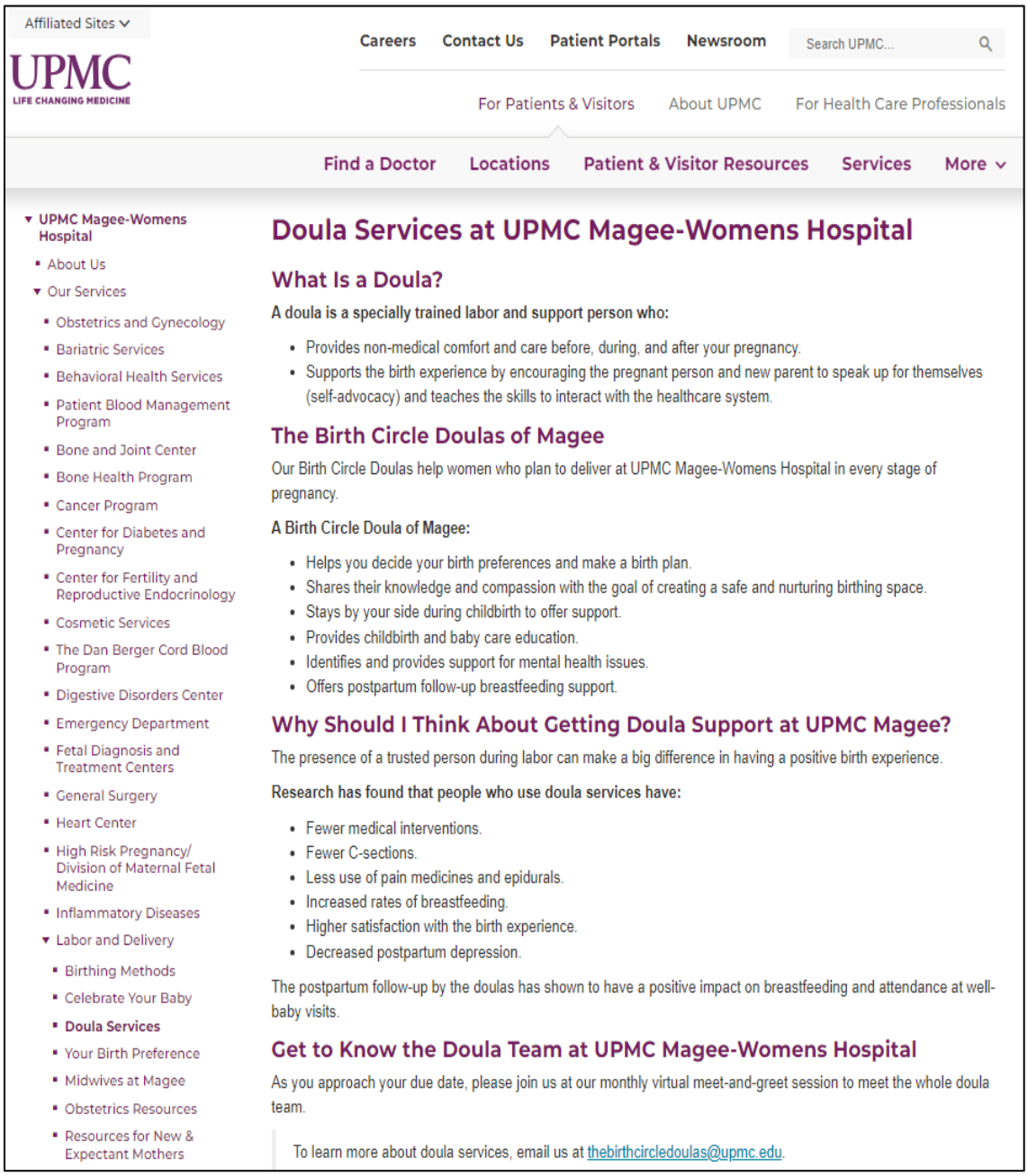
6.0 Conclusion

Numerous research studies document the positive impacts of doula support services on clinical outcomes, but the realization of these outcomes is dependent on access to services, the service model, the availability of supplementary resources, the relationship of the doula with other members of the collaborative maternity care team, and the financial sustainability of the program. All these factors affect the volume of patients that can be served, and the experience and outcomes associated with their name after a pregnancy episode. Provider attitudes and societal attitudes are changing. American society's low tolerance threshold for adverse outcomes in maternal and infant health has been reinforced by recent changes in reimbursement structures and the growing investment in non-clinical services to help patients navigate during pregnancy. Providers, insurers, and government officials must partner to deliver care that shows a positive impact on these outcomes, and doula support services may be a solution with wide-reaching arms.

7.0 Public Health Relevance

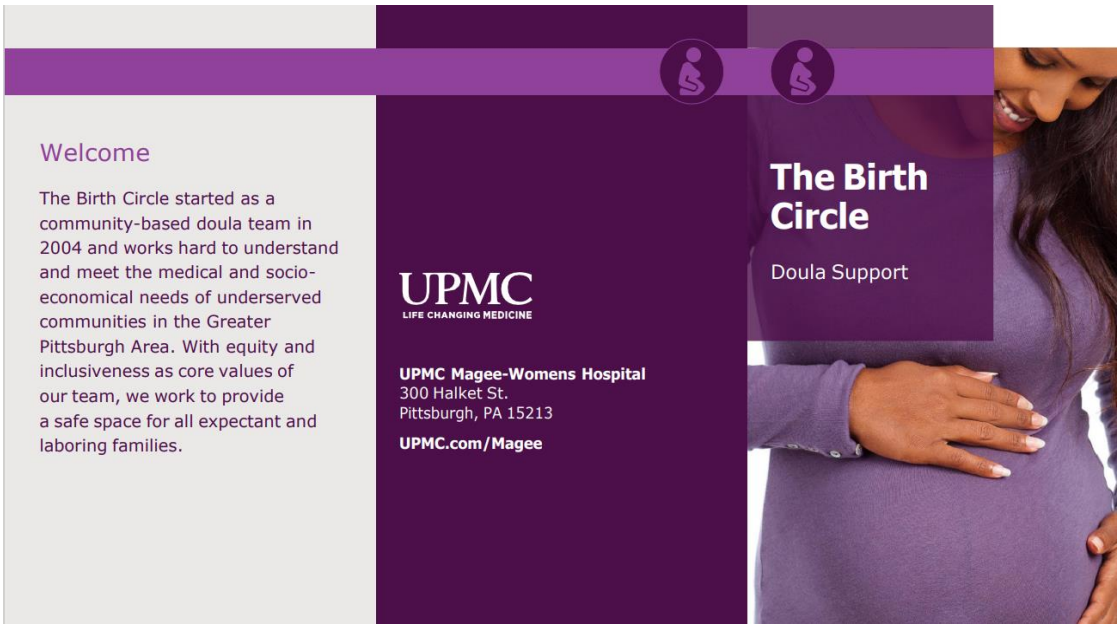
Obstetric care delivery in the United States historically relied upon obstetricians /gynecologists to provide services beyond the identification and treatment of acute medical issues that arise during pregnancy. As emphasis on care coordination has grown, members of social work, behavioral health, nutrition, midwifery, and others have joined to the maternity care team in pursuit of addressing the medical, social, and behavioral components that affect pregnant persons. The implementation of hospital-based staff models for doula support services during the continuum of pregnancy presents the opportunity to create a critical disruption in traditional obstetric service models – a bridge across a wide chasm between patient and provider. The potential benefits of this type of program include the ability to positively influence patient-provider relationships, breastfeeding rates, cesarean section rates, maternal/infant morbidities, and maternal/infant mortality rates.

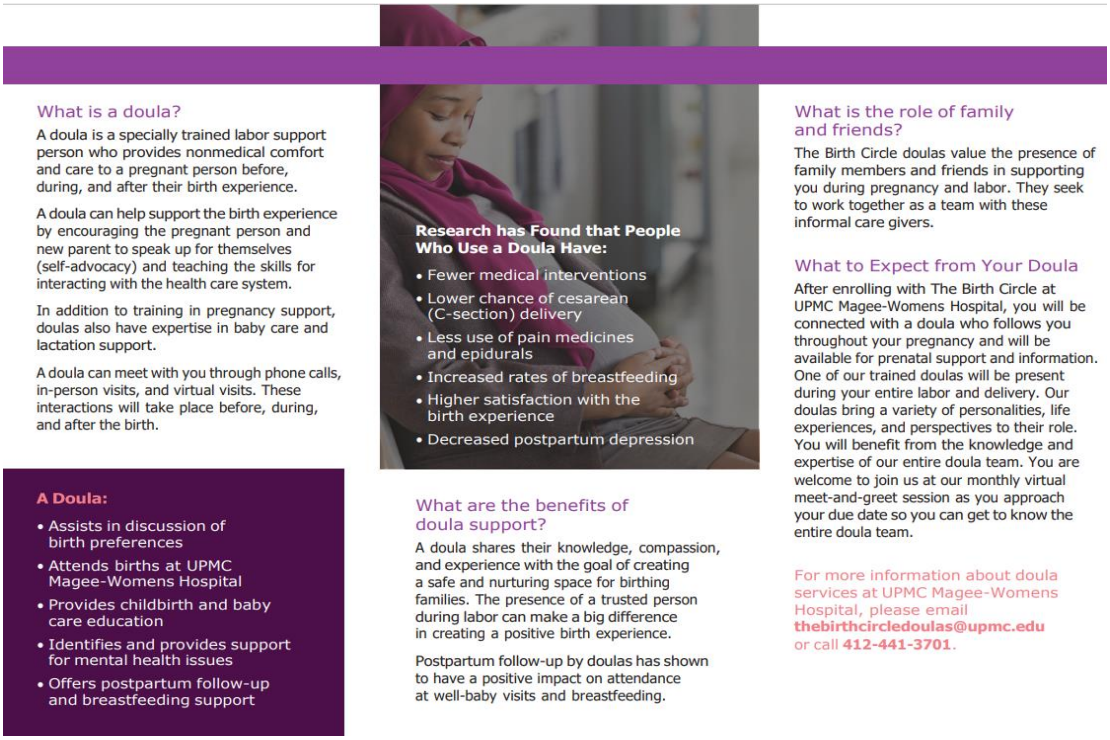
Appendix A The Birth Circle Doulas of UPMC



Appendix Figure 1. Image of Doulas Services at UPMC Magee-Womens Hospital Webpage

Appendix B Magee Promotional Materials





Appendix Figure 2. The Birth Circle Doulas of UPMC Magee Patient Facing Brochure

Appendix C Operational Details for The Birth Circle Doulas of UPMC Magee-Womens

Appendix Table 1. Core Responsibilites by Role

Program Coordinator	Doula Lead Educator	Admin. Lead Doula	On-Call Supervisor
Track and report on the project statuses of the lead doulas Manage client intake, outreach, and assignment Administer assessment tools, analyze, and report data Compile monthly financial report Act as a navigator for the doula team with social work, case management, and behavioral health Develop community partnerships and maintain lists of community resources Attend monthly client meetings with the doula team Develop patient and community facing materials Maintain and track doula credentials and trainings Point person for administrative issues	Develop agenda and priorities for the monthly education meeting Carry out special projects and report back to the Program Coord. Be on-call for four shifts a month Maintain a caseload of prenatal and postpartum clients Develop educational pieces for competency training 2x a year Work with OCS to resolve questions about best practice – escalation processes Complete peer interviews for new hires Identify educational opportunities and disseminate information	Facilitate engagement with community partners and develop outreach opportunities Carry out special projects and report back to the Program Coord. Lead the weekly community doula meeting Lead the monthly client meet & greet Be on-call for four shifts a month Maintain a caseload of prenatal and postpartum clients Complete “Anytime Check-ins” with the Program Coord. Work with OCS to resolve questions about best practice – escalation processes Act as the liaison between the Program Coordinator and the doulas	Act as an On-Call Leader one week out of every five Maintain communication about ongoing births Escalate issues to the appropriate point person Dispatch doulas to births and evaluate attendance requests for emergency births Generate a weekly On-Call Report for the leadership team Be on-call for four shifts a month Maintain a caseload of prenatal and postpartum clients

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