

# Maternal Navigation: For the Common Good

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**THE US FACES A MATERNAL HEALTH CRISIS** as overall maternal mortality rates continue to worsen. HHS, in its *Healthy People 2030* report, indicates that women in the US are more likely to die from childbirth than are women in other developed countries.<sup>1</sup> This article provides an overview of the crisis, along with its economic and societal costs, and the role of prenatal care and premature birth in this escalating problem. The article then proposes maternal navigation for pregnant patients who chronically miss prenatal care appointments as one way to reduce premature births and associated health care costs. A connected system of support that improves health outcomes and reduces health care costs for the most at-risk patients is an essential response to a crisis that affects not only the individual but also society.

## INTRODUCTION AND BACKGROUND

Pregnancy-related mortality rates vary by state, intersect with various social determinants of health, and reflect significant racial and ethnic disparities in pregnancy-related deaths.<sup>2</sup> According to the March 2023 National Center for Health Statistics report on maternal mortality rates in the US, the maternal mortality rate in 2018 was 17.4 deaths per 100,000 live births, compared with rates of 20.1 in 2019, 23.8 in 2020, and 32.9 in 2021.<sup>3</sup> Black women have a pregnancy-related mortality ratio that is approximately 3 times greater than that of White women.<sup>4</sup> Further, in 2022, the CDC reported that 4 of 5 pregnancy-related deaths were preventable, with 47% of deaths occurring either during pregnancy or within 7 days after delivery.<sup>5</sup> The leading underlying causes of pregnancy-related deaths include mental health and cardiovascular conditions, hemorrhage, and infection.<sup>5</sup>

Factors that contribute to maternal morbidity and mortality are identified as community (eg, housing), health facility (eg, lack of appropriate resources), patient (eg, nonadherence to medical regimens), provider (eg, lack of continuity of care), and system level (eg, inadequate access to care).<sup>4</sup> Although these factors require patient-level engagement and management, prevention strategies to respond to these factors depend upon providers and health systems to assist patients in navigating

## ABSTRACT

The US faces a maternal health crisis as overall maternal mortality rates continue to worsen. HHS, in its *Healthy People 2030* report, indicates that women in the US are more likely to die from childbirth than are women in other developed countries. The cost of the maternal health crisis and its associated morbidities is estimated to be \$32.3 billion from conception to 5 years postpartum, with \$18.7 billion in medical costs and \$13.6 billion in nonmedical costs. Under the current health care reimbursement system, health care providers alone have little short-term incentive to bear the cost for solutions or prevention strategies that could change the social and cultural factors affecting maternal outcomes.

This article provides an overview of the crisis, along with its economic and societal costs, and the role of prenatal care and premature birth in this escalating problem. The article then proposes maternal navigation for pregnant patients who chronically miss prenatal care appointments as one way to reduce premature births and associated health care costs.

Through intentional and focused investment in maternal navigation by payers and providers together, health outcomes can be improved and disparities can be reduced. As a result, payer and provider costs are reduced and the interests of all parties are advanced. A connected system of support that improves health outcomes and reduces health care costs for the most at-risk patients is an essential response to a crisis that affects not only the individual but also society.

identified social needs so that health conditions of pregnant patients during the prenatal and postpartum periods can be managed and outcomes can be improved.<sup>4</sup> These social and medical risk factors that drive differences in pregnancy-related complications and death are also associated with low prenatal care appointment attendance.<sup>6</sup> Maternal health outcomes, then, are dependent on providers and health systems to create the interconnection among social, health, and health system factors.<sup>4</sup> Therefore, a maternal navigation system of support that not only responds to the underlying health causes of pregnancy-related death but also addresses the social and structural health system contributing factors to maternal mortality is necessary to improve maternal health outcomes and reduce disparities in care.

## MATERNAL AND INFANT OUTCOMES AND THE ESSENTIALITY OF PRENATAL CARE

Prenatal care is associated with improved health outcomes for women and infants through monitoring of growth and development, screening for infectious disease, and managing chronic health conditions.<sup>6,7</sup> Early prenatal care allows for changes to personal and systemic factors that contribute to good maternal and infant health.<sup>6</sup> Additionally, prenatal care is associated with fewer preterm births, with there being a relationship between the number of prenatal visits and the preterm birth rate.<sup>8</sup> Preterm birth is the most frequent cause of perinatal morbidity and mortality in the US.<sup>8</sup> The absence of prenatal care increases the relative risk for preterm birth 2.8-fold.<sup>8</sup> Further, prenatal care reduces the disparity in the preterm birth rate among African American women by 48% compared with White women.<sup>8</sup> Consequently, strategies to increase prenatal care participation are essential to decrease preterm births and improve health outcomes for women.<sup>8</sup> One facet of this strategy to increase prenatal care participation is to reduce the number of chronically missed appointments. Although some variation as to the recommended frequency and modality of prenatal visits exists, prenatal care as a means to good maternal and infant health is a consistent strategy in the US.<sup>9</sup>

Chronic missed appointments can be defined as appointments that are missed either 20% of the time or appointments that are missed more than 5 times as part of a series.<sup>10</sup> The overall missed appointment rate across primary and specialty care averages 23%, is as high as 58%, and is 1.8 times higher for Black Americans than for White Americans.<sup>11</sup> Specific to high-risk pregnancy appointments, the no-show or missed appointment rate is estimated at 28%.<sup>11</sup> Lastly, patients with frequently missed appointments

tend to have lower socioeconomic status, government health insurance, and worse health outcomes compared with patients who attend scheduled appointments.<sup>10</sup>

In 2021, approximately 3 of 4 pregnant women (75.6%) received at least adequate prenatal care.<sup>12</sup> This means that approximately 25% of pregnant women receive less than adequate or no prenatal care, with many of the at-risk women being less educated, geographically isolated, younger than 25 years, non-White, uninsured, underinsured, or Medicaid insured.<sup>13</sup>

Because 25% of pregnant women do not receive adequate prenatal care, barriers to that care must be explored.

Common perceived health system barriers to prenatal care appointments include lack of money or insurance to pay for the visit, lack of available appointments, and no Medicaid card.<sup>6</sup> Common perceived social barriers to prenatal care appointments include lack of transportation, busy personal schedule, and lack of childcare.<sup>6</sup>

Other barriers to care are specific to race and associated discrimination.<sup>14</sup> In one study, examples of racial microaggressions experienced by Black women related to delayed or no prenatal care include being ignored, having opinions minimized or devalued, being followed in public areas, and being mistaken for someone else of the same race.<sup>14</sup> This study concluded that racial discrimination in the form of microaggressions may influence Black women's use of prenatal care and may be a key barrier to prenatal appointments.<sup>14</sup>

Prenatal care that responds to the needs of patients at high risk for maternal mortality must be redefined beyond the appointment itself, to include navigation of structural social and health system barriers to a healthy pregnancy. This system of support must navigate not only complex social needs, such as financial resources, transportation, childcare, and housing, but also systemic barriers to care, such as appointment availability, provider scarcity, and experiences of interpersonal racism. A system that navigates these barriers to a healthy pregnancy will help to decrease chronically missed appointments and thereby improve the adequacy of prenatal care and health outcomes.

## SOCIAL AND ECONOMIC COSTS

The maternal health crisis is not so much a medical crisis with societal components as it is a societal crisis with medical consequences. Thus, the ability to estimate the cost to the individual, the health system, and society is challenging, and few comprehensive studies are available. However, the authors of one recent study developed a model that estimates the costs of 9 maternal morbidity conditions among pregnant patients and their children

in the US in 2019, through 5 years postpartum, using data from the CDC and other governmental agencies.<sup>15</sup>

This study estimates the total cost of these morbidity conditions to be \$32.3 billion from conception to 5 years postpartum, with \$18.7 billion in medical costs and \$13.6 billion in nonmedical costs.<sup>15</sup> Fifty-eight percent of these costs were borne by the medical system, and 42% were borne by employers and other nonmedical sectors in the form of costs including lost productivity, social services for behavioral and developmental disorders in children, social programs such as the Supplemental Nutrition Assistance Program, and Medicaid.<sup>15</sup> Child outcomes are estimated to account for 74% of the total long-term costs, which are driven by preterm birth due to maternal mental health conditions, gestational diabetes, and hypertension.<sup>15</sup> As a result, initiatives to respond to these conditions should reflect how social and structural factors drive maternal outcomes.<sup>15</sup>

Under the current health care reimbursement system, health care providers alone have little short-term incentive to bear the cost for solutions or prevention strategies that could change the social and cultural factors affecting maternal outcomes.<sup>16</sup> However, because long-term costs and benefits accrue to health systems, employers, insurers, and society, providers and payers together should implement a comprehensive strategy to reduce barriers to a healthy pregnancy, which ultimately improves the rate of prenatal care visit attendance. An early investment in maternal health navigation is estimated to be less than the long-term cost and consequence of inadequate prenatal care and maternal morbidity that can lead to maternal mortality.<sup>15</sup>

Finally, in 2021, Medicaid was the source of payment for 41% of deliveries in the US.<sup>17</sup> Characteristics of this Medicaid population are consistent with the earlier noted racial and ethnic outcome disparities and chronic missed appointment (inadequate prenatal care) demographic data.<sup>17</sup> These insights further refine the navigation recommendation to focus on the prenatal period for patients who chronically miss appointments, whose principal source of payment is Medicaid.

### **RECOMMENDATION: MATERNAL HEALTH NAVIGATION— A COORDINATED SYSTEM OF SUPPORT**

Maternal mortality and morbidity exact costs at the individual level and often span 2 generations or more, but systems of health care—for example, providers and payers—experience economic losses that can serve as an incentive to change this trajectory. Together, health care providers and payers bear more than 50% of the excess

cost associated with maternal morbidity conditions that contribute to maternal mortality.<sup>15</sup> One way to reduce premature births and simultaneously reduce cost is to focus on Medicaid populations of pregnant patients who either chronically miss or do not attend prenatal care appointments, which will allow barriers to be identified and resolved.<sup>8</sup> A coordinated system of support led by a maternal health navigator should be implemented in partnership between providers and Medicaid managed care plans as a way to increase appointment attendance so maternal morbidities can be managed, prenatal care can be delivered, and premature births and associated health care costs can be reduced.<sup>8</sup>

The role of patient navigator was introduced in the US in the 1990s to improve access to cancer care for vulnerable populations for the purposes of screening and diagnosis and to help patients traverse the complex health care environment.<sup>18</sup> Since then, patient navigation models have diversified and expanded to include other chronic and transitional health conditions. These models have been proven to be effective and are commonly used for medically complex patients and vulnerable populations to reduce barriers for those who experience fragmentation and gaps in health and social systems delivery and to facilitate access to care, including health insurance.<sup>19,20</sup> Patient navigation models can help reduce health outcome disparities in vulnerable populations by focusing on prevention and early detection, health care access and coordination, insurance coverage, and diversity and cultural competency.<sup>21</sup> Navigators differ from other providers as they are oriented toward flexible problem-solving to overcome perceived barriers to care rather than the provision of a predefined set of services.<sup>22</sup> Pregnant patients who do not receive adequate prenatal care often face complex health and social barriers to a healthy pregnancy that a navigator-led system of care can be designed to support.

Navigators tend to be either lay (peer) persons without professional education, such as community health workers, or others who have professional education and training, such as nurses or social workers, who tend to focus on the management of multiple chronic health and social conditions.<sup>19</sup> Patient navigators not only facilitate improved health care access and quality for underserved populations, but they can also respond to patient distrust in providers and the health system that often contributes to missed appointments and nonadherence to treatment recommendations.<sup>21</sup> The type and number of navigators needed will depend on the barriers faced by the population being served and the way in which health system roles and responsibilities are defined, and these

inputs will determine the cost of the program. Barriers to be navigated include language, transportation, scheduling, clinical follow-up and monitoring, and emotional support. Notably, other evidence-based programs such as CenteringPregnancy and resources such as doulas are an important part of an integrated maternal health care team and are potential adjuncts to this proposed maternal navigation system of care. In particular, both CenteringPregnancy programs and doula resources can be effective at reducing racial disparities—a major factor in maternal and infant outcomes.<sup>23,24</sup>

A maternal health navigator whose focus is reducing structural social and health system barriers must be skilled at traversing institutional, community, health, and social barriers encountered by this specific maternal health population. The complexity of this population, compared with other navigation-led populations such as cancer patients, is the unique convergence of acute and chronic, as well as health and social conditions that must be cohesively managed throughout the pregnancy. Further, according to recent findings by the CDC, more than one-third of pregnancy-related deaths occur between 7 and 365 days postpartum.<sup>4</sup> Therefore, this navigation program should begin as early in the pregnancy as possible and continue for up to 1 year after delivery.

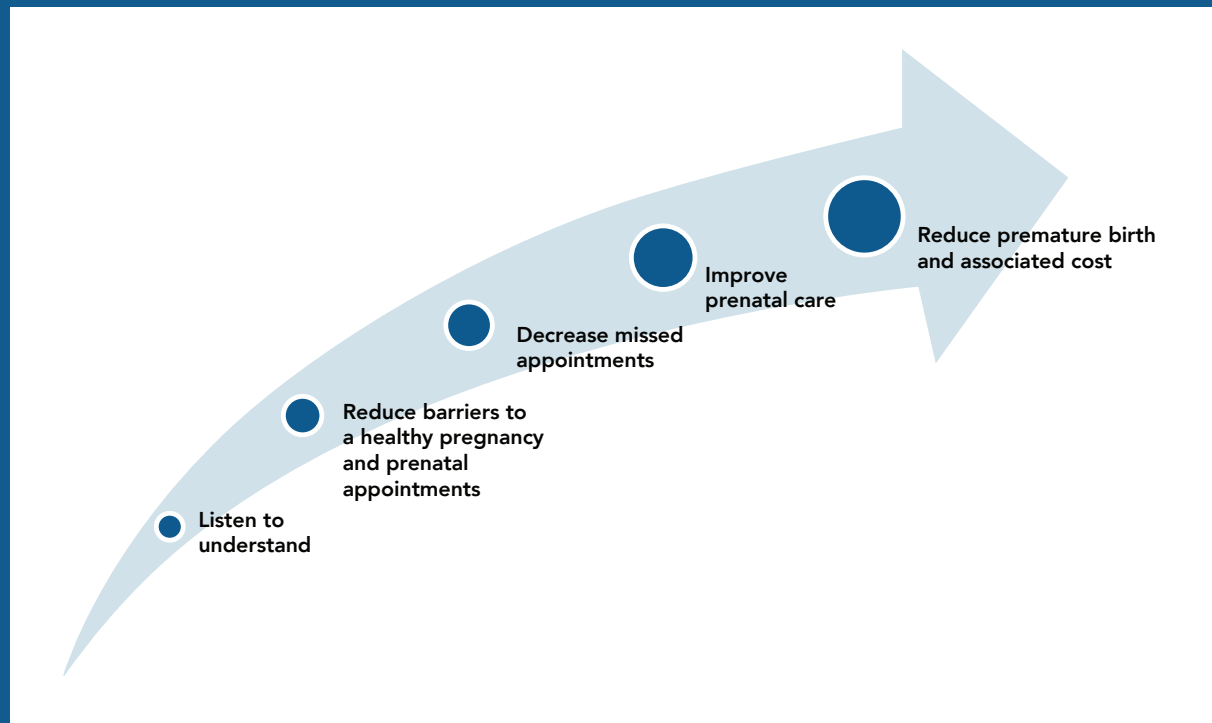
The scope for this system of support is focused on ensuring that patients receive the appropriate amount of prenatal care and requires a maternal health navigator to identify and resolve barriers that are both internal and external to the health system and respond to the personalized needs of each individual. For example, health system barriers to appointment attendance include financial assistance or health plan enrollment, Medicaid application, and deployment of mobile services. External social barriers to appointment attendance include coordinating temporary housing or facilitating childcare needs so that appointment attendance can be accomplished. This type of internal and external scope utilizes personalized and comprehensive navigation to overcome barriers to a healthy pregnancy and prenatal care. Consequently, it is recommended that the health system employ and manage the navigator that is paid for through Medicaid managed care plan outcome incentives.

Accountability to change systemic barriers to care, in addition to the tactical barriers noted above, is a distinguishing feature of this maternal navigator role. Provider barriers to care will require navigating organizational practices that disadvantage vulnerable populations.<sup>6</sup> For example, visit co-pays may discourage appointment attendance and the navigator will help to identify and pursue alternatives to these practices. Often, maternal health navigation programs focus on individual obstacles to care

and implement solutions that may resolve tactical barriers, such as home visiting programs, health education, or transportation. Although these interventions are important, they are not comprehensive programs and often fail to accomplish or cannot measure the broader maternal health outcome goals, and they may actually increase costs.<sup>24</sup> For example, an analysis of Medicaid contracts from all states and the District of Columbia that used comprehensive managed care in 2022 indicates that contracts approach the maternal health continuum in fragmented and incomplete ways that reflect variation in how maternal needs are measured and addressed, if at all.<sup>25</sup>

This recommended system of support begins with the navigator. The navigator must build a relationship with each patient so that trust can be established and a more complete understanding of the barriers to appointments can be identified. This will enable the identification and implementation of individualized practical solutions. Follow-up before and after appointments is critical to understanding the patient experience and to building a sustainable, outcomes-based practice. Additionally, the navigator must cultivate relationships with the clinical teams that may not have experience working with vulnerable populations, their obstacles to good health, and their unique needs regarding education and utilization of health services. Moreover, vulnerable populations who are not experienced at navigating the health system may not understand treatment options or risks of treatment plans.<sup>26</sup> The maternal navigator can help support both the clinical team and the patient as these situations arise.

In addition to the individualized navigation of provider and community-based systems of care, digital tools have become essential to how providers engage and maintain relationships and build trust with patients.<sup>27</sup> Tools such as text messaging, social media, and remote patient monitoring devices can help patients and providers to communicate, provide reminders for appointments, and monitor changes in physical and mental health. It is reported that low-income pregnant patients have very high access to smartphones and computers; however, many patient engagement health programs neither are aimed at nor reach vulnerable populations.<sup>27</sup> Patient navigators can assist patients to increase the use of these tools for health management and social system navigation practices and to see the benefits from their use.<sup>27</sup> Although this navigation system of support is nonclinical in nature, its aim is a comprehensive approach to a healthy pregnancy, including the prenatal appointment. Therefore, its success is measured by the following clinical outcomes: increased birth weight, increased gestational age at delivery, and reduced neonatal intensive care days. These improved outcomes correspond directly with cost.<sup>15</sup> In cancer care and other complex

**FIGURE.** Maternal Health Navigation: A Connected System of Support for Improved Health Outcomes

conditions, for example, vulnerable populations demonstrably benefit from patient navigation models by enabling timely access to health care services and thereby ensuring follow-up care and improved patient outcomes.<sup>18</sup> Likewise, in response to the maternal mortality crisis, patient navigation models should be implemented and should focus specifically on persons in Medicaid managed care plans who chronically miss prenatal appointments as a consistent indicator of the most at-risk maternal health population.

## CONCLUSIONS

Development and implementation of a maternal health navigation program is one way to address the problem of chronically missed prenatal appointments, thereby helping to reduce premature births and associated health care costs. Structural social and health system barriers to a healthy pregnancy must be responded to as an integral and comprehensive prenatal care plan. Prenatal appointment attendance can thus be achieved so that chronic health conditions such as anemia, high blood pressure, and diabetes can be identified and treated, and the high social and economic costs of maternal morbidities and mortality can be reduced (Figure).

Maternal health is a significant health crisis.<sup>2</sup> Through a joint investment in a maternal navigation system of

support by both payers and providers, health outcomes can be improved and disparities can be reduced. As a result, payer and provider costs are reduced and the interests of all parties are advanced.

This maternal navigation system of support prioritizes maternal health as a social crisis with medical consequences rather than a medical crisis with social connections. The innovation of this recommendation is not in the medicine itself, but in the social response to chronically missed prenatal appointments. //

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