POLICY BRIEF

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Rural Maternal Healthcare

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KEY FINDINGS

- **Reduced access to maternal healthcare has resulted in half of rural counties not having an obstetrician-gynecologist.**
- **The lack of sufficient prenatal and postpartum care increases the likelihood of poor birth outcomes and preventable death.**
- **Black mothers are almost 3 times more likely to die during pregnancy and the postpartum period than white mothers.**

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PURPOSE

The purpose of this policy brief is to examine rural maternal healthcare in the United States, analyze maternal health outcomes, the causes of the surging maternal mortality rate, and identify potential solutions.

INTRODUCTION

Maternal Mortality in the United States

The maternal mortality rate, defined as the death of a woman while pregnant or up to 42 days after the end of pregnancy from health problems related to pregnancy, in the United States is the highest of any developed nation in the world and over double the rate of our peer countries. There are many factors to blame for the increased risk of maternal death in pregnancy, childbirth, and the postpartum period, ranging from inequities in healthcare access, women getting pregnant at older ages, and a rise in chronic health conditions.[1] There are significant geographic disparities in maternal mortality, as rural residents had a 9% higher probability of mortality than urban residents, even after controlling for socioeconomic factors and clinical conditions.[2] The purpose of this policy brief is to examine rural maternal healthcare in the United States by analyzing maternal health outcomes, the causes of the surging maternal mortality rate, and identifying potential solutions.

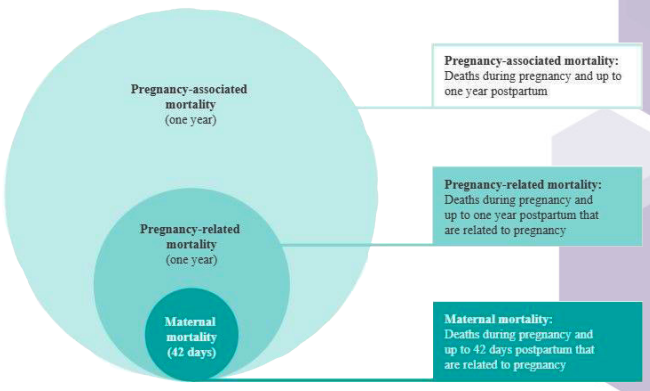


FIGURE 1: Measures of Maternal Death , Declercq, ED, & Zephyrin, L. (2020, December). Maternal Mortality in the United States: A Primer. Retrieved from https://doi.org/10.26099/ta1q-mw24

Understanding Maternal Healthcare Measures

Beyond maternal mortality, Figure 1 shows the two other commonly used measures for maternal deaths from health problems related to pregnancy: pregnancy-associated mortality (PAM) and pregnancy-related mortality (PRM). PAM is any death while pregnant or within one year of the end of the pregnancy, no matter the cause, while PRM is a death during pregnancy or within one year of the end of pregnancy from a pregnancy complication, chain of events initiated by pregnancy, or aggravation of an unrelated condition by the physiologic effects of pregnancy.[3] The cause of maternal deaths varies, depending on when maternal deaths occur, with 52% occurring in the postpartum period, 33% during pregnancy, and 17% occurring on the day of delivery. As Figure 2 shows, while the leading causes of death during pregnancy are cardiovascular conditions and hemorrhage, infection is the leading cause from birth to 42 days later, and heart muscle disease (cardiomyopathy) in the 43 days – 1 year period. The variation in cause of death over time exposes a glaring need for integrated care delivery models.[4,5]

Diminishing Access to Maternal Healthcare

Rural Obstetric Unit Closures Limiting Acccess to Care

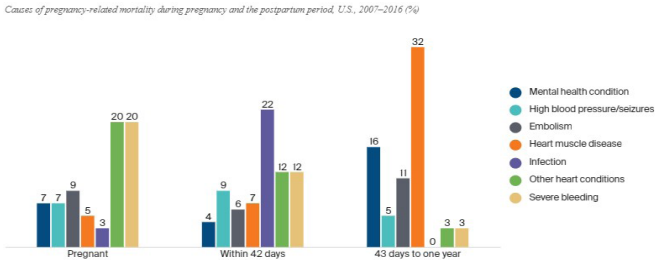
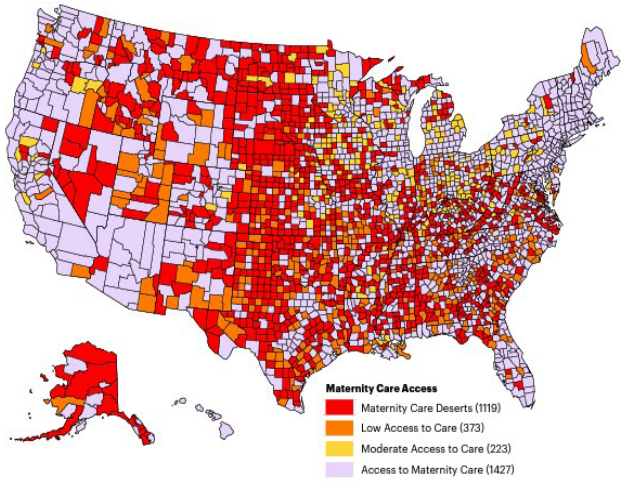


FIGURE 2: Causes of pregnancy-related mortality during pregnancy and the postpartum period, U.S., 2007–2016 (%) , Declercq, ED, & Zephyrin, L. (2020, December). Maternal Mortality in the United States: A Primer. Retrieved from https://doi.org/10.26099/ta1q-mw24.

The closure of a rural hospital's obstetric unit is associated with reduced access to prenatal care and higher rates of preterm births, out-of-hospital births, and births in hospitals without obstetric units.[6] Since 2011, there have been 217 obstetric unit closures in the US, with 13 in the past year alone, resulting in half of rural counties not having an obstetrician-gynecologist.[7,8,9] This number has the potential to accelerate, as Chartis, a healthcare consulting firm, found 45% of rural hospitals have negative operating margins.[10] These closures contribute to "maternity care deserts", i.e., counties without obstetric care, a birthing center, obstetrician-gynecologists (OB/GYN), or certified nurse midwives (CNM). In combination with other factors (described later), these closures have led to over 2 million women of childbearing age (and nearly 150,000 babies) living within the 1,119 maternity care deserts in the United States (Map 1). Without access to adequate prenatal care during pregnancy, these individuals are three times more likely to die than mothers receiving quality care. [11]

As the number of closed obstetric units increases, so do the miles that expecting mothers must travel for prenatal care and delivery.[12] Typically, pregnant mothers in rural areas travel an average of 24 miles to the nearest obstetrics unit, but when a unit closes, the distance may increase to anywhere from 30-60 miles.[13]



MAP 1: *Maternity Care Deserts, Maternity care deserts report. (n.d.). Retrieved from https://www.marchofdimes.org/maternity-care-deserts-report#divMaps*

In addition to low birth volume, shortages of obstetricians-gynecologists and family physicians, and uncompensated care, another factor disproportionately impacting rural hospitals is the significantly lower reimbursement rates associated with Medicaid beneficiaries. According to a Government Accountability Office (GAO) report from 2022, these rates do not cover the full cost of providing obstetric services: in fact, they only pay half of what private insurers do for childbirth-related services.[14] Further, Medicaid covers 50% of rural births, compared to 43% of urban births, causing rural hospitals to potentially suffer financial losses by providing obstetric services. To make up for the payer mix, rural hospitals reported they needed 200 births per year to maintain safety standards and remain financially viable. [15]

Insufficient Prenatal and Postpartum Care

Prenatal Care

The importance of prenatal care cannot be overemphasized. Lack of such care is associated with a three-fold increase in low birth weight and a five-fold increase in infant mortality. Mothers are also significantly impacted, and a lack of prenatal care is associated with a three- to four-fold increase in maternal mortality.[15,16] Additionally, prenatal care allows clinicians to evaluate maternal and fetal health,

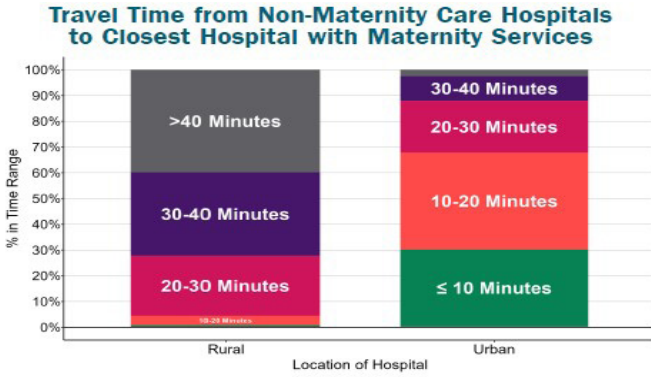


FIGURE 3: Travel Time from Non -Maternity Care Hospitals to Closest Hospital with Maternity Services, https://chqpr.org/downloads/Rural_Maternity_Care_Crisis.pdf.

screen for medical risks and fetal anomalies, and provide education and counsel on healthy behaviors, including getting adequate exercise, eating a balanced diet, use of prenatal vitamins, quitting smoking and eliminating alcohol consumption.[16] Despite the evidence of the benefits of early prenatal care, approximately 25% of women received care late or received fewer than the recommended number of visits, with noteworthy differences among younger, less educated, rural, and racial/ethnic-minority populations.[17,18] Other characteristics associated with not getting prenatal care as early as recommended included: ethnicity, age, education, number of previous births, and marital status. The most common reasons for not receiving prenatal care earlier were being unaware of pregnancy, having no appointments available, lack of money or insurance to pay for the visit, reporting their doctor/health plan would not start prenatal care, and they did not have a Medicaid card.[19]

Postpartum Care

Sometimes referred to as the "fourth trimester", the postpartum period begins soon after delivery of the baby and is an important part of the continuum of maternal healthcare. The American College of Obstetricians and Gynecologists (ACOG) recommends an initial appointment with a provider within three weeks postpartum, ongoing care as needed, and a final comprehensive postpartum visit by 12 weeks after birth. The postpartum period can present serious challenges for women, with 70,000 individuals per year experiencing severe postpartum morbidities, such as cardiac events, cerebrovascular events, postpartum hemorrhage, kidney failure, postpartum depression, anxiety, and post-traumatic stress disorder.[20] Among those who experience complications, the risk of postpartum death doubles.[21] Part of the issue stems from underutilization of care, as nearly 40% of new mothers don't attend a postpartum visit. This potentially increases the risk of short-interval pregnancy and preterm birth and restricts the management of chronic conditions.[22] Of women attending a postpartum visit, less than half reported receiving enough information at the visit about postpartum depression, birth spacing, healthy eating, the importance of exercise, or potential changes in their sexual response and emotions.[23]

Improve Maternal Health Equity

Racial Disparities in Maternal Health Outcomes

The most glaring disparity in maternal health outcomes is by race, with Black mothers at the greatest risk. The maternal mortality rate for Black women in the US in 2021 – the most recent year for which data is available – was 69.9 per 100,000 live births or 2.6 times the rate for White women.[24] Part of the explanation rests in the closed rural obstetric units disproportionately being located in counties with majority Black populations.[25] New research has determined that these disparities are not explained by income, age, or marital status, suggesting that broader factors are to blame.[26]

The Role of Racism in Driving Racial Disparities in Maternal Health

A growing body of research shows the impact that racism and discrimination have on the racial disparities in maternal health outcomes. , There are two avenues for racism affecting the maternal health of Black mothers: (1) structural racism and (2) racism in the healthcare sector.[29,30] Structural racism leads to disparities in income, housing,

safety, and education, which in turn, place Black women at greater risk of pregnancy-related deaths. Healthcare-related racism takes many forms, including implicit bias within the healthcare system and some of its practitioners. From lack of access to quality care facilities to subpar quality of care from providers, the history of racism in American healthcare continues to contribute to Black health outcomes.[31] Recent studies have found providers are less likely to identify pain in the facial expressions of Black patients. Additionally, Black patients report significantly higher rates of mistreatment during the course of their pregnancy-related healthcare.[32] These findings hold true, even after controlling for insurance status, income, age, and severity of conditions.

IMPORTANCE AND IMPACT OF RURAL MATERNAL HEALTHCARE

Over the past few decades, countries around the world have made great progress in reducing their maternal mortality rate, with a distinct exception being the United States. In fact, a study reported that the number of women in the United States dying from pregnancy-related causes has more than doubled from twenty years ago.[33] The National Center for Health Statistics reports that the maternal death rate for 2021 was 32.9 per 100,000 live births, considerably higher than 23.8 in 2020 and 20.1 in 2019.[34] Certainly, part of the increase can be linked to the COVID-19 pandemic, which posed increased health risks for pregnant women.[35] Even so, the United States saw increases in maternal morbidity in the years preceding the pandemic and had significantly worse outcomes when compared to peer countries.[36] Additionally, a detailed analysis of the maternal mortality rate reveals glaring disparities in geography and race. The rise in the maternal mortality rate is exacerbated for women living in rural communities. From 2016-2019, the rural maternal mortality rate jumped from 66.9 to 81.7 per 100,000, nearly double the urban rate of 42.3.[37,38]

STRATEGIES TO IMPROVE RURAL MATERNAL HEALTHCARE

Throughout this policy brief, we have presented data showing the seriousness of the U.S. maternal healthcare crisis and identified multiple factors contributing to the sharp increase in maternal mortality rates. Addressing this crisis will require action by government, healthcare systems/institutions, medical providers, and patients. Further, efforts in this regard should concurrently explore specific steps to reduce the disparities in maternal health outcomes and improve the entire experience from pregnancy to postpartum care for all mothers.

Improving Access to Maternal Healthcare by Rethinking Maternal Healthcare Teams

Rural areas face significant healthcare provider shortages, leading to longer wait times, greater distances to travel for appointments, and in some cases, patients having to forego care altogether. As detailed in our COVID-19 and Rural Health Workforce brief, the shortage is due, in part, to the high cost of medical education and specialty care being predominately concentrated in urban areas. Urban/metropolitan facilities tend to offer better working conditions, flexible scheduling, decreased workload, and shorter shifts. It is estimated that the U.S. needs 8,000 obstetrician-gynecologists to meet demand, with that number rising to 22,000 by 2050.[39] To address the lack of access to rural maternal healthcare, we need to rethink the makeup of the maternal care workforce and be creative in building our maternal healthcare teams. [40] As rural obstetrics units continue to close and rural hospitals struggle to recruit obstetricians, policymakers should consider the composition of maternal healthcare teams and how providers of different levels may be more effectively utilized.

First, as detailed in our COVID-19 and Rural Health Workforce brief, Advanced Practice Providers (APPs), like nurse practitioners (NPs) and physician assistants (PAs), can play a key role in assisting with screening and prevention, diagnosis, and surveillance within a maternal healthcare team. APPs can help reduce the challenges of physician shortages in rural hospitals, as they can help physicians record patient histories, conduct physical exams, deliver babies, and provide pre- and postpartum care. Currently, APPs are subject to state regulations for professional practice, due to limits on scope of practice and reimbursement policies. Research shows that by removing restrictions on APPs, they can begin to fill the void left by the lack of primary care physicians and are more likely

to work in rural areas and their services cost less than a physician.[41]

Next, utilize healthcare providers such as doulas and licensed midwives on maternal healthcare teams, while also expanding training programs. Doulas are non-clinical birth workers who provide physical, emotional, and informational support to mothers in the prenatal, birth, and postpartum periods. Mothers who have access to doulas have improved outcomes, including lower odds of Cesarean sections, preterm births, and low birth weight infants, but only 6% of mothers receive doula care.[42] In fact, the Center for Health Economics and Policy at Washington University found a Black-led doula program in the Uzazi Village of Kansas City, Missouri was effective in reducing the rates of premature births and babies delivered at low birth weights among participating mothers.[43] These improved outcomes and reduced complications result in savings for state Medicaid programs, with one study concluding that $986 was saved per birth.[44] Like doulas, the integration of midwives into maternal healthcare teams has been shown to improve outcomes for parents and babies, including fewer Cesarean sections, lower preterm births, lower episiotomy rates, and higher breastfeeding rates, but they are not being utilized enough.[45] Only 11% of births in America are attended by a midwife.[46] There are barriers to expanding the number of doulas and midwives practicing, mainly a lack of training and certification programs, poor coverage from insurers, and low reimbursement rates. Currently, twelve states and Washington, DC are actively providing Medicaid coverage for doula services while others explore the policy. [47]

Optimize Perinatal and Postpartum Care through Expanded Use of Telehealth

Telehealth refers to an array of digital modalities, including live video, store-and-forward, remote patient monitoring, mobile health, and electronic consults. There are many steps to expand the use of telehealth: improve access to broadband, ensure the cost of technology, infrastructure, and devices are reasonable, and enact policies that promote the use of telehealth among providers for maternal healthcare. For prenatal care, patients can utilize telehealth for routine visits, remote patient monitoring, screenings, consultations with specialists, genetic counseling, and ultrasound readings. Patients may be apprehensive about opting for a telehealth appointment, due to the belief that they are receiving lower quality care, but evidence shows patient-reported outcomes from telehealth visits were similar or better than in-person care, specifically, when the patient was receiving treatment for a mental health condition, general maternal care, and/or diabetes during pregnancy.[48] A 2022 study found that replacing or supplementing in-person maternal health visits with telehealth led to positive health outcomes and high patient satisfaction.[49] Patients felt reduced anxiety and depression when receiving phone-based tele-mental healthcare.[50] Apart from the quality of care, it is also vital to understand if patients will continue opting for telehealth for pregnancy-related healthcare. The COVID-19 pandemic spurred an explosion in telehealth utilization. One study found only 1% of participants had a prenatal visit via telehealth from 2018 through January 2020; this number jumped to 17% in November, before declining to 10% in October 2021. [51]

A systematic review of 23 studies of virtual prenatal care found that pregnant women and healthcare professionals reported higher satisfaction with virtual care, and women with low- and high-risk pregnancies preferred the flexibility of a hybrid model of virtual and in-person care.[52] The higher satisfaction scores were a result of reduced travel time, time away from work, clinic wait time, and no-shows. Furthermore, among those that used telehealth for prenatal or postpartum periods during the COVID-19 pandemic, over 80% reported a high quality of care and 1 in 3 women reported being open to future telehealth visits.[53]

From a postpartum perspective, there are many telehealth services for patients, including general health check-ins, lactation support, screenings, therapy, referrals to specialists, and birth counseling. [54] One study found that having the option of telemedicine increased the odds of attending a postpartum visit by 90% and increased postpartum depression screenings, contraception uptake, breastfeeding, and management of maternal complications.[55] Telehealth has also been used to successfully treat postpartum mood disorders.[56]

Improving Maternal Health Equity

The recognition of maternal health disparities among Black mothers and prioritization to address it is a crucial first step. The first-ever presidential proclamation for Black Maternal Health Week was signed in April of this year by President Joe Biden to commit to pursuing systemic policies to make sure maternal healthcare is free from bias and discrimination. Solving the crisis will be challenging, as the root cause is a combination of 1) issues that are deeply rooted in history, known as structural determinants of health and 2) healthcare-related racism.[57, 58, 59]

The correction of structural determinants of health, which have resulted in severe health inequities, is not a singular issue or simple fix, but steps can and need to be taken to ameliorate these public health concerns and continue deconstructing systems that perpetuate health inequities, and racial discrimination. Interventions to address maternal health equity should explicitly include a focus on the legacy of racism and social determinants of health. These strategies include confronting implicit bias and improving cultural humility in healthcare, integrating the social determinants of health and health disparities into medical and health professions curricula, understanding the impact of structural racism on health outcomes, and incorporating a health impact assessment on the development, implementation, and evaluation of maternal health policies and programs with a goal of reducing health disparities and inequities.[60]

CONCLUSION

As maternity care deserts continue to expand with each closure of a rural hospital and obstetric unit, pregnant women and mothers across the country bear the burden in the form of greater risk of maternal mortality and morbidity. Policymakers need to consider a comprehensive approach to fixing the way we deliver maternal healthcare in rural America because there is no simple solution to address the rising maternal mortality rate. By rethinking maternal healthcare teams, we can start to address provider shortage areas and improve access to care. Improving access to prenatal and postpartum care will keep mothers and their babies safe throughout pregnancy and birth, and help reduce the over 80% of preventable pregnancy-related deaths. Moreover, advancing maternal health equity will help reduce the racial disparities faced by Black mothers and ensure that all women have equitable access to healthcare during and after pregnancy.

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