

# Accelerating Affirmative Maternal Health Outcomes

How technology enhances, amplifies and expands vital midwifery practices



Although largely preventable, the rates of maternal morbidity and mortality (MMM) in the U.S. have been increasing since 2000. The statistics are even more grim for the United States' Black/African American and American Indian/Alaska Native women, who are two to three times more likely to die during pregnancy or childbirth compared to their white counterparts. This is in stark contrast to other wealthy, developed countries. Case-in-point: the U.K.'s MMM rate is nearly three times lower, even with an approximate 20% non-White British, minority/ethnic population.

One discernible commonality across countries with low MMM rates is the number of midwives: approximately 10 percent of U.S. births involve midwives, far behind other industrialized countries, where midwives participate in half or more of all deliveries. Additionally, in the U.S.,

Cesarean sections make up approximately 32% of all births, much higher than the World Health Organization's (WHO) recommended 10 percent. With less than 13,000 midwives, this country is one of the only developed nations with more ob-gyn doctors than midwives.

And yet, integrated midwifery care is proven to reduce maternal mortality rates. The WHO endorses midwives as an evidence-based approach to reducing maternal mortality. The organization cites research which revealed that midwifery-led care for women with healthy pregnancies is comparable or preferable to physician-led care in terms of maternal and neonatal outcomes, more efficient use of health system resources, lower use of potentially harmful interventions such as C-sections, and improved patient satisfaction and maternal psychosocial well-being.

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## Demonstrated outcomes

Pre-dating all medical fields, midwifery is a time-honored practice with roots as far back as 40,000 B.C., when women observed other mammals in order to support themselves through pregnancy and childbirth in life-threatening environments. From the Greco-Roman era to the Māori of New Zealand, from Asia and across Africa, midwives have supported women in crucial sexual, reproductive, infant, and adolescent health care, in the context of cultural traditions and norms for millennia.

Despite this fundamental role, beginning in the early 20th century, midwifery in the U.S. fell out of favor as a pathology-oriented medical model of pregnancy and childbirth gained ground. This evolution was characterized by a marked shift in focus from emphasis on the mother to solely concentrating on the fetus. Today's ob-gyns are trained to identify and

intervene in abnormal conditions and typically provide care in hospital-based settings. In contrast, midwives keep women at the center of care by building longer-term relationships that encompass the social and personal needs of mother, baby and family. They help manage normal pregnancies, provide early identification of potential complications, and aid with valuable post-partum care.

Now, with unacceptable MMM rates, the vastly underappreciated role of midwife is more important than ever. In fact, the United Nations Population Fund's The State of the World's Midwifery 2021 report finds that the world faces a shortage of 900,000 midwives and that investing in this practice could save 4.3 million lives every year. As U.S. policymakers and health care delivery system leaders seek ways to improve maternal health outcomes, they introduced the Midwives for MOMS Act. The legislation aims to increase the number of midwives by establishing two new funding streams for accredited midwifery education programs. It takes deliberate steps to address the health disparities that disproportionately impact Black, Brown, and Indigenous mothers and pregnant and birthing people by prioritizing grant funding to midwifery programs.

## Technology: broadening midwifery value and impact

As a whole, the healthcare industry is transforming to improve quality of care while reducing costs, a trend accelerated by the COVID-19 pandemic. Technology is being deployed to make care accessible from anywhere, reduce reliance on transportation as a condition of care, help identify signs and symptoms earlier, and give providers more information to improve diagnosis and speed time-to-treatment.

In particular, midwives can use technology to support practice management, access and share evidence-based information, communicate with mothers and their families, and provide resources, tools and education to their clients. Digital healthcare platforms help midwives to augment and broaden their essential services and bridge five key gaps in maternal care.

### 1. Close gaps caused by healthcare shortages.

The Association of American Medical Colleges projects an estimated shortage of between 54,100 and 139,000 physicians by 2033, a trend mirrored in a global shortage of healthcare workers, particularly nurses and midwives, who represent more than 50% of the current shortage of health workers. Technology enables midwives to fill more of this gap, by taking on more patients and accepting patients within an expanded geographic area, to provide coverage for women in healthcare deserts.

Even in urban areas, access to ready, reliable transportation can be a challenge. For many women, the burden of travel and time away from work or family

responsibilities is difficult. Telehealth allows healthcare providers, including midwives, to connect with, talk to and monitor more patients, providing improved quality of care regardless of location.

Finally, technology enables midwives to expand their practices by automating routine tasks or making them remote, easing case management tasks, and enabling them to take on more patients.



### 2. Close gaps in continuity of care.

Midwives provide necessary post-partum care, critical because more than half of maternal deaths occur after birth. And while the WHO recommends at least four health contacts in the first six weeks after birthing, U.S. women typically have a single office-based physician visit within this period, and some don't have one at all. Research shows that home visits by a midwife are associated with improved mental health and breastfeeding outcomes as well as reduced health care costs.

Intended to ensure the physical and emotional recovery of mothers and their babies, home-visit postpartum care gives providers an opportunity to address mental health concerns. It also allows them to assess Social Determinants of Health (SDoH), including needs for food, housing, financial security and protection from domestic violence. Digital solutions such as integrated video chat can help fill some of this void, providing care and guidance, connecting women to a broader community of people in similar circumstances, and supplying access to local resources.

### 3. Close gaps in maternal risk landscape.

While midwives traditionally work with low- to moderate-risk pregnancies, remote monitoring can help them identify potential escalations earlier, facilitating faster intervention, and ultimately, help prevent serious complications. Blood pressure monitoring devices, fetal dopplers, blood sugar checks and recommended digital scales are simple ways that can provide near real-time tracking of expectant mothers' health outside of a clinical setting.



In addition to physical risks associated with pregnancy, women also encounter physiological, emotional and socio-economic risks during and after pregnancy. SDoH are the conditions where we are born, live and work, and encompass risk factors that create and sustain health disparities. As midwives are part of their local communities, they reflect the culture, strengths and vulnerabilities, enabling them to better shape and deliver effective interventions to meet the needs of patients and their families.



Digital health applications are uniquely suited to address SDoH by providing easy access to credible information from trustworthy sources. These platforms can also offer links to social services including family support, transportation, job loss, food resources, domestic violence support and suicide prevention.

#### 4. Close gaps in quality of care.

A significant challenge facing maternal health providers is a rampant dearth of trust based on perceived lack of provider empathy. One in six women reported experiencing mistreatment during childbirth. Midwives address this with face-to-face, hands-on practice. They can also leverage technology as a valuable complement to providing seamless service and giving women greater access to education and information so they can make informed decisions about their care. At-home self-monitoring is empowering for women as well. Coupled with educational resources, it helps them understand what's normal, recognize early warning signs and be stronger self-advocates. With a midwife's guidance, women can take control of their health and pregnancy in unprecedented ways.

Digital solutions bring midwives and the broader medical team closer to patients and help make healthcare more equitable across all segments of the population. Even if a woman misses an appointment, a dashboard is just a click away, with access to a broad spectrum of data from blood pressure to their mood to nutrition.

#### 5. Close gaps in practice profitability.

Midwives can utilize digital health platforms to offload some of the necessary but non-profit-yielding aspects of

their services. For instance, pregnancy, labor, delivery educational materials and resources, diet, nutrition, exercise coaching and assets, and information related to understanding, identifying and preventing contributors to high-risk pregnancy can all be provided and/or supplemented via digital solutions.

In the U.S., 95 percent of adults aged 18 to 49 own a smartphone, underscoring the fact that women of child-bearing age are already comfortable with, and even dependent on, these tools, making them more likely to seek information using them. By offloading these services, midwives can take on additional patients.

Additionally, because midwives are compensated for the actual delivery of the child, it's critical that patients do not become high-risk, requiring transfer to an acute-care hospital equipped to handle complicated deliveries and, if needed, perform C-sections. The educational and support resources that digital solutions offer provide the awareness-building needed to help reduce the number of pregnancies that move into the high-risk category.



## Summary

Midwives offer an imperative and proven resource to reverse these trends, and digital healthcare solutions give them valuable tools to amplify, expand and enhance their life-giving and life-preserving practices. To make this feasible, midwifery services must be better reimbursed and equipped. Technology must be seamlessly integrated into the practice of midwifery so that digital solutions can be used to offload some essential non-clinical tasks that midwives provide but for which they are not receiving compensation. In this way, midwives can also assist in the broader screening of patients. Based on a well-documented volume of evidenced-based research, all indicators for quality care exist through midwifery. As a professional and recognized discipline, in combination with doula services and clinically appropriate applications of technology, midwifery-assisted births throughout the country have a tremendous amount of potential for positive outcomes and experiences.



## A Solution in Action: Happy Mama

Designed for and with pregnant women, Happy Mama is the first fully comprehensive biopsychosocial wellness platform for maternity care. The platform collects and monitors both clinical and essential non-clinical data. Much more than an app, Happy Mama offers an innovative, personalized response to the unique needs of women from pre-conception through pregnancy, labor and delivery, and up to 12 months postpartum. Happy Mama broadly consists of two components: a mobile app to guide patients through their maternity care journey; and a backend platform for clinicians and other maternal healthcare professionals to connect, communicate and collaborate. The platform enables healthcare providers to leverage data cohesively across reproductive health and pregnancy specific use cases, as well as enables service delivery through text chat and video conferencing for maternal health purposes.

Happy Mama is hosted on a cloud platform that is readily available from anywhere by anyone with Internet access. It allows patient data that is captured at home via the Happy Mama App to be viewed by providers within their EHR or through the Happy Mama dashboard at the point of care.

Grounded in science, Happy Mama combines robust technology with maternal health education from the American Heart Association, American Medical Association, Release the Pressure and Visual Health Solutions as well as a variety of partners in physical, mental, emotional, self-developmental and social-economic well-being. Beyond vitals, Happy Mama addresses the social determinants of maternal health, building the confidence of expectant moms and their care teams.

In recognition of design and engineering excellence, Happy Mama was named a CES® 2022 Innovation Awards Honoree.

### About Reach

Established in 2016, REACH is a 501c3 global social impact organization whose mission is to improve the healthcare experience for patients and providers. Reach is focused on sustainable, large-scale improvements in the delivery of care and in the health journey of all people through research, education, thought leadership, and innovation.

Reach is the founder of Happy Mama (<http://happymama.global>) - Winner of the CES 2022 Tech Innovation Award.

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