



Vernix Veritas: Women's Health Cooperative of Iowa

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Vernix Veritas, is a Black-owned cooperative, founded by local Black women, with the aim to increase healthcare representation and direct health access and education for diverse families in Iowa: “We ground our work in communal care by building a network of providers passionate about closing the gap in health disparities plaguing diverse families. We see an opportunity to build a collaborative space that transforms and strengthens healthcare delivery for underserved communities.”² Their primary focus is to improve health care and access for the uninsured, and the underinsured that is safe, affordable, cultural-based, and sensitive to different racial/ethnic groups and backgrounds. They work with communities in need, to close the gap in health disparities across the Greater Des Moines and surrounding areas.

Reproductive and maternal health are among the most important indicators of health and development within nations. Child-Maternal health refers to the health and wellbeing of women before and during pregnancy, childbirth, and the postnatal period. Each phase should be experienced in a positive environment, in which women and their newborns are able to reach their full potential for physical and mental health.³

Most maternal deaths can be prevented when effective treatment and care are provided in a proper and timely manner by a skilled group of health professionals. In the United States (US) it accounts for 80% of pregnancy-related deaths; more importantly, Black women are three times more likely than White women, to die from pregnancy-related causes. Patient centered care (PCC) ensures the consideration of the uniqueness of every pregnancy and childbirth, thus preventing possible complications, and tackling structural racism and implicit bias.⁴ Families from low- to moderate- income, especially black and ethnic groups, are affected disproportionately in this process and pose a greater and growing risk of serious maternal-child health issues. Social determinants of health can explain how many people from diverse racial and ethnic minority groups lack access to fair opportunities for economic, social, physical, and overall well-being.

The maternal mortality rate in the U.S. has increased in recent years, especially during Covid-19 there was an important increase from 2020 to 2021; nonetheless, in 2022 it

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² Rooted. Women of Iowa. <https://www.rootedwomeniowa.org/> (last accessed 14th May 2024)

³ World Health Organization. Maternal Health. https://www.who.int/health-topics/maternal-health#tab=tab_1 (last accessed 18th May 2024)

⁴ Center for Disease Prevention and Control. Working Together to Reduce Black Maternal Mortality. <https://www.cdc.gov/healthequity/features/maternal-mortality/index.html> (last accessed 15th May 2024)

went back to the 2019 rate. The reasons for this increase have been linked to higher rates of obesity, and other comorbidities such as diabetes and heart disease, but also to insufficient supply of maternity care providers, and to a lack of access to comprehensive postnatal care and support.⁵ In addition, rates of preterm birth and low birthweight in the U.S. are also among the highest in comparison with other industrialized nations; also, in comparison to White newborns, infants born to Black mothers were found to be two times more likely to die in their first year and more likely to be premature, have low birthweight, and be more at risk with other factors associated with infant mortality.⁶ In 2022, the National Center for Health Statistics (CDC) reported that in Iowa, the rate for Cesarean delivery was 29.6, 10.23 for preterm birth and 7.18 for low birthweight.⁷

Similarly, U.S. maternal mortality rate compared to other high-income countries is more than six times higher, and the three leading causes in Iowa were preeclampsia/eclampsia, hemorrhage, and mental health issues (i.e. suicide and substance abuse). Also, in 2022, about 1 in 7 babies were born to a mother receiving inadequate prenatal care.⁸ It has been determined that many of these preventable deaths were related to a failure of the health care system in detecting or preventing pregnancy-associated health concerns, and this could be related to the provider not being able to recognize, communicate or treat an issue, in addition to possible discrimination.⁹

One trending community and evidence-based strategy for pregnancy care, is to provide access to community care providers (CCP) such as Doulas, to account for the lack of health professionals. But also, because Doulas represent a racial and ethnically diverse group of professionals supporting various issues such as the fear and anxiety that comes with pregnancy and postpartum, they can include culturally adequate support to tackle health disparities among their patients. This type of CCPs is an evidence-based method for reducing maternal mortality and morbidity, and they are competently trained and accredited to be able to offer advocacy, education, and emotional support to the patients throughout this period with a PCC approach.¹⁰

It has been suggested that some of the main issues in the context of an institutional modern approach to maternal care, might be the insufficient staff, the burden of the

⁵ John Elflein, Feb 21, 2024. Statista: Women's health - Statistics & Facts. <https://0-www-statista-com.biblioteca-ils.tec.mx/topics/3312/women-s-health-in-the-us/#topicOverview> (last accessed 14th May 2024)

⁶ Alvarado, G., Schultz, D., Malika, N., & Reed, N. (2024). United States Doula Programs and Their Outcomes: A Scoping Review to Inform State-Level Policies. *Women's Health Issues*.

⁷ CDC/National Center for Health Statistics. May 22, 202. Iowa. <https://www.cdc.gov/nchs/pressroom/states/iowa/ia.htm> (last accessed 14th May 2024)

⁸ Elizabeth Cohen. May 2, 2024. STAT: U.S. maternal mortality rate dips, but will the trend continue? <https://www.statnews.com/2024/05/02/maternal-mortality-rate-united-states-decrease-2022/> (last accessed 14th May 2024)

⁹ Sophia Heimowitz & Courtney Joslin. Feb 26, 2024. Navigating Women's Health: Iowa <https://www.rstreet.org/research/navigating-womens-health-iowa/> (last accessed 16th May 2024)

¹⁰ Johnson, D. N., Patel, S., Howard, E. D., & Bowley, M. R. (2024). Critical Changes in the Maternal Health Landscape: Community Care, Doulas, and Coverage. *Nursing for Women's Health*, 28(1), 23-29.

work load by the health care providers and, the difficulties to manage the many different activities around the actual child birthing experience (i.e. administrative activities, the number of patients, etc.), that can affect the quality of the support the mothers have access to during this time. A Doula may provide the individual support needed and recent studies have shown that it was associated with positive outcomes such as reduced cesarean sections, premature deliveries, length of labor, reduce anxiety and stress; and specifically in low-income women, was shown successful to improve and continue breastfeeding even weeks after childbirth.¹¹ Some studies also found a decrease in the rates of intrapartum maternal fever and gestational hypertension.¹²

As a result, Vernix Veritas aims to “prioritize establishing midwifery care, doula services, lactation and mental health support, skill centers, support groups, and general wellness services”. They do this by, implementing cost-efficient, evidence-based intervention and prevention strategies, to reduce maternal and infant mortality, reproductive health disparities, and overall improve health and well-being with a PCC approach. To this day, their collaboration has reached over 100 women, families, and providers nationwide.²

SIZE OF PROBLEM

Despite the high rates of maternal-child morbidity and mortality, there is a necessity for CCPs all over the US, and this is related to a decline in the rate of physicians and OB-GYNs, with 9.1 and 3.8 respectively per 10,000 women of reproductive age in Iowa. This is a decrease from the 10.5 and 4.1 in 2017, respectively. In Iowa, 71% of counties have no practicing OB-GYNs and 90% of all counties have less than three; in total, in 2020, the state only had 231 practicing OB-GYNs.⁹ In summary, Iowa rates rank last in the nation for number of OB/GYN providers per 10,000 women.¹³

Doula services are normally paid out-of-pocket, and it may be more accessible to higher-educated woman who can afford it. Researchers have estimated that the cost for these services can be up to \$1,800 per patient for a private CCP. It was also documented that, cost savings can result from the addition of doula CCP coverage of commercial and Medicaid insurance.¹⁴

¹¹ Sobczak, A., Taylor, L., Solomon, S., Ho, J., Kemper, S., Phillips, B., Jacobson, K., Castellano, C., Ring, A., Castellano, B., & Jacobs, R. J. (2023). The Effect of Doulas on Maternal and Birth Outcomes: A Scoping Review. *Cureus*, 15(5), e39451. <https://doi.org/10.7759/cureus.39451> (last accessed 15th May 2024)

¹² Crawford, A. D., Carder, E. C., Lopez, E., & McGlothen-Bell, K. (2024). Doula Support and Pregnancy-Related Complications and Death Among Childbearing Women in the United States: A Scoping Review. *Journal of Midwifery & Women's Health*, 69(1), 118-126.

¹³ Iowa Department of Public Health. Bureau of Family Health. 2019 OB Summit Report: A Summary Report to Promote Action. Des Moines: Iowa Dept. of Public Health, 2020. Web. <http://idph.iowa.gov/familyhealth/maternal-health> (last accessed 15th May 2024)

¹⁴ Johnson, D. N., Patel, S., Howard, E. D., & Bowley, M. R. (2024). Critical Changes in the Maternal Health Landscape: Community Care, Doulas, and Coverage. *Nursing for Women's Health*, 28(1), 23-29.

The report titled "Access to prenatal care, selected behaviors, and selected birth outcomes by Medicaid status among Iowa resident births 2016 – 2020" indicates that African American/Black pregnant women who received Medicaid reimbursement initiated prenatal care in the first trimester less frequently (68.5%) compared to White, Non-Hispanic women (82.2%). Furthermore, the report also underscores disparities in lactating initiation rates, with African American/Black mothers whose births were reimbursed by Medicaid reporting lower rates (70.2%) compared to White, Non-Hispanic women (75%) at hospital discharge.

HU ESTIMATION

This evaluation provides an approximation to the Size of Problem (SOP), using the Hu calculation for Doula access for the number of pregnant women giving birth in 2022 in the state of Iowa. In 2022, the CDC reported 36,506 childbirths in Iowa.⁷ Noting that the average of pregnant women that Vernix Veritas attends per year is 4, that would require 9127 trained Doula to meet Iowa’s needs for CCPs (0.25 Units per Hu). The calculated Hu value for this population was 4, indicating a moderate level of healthcare requirements for pregnant women.

Using the number of people per Hu estimate equal to users per Hu as presented above, the following table provides the estimated Hu generated by Vernix Veritas for the services provided for holistic care in prevention of unfavorable Maternal-Child outcomes and to close the gap in education and advocacy for pregnant women from different backgrounds.

Number of Doula	Hu per year	Hu Value Low [1]	Hu Value High [2]
100	400	\$26,800	\$596,800
300	1,200	\$80,400	\$1,790,400
1,000	4,000	\$268,000	\$5,968,000
3,000	12,000	\$804,000	\$17,904,000
10,000	40,000	\$2,680,000	\$59,680,000
40,000	160,000	\$10,720,000	\$238,720,000

[1] Low value is based on EGDM auction data from 2023, resulting in a Hu valuation of \$67 per Hu

[2] High value is based on a 2024 Q1 EU ETS carbon pricing, resulting in a Hu valuation of \$1492 per Hu

ESTIMATION UNCERTAINTIES

Although, CCPs Doula programs may have some evidence as a proven approach to address the negative environments, outcomes and childbirth experiences faced specially by migrant women in high-income countries, there is still some questions that remain regarding the actual impact of these strategies, due to the differences in maternity settings, community or institutionalized doula, the design and length of the intervention programs, the actual reach of these services and its cultural and adequate approach. Some questions have been raised about the implementation of Doula as CCPs and if it is a cost-effective or cost-saving alternative to standard care. Moreover, there is a

pressing demand for enhanced quality research incorporating suitable models and a diverse population to accurately evaluate these matters and facilitate the effective expansion of these programs.¹⁵

Another issue regarding the assessment of the problem is the inconsistency in data collection methods for maternal death counts, primarily relying on birth and death certificates, which overlooks individual circumstances and the underlying causes. In recent years, the adoption of a "pregnancy check box" on death certificates by some states has led to a significant increase in reported mortality rates (tripled). However, this method excludes deaths related to violence or mental health issues (such as suicide and overdose), which are among the leading causes of maternal mortality and associated comorbidities.¹⁶

OPPORTUNITIES FOR SCALABILITY

While conclusive evidence of the Doula program's impact is still lacking, its potential benefits are apparent, particularly in addressing shortages in healthcare providers and OB-GYNs. These programs could provide a viable solution, especially within racial or ethnic communities, rural areas, or communities with migrant populations facing language barriers. Moreover, they have the potential to raise awareness of cultural differences and advocate for various racial or ethnic communities, ultimately enhancing the experience and environment for pregnant women and their children.

OPPORTUNITIES FOR REFINEMENT

This analysis needs to be revisited to examine the maternal health outcomes data for the years 2022 and 2023 in the state of Iowa. This is particularly important due to significant changes in healthcare access and subsequent health outcomes following the COVID-19 pandemic, which has had a notable impact on overall population health. Additionally, it should include an examination of the outcomes of the Doula Project initiated by The Bureau of Family Health (BFH) to support Black women in four Iowa counties. The project aims to assist clients in accessing timely prenatal care through funding to Title V Maternal Health agencies. These agencies provide support and referrals for pregnant women to access prenatal care and have established tracking of mechanisms for maternal health outcomes to establish the case for insurer reimbursement of doula services.¹⁷

¹⁵ Martin, E., Ayoub, B., & Miller, Y. D. (2023). A systematic review of the cost-effectiveness of maternity models of care. *BMC Pregnancy & Childbirth*, 23(1), 1–9. <https://doi.org/10.1186/s12884-023-06180-6>

¹⁶ Annalisa Merelli. July 11th 2023. STAT: Why maternal mortality is so hard to measure — and why the problem may get worse. <https://www.statnews.com/2023/07/11/maternal-mortality-hard-to-measure-and-that-may-get-worse/> (last accessed 15th May 2024)

¹⁷ Iowa Department of Health and Human Services, Bureau of Family Health. Access to prenatal care, selected behaviors and selected birth outcomes by Medicaid status, Iowa resident births 2017 – 2022. Des Moines: Iowa Department of Health and Human Services, 2022.