



Rock County Better Birth Outcomes: Impact Evaluation



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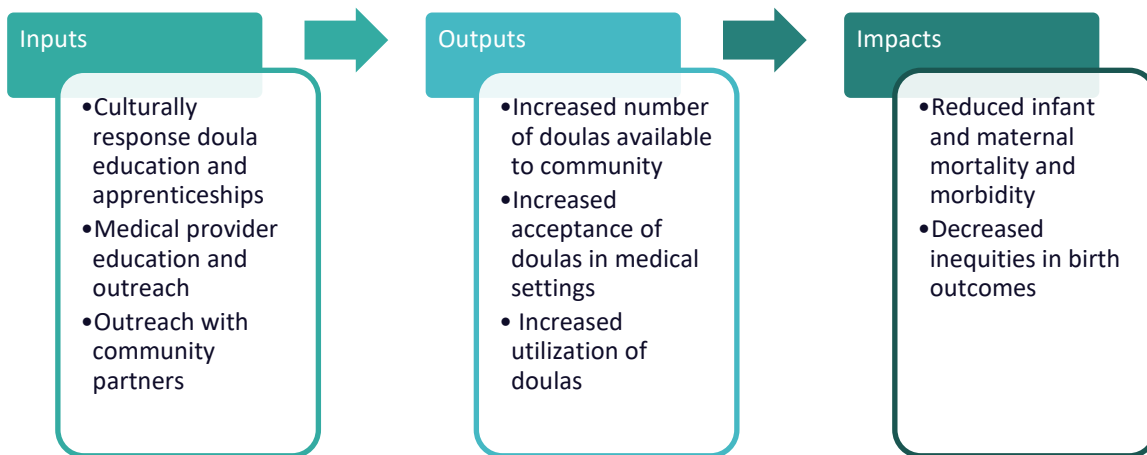
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Theory of Change

The goals of the Rock County Better Birth Outcomes program included a) creating a pipeline for culturally responsive education and apprenticeships to become trained doulas and b) increasing the acceptance of doulas in the community and medical settings. The theory of change motivating these goals is that these interventions will ultimately increase the availability and utilization of doulas, and increase their effectiveness by improving acceptance by medical professionals and promoting their integration into the care team. Based on previous evidence for the benefits of doulas, the expected intermediate impact of these activities would be improved birth outcomes, specifically among birthing people served by doulas, and eventually at the population level, resulting in decreasing racial inequities in infant and maternal morbidity and mortality.



EVIDENCE FOR DOULA SUPPORT

Doula care during the prenatal, peripartum, and postpartum periods is one strategy that has been studied to improve birth outcomes and address persistent racial inequities in reproductive health. To date, there is evidence that doula care has the potential to decrease rates of cesarean delivery¹ and instrumental vaginal delivery,² decrease rates of low birthweight,³ increase rates of breastfeeding initiation,⁴ increase APGAR scores at 1 and 5 minutes,⁵ and decrease risk of postpartum mental health issues.⁶ While doulas may provide benefits to all birthing people, those who have a higher baseline risk of negative health outcomes may have to the most to gain from doula support.

¹ Kozhimannil, K. B., Attanasio, L. B., Jou, J., Joarnt, L. K., Johnson, P. J., & Gjerdingen, D. K. (2014). Potential benefits of increased access to doula support during childbirth. *The American journal of managed care*, 20(8), e340.

CLIENT RECRUITMENT AND CHARACTERISTICS

While the focus for recruitment for free doula services was on Black birthing people, the only eligibility requirement was that the birthing person was eligible for and enrolled in Medicaid at the time of their pregnancy. (Referrals received for people who were covered by other forms of insurance were then referred to other doula services.) Promotional activities for the Better Birth Outcomes program also emphasized referrals for pregnant people who were experiencing life stressors or otherwise at higher risk for poor birth outcomes.

Table 1. Demographic Comparison between 2022 Rock County Births and Doula Clients

	2022 Rock County Medicaid births ⁷		Doula clients	
Race				
American Indian/Alaska Native	<5	0%	0	0%
Asian	9	1%	2	8%
Black/African American	90	12%	9	36%
Multiple Races	50	7%	1	4%
Hispanic	186	26%	2	8%
White	391	54%	10	40%
Unknown	0	0%	1	4%
Age				
15-19	66	9%	1	4%
20-24	199	27%	5	20%
25-29	225	31%	7	28%
30-34	146	20%	8	32%
35+	92	13%	3	12%
Unknown	0	0%	1	4%

Black birthing people were significantly more represented among the doula clientele than in the Medicaid-enrolled birthing population in Rock County in 2022 (comprising 36% of clientele, compared with 12% of the eligible births), indicating that the program was successful in recruiting

² Fortier, J. H., & Godwin, M. (2015). Doula support compared with standard care: Meta-analysis of the effects on the rate of medical interventions during labour for low-risk women delivering at term. *Canadian Family Physician*, 61(6), e284-e292.

³ Gruber, K. J., Cupito, S. H., & Dobson, C. F. (2013). Impact of doulas on healthy birth outcomes. *The Journal of perinatal education*, 22(1), 49-58.

⁴ Hans, S. L., Edwards, R. C., & Zhang, Y. (2018). Randomized controlled trial of doula-home-visiting services: impact on maternal and infant health. *Maternal and child health journal*, 22(Suppl 1), 105-113.

⁵ Campbell, D. A., Lake, M. F., Falk, M., & Backstrand, J. R. (2006). A randomized control trial of continuous support in labor by a lay doula. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 35(4), 456-464.

⁶ Falconi, A. M., Bromfield, S. G., Tang, T., Malloy, D., Blanco, D., Disciglio, R. S., & Chi, R. W. (2022). Doula care across the maternity care continuum and impact on maternal health: evaluation of doula programs across three states using propensity score matching. *EClinicalMedicine*, 50.

⁷ Wisconsin Dept. of Health Services, Division of Public Health, Office of Health Informatics. Wisconsin Interactive Statistics on Health (WISH) data query system, <http://dhs.wisconsin.gov/wish/>, Birth Counts Module, accessed 7/7/2024.

their focus population. The age distribution of the doula clients largely mirrored that of Medicaid-enrolled birthing people in Rock County in 2022, although clients were slightly older on average, compared with the overall population.

DOULA SERVICES DELIVERED

The model of doula services that was funded by Wisconsin Partnership Program included two to three prenatal visits with the doula, accompaniment and support during labor and delivery, and two to three postpartum visits with the doula. The amount and type of support offered by the doulas varied according to the needs of the birthing person. Due to differences in the timing of program enrollment, not all clients received the same number of prenatal visits. Doulas attended the labor and delivery of all of the clients but one (who had a very quick labor and did not call her doula).

Much of the evidence for the benefit of doulas is related to the continuous emotional support during labor. This was evident in the client notes of the BBO doulas:

“[Client] has extreme anxiety. One of the biggest things we helped with as doulas was keeping her grounded and help her battle negative thoughts. She had an extreme fear of dying during delivery. *She said she was and I almost thought for a second she was going to have a panic attack after the baby was born. Thankfully she did not!”

“My client was asking me questions about what to expect during and after the c-section if she got one. I suggested we have the nurse come in and explain. The nurse did and it was so helpful and calmed family fears. Much better than assuming and guessing.”

In addition to emotional support provided throughout the perinatal and postpartum periods, BBO doulas offered concrete support through education, physical comfort, and connecting clients with other services:

“I never tell a client what to do but I do remind the client they have the option to wait and decline... At one point I suggested the client ask for a check before deciding to start Pitocin. Asking for that check and seeing she was progressing naturally ended up being a good thing because that blood pressure was an issue and the baby’s stress... the impact of Pitocin (I think) could have made things feel even more intense.”

“I was able to bring her one car seat and a few bags with a bunch of baby things and things for her daughter after grabbing these items from the Janesville Pregnancy Helpline. (Being able to look through these items made her so happy 🤍)”

When asked what could have been better about the doula services, clients said they would have liked more time or visits with their doula, and one client wished the doula had engaged more with their partner.

CLIENT OUTCOMES

Nine clients (of 25 with data available for the grant period) completed a survey regarding their experiences with the doula provided through Rock County Better Birth Outcomes. Of those who responded to the postpartum survey, all said that they would choose this doula again and 8 out of 9 said that having a doula present increased their birth or postpartum comfort and confidence overall. Of those surveyed, 6 named emotional support as the value offered by the midwife, 4 named information and resources, and 3 named physical support.

By design, doulas were matched with pregnant people who were higher risk for poor birth outcomes due to existing health issues or social factors. For example, of the clients for whom we have data, at least 3 of the clients served were experiencing homelessness at the time of the birth, at least 5 had a history of significant abuse, at least 7 had existing mental health issues, and at least 7 had a history of pregnancy loss (miscarriage or stillbirth). Therefore, comparing the outcomes of these individuals to the general population of birthing people in Rock County should be done with care.

Given the significant challenges faced by the doulas' clients, it is reasonable to expect that in the absence of doula support, they would have a higher likelihood of poor outcomes than the average Medicaid-eligible birthing people in Rock County. Therefore, if we observe outcomes among the doula clients that are similar to or better than those among all birthing people in Rock County, it would indicate that it is plausible that doula support provided some benefit to these clients. However, since it is not possible to know how their experiences would have been without the support of doulas, we cannot make causal claims.

In the following tables, we compare outcomes for all Medicaid-paid births to Rock County residents in 2022 with the outcomes for the 26 babies born to the 25 doula clients for whom we have data (there was one set of twins) alongside the outcomes for 2022 Medicaid-paid births in Wisconsin and the United States. We are not able to provide comparisons by race due to low numbers of doula clients in each racial group. Compared to all US Medicaid-paid births in 2022, Rock County Medicaid-paid births had some better outcomes, including higher rates of breastfeeding initiation (76% versus 69%) and lower rates of NICU admission (9% versus 11%).

Medicaid-paid births to Rock County residents are the closest comparison group for BBO doula clients because all Medicaid-covered pregnant people in Rock County were eligible for the program. Statistically speaking, there are no significant differences between the outcomes for the overall Medicaid-enrolled birthing population in Rock County in 2022 and the doula clients (at the 95% confidence level). This lack of difference may be in part due to the small sample size of the doula clientele; nonetheless, it is encouraging that the doula clients, many of whom were facing significant social and health difficulties, had outcomes similar to their Medicaid-enrolled peers. Additionally, not even one of the 26 babies born to the clients had a low five-minute APGAR score (≤ 7 on the scale that assesses newborn health), despite the fact that Rock County Medicaid-paid births had higher rates of this than the US population (7% versus 5%).

Table 2. Birth Outcomes Comparison of BBO clients with US, Wisconsin, and Rock County Medicaid-paid births

	2022 US Medicaid paid-births ⁸		2022 Wisconsin Medicaid-paid births ⁸		2022 Rock County Medicaid-paid births ⁸		BBO Doula clients	
	n	%	n	%	n	%	n	%
Induction of labor								
Yes	463033	31%	7731	38%	231	32%	9	35%
No	1038145	69%	12702	62%	492	68%	14	54%
Unknown	974	0%		0%	5	0%	2	8%
Delivery mode								
Vaginal	1024892	68%	14877	73%	503	69%	13	50%
Cesarean	476654	32%	5550	27%	225	31%	12	46%
Unknown	706	0%	22	0%	0	0%	1	4%
Gestational Age								
Extremely/Very Preterm								
Preterm	34813	2%	163	1%	13	2%	1	4%
Preterm	179774	12%	2656	13%	89	12%	2	8%
Normal	1286557	86%	17591	86%	623	86%	21	81%
Unknown	1008	0%	28	0%	3	0%	2	8%
Breastfeeding initiated		%		%		%		%
Yes	1041923	69%	14631	72%	554	76%	18	69%
No	280821	19%	5428	27%	171	23%	4	15%
Unknown	179408	12%	390	2%	3	0%	4	15%
NICU admission								
Yes	157794	11%	2470	12%	67	9%	3	12%
No	1341915	89%	17959	88%	658	90%	23	88%
Unknown	2443	0%	20	0%	3	0%	0	0%
Birthweight								
Low	153485	10%	2169	11%	76	10%	3	12%
Normal	1347751	90%	18280	89%	652	90%	23	88%
Unknown	916	0%	0	0%	0	0%	0	0%
5-minute APGAR Score		%		%		%		%
Low (1-7)	68386	5%	1438	7%	50	7%	0	0%
Good (8-10)	1427446	95%	18969	93%	678	93%	26	100%
Unknown	6320	0%	92	0%	0	0%	0	0%

⁸ Natality 2016-2022. CDC Wonder. Accessed 2024 July 25 from < <https://wonder.cdc.gov/wonder/help/Natality-expanded.html#>>

HEALTHCARE SYSTEM OUTCOMES

In pre-surveys with health care providers, 7 of the 9 participants had worked professionally with a doula previously, four of whom reported positive experiences, and three of whom rated their experiences as “neutral.” When asked about their colleagues’ views on the impact of doulas, five of eight respondents said that they thought other staff at their organization expected positive effects from the presence of a doula, and three were unsure. Two of the nine respondents surveyed prior to the intervention identified increasing the number of racially and ethnically diverse doulas among the top 3 interventions that would reduce Black infant mortality in Rock County.

The experiences of the BBO doulas trying to attend births during the grant period illustrated the need for efforts aimed at improving the reception of doulas in the birthing suite. One of the BBO doulas noted at one of the births she attended:

“Upon arrival nursing staff were hesitant to let this writer attend birth and insisted on seeing certification of doula status in attend birth as a doula or be counted as a visitor. This writer had to meet with supervisor to obtain permission to stay.”

Overall, the doulas had mixed experiences with being welcomed as part of the birthing person’s care team. Increasing positive interactions between trained doulas and medical staff may help to improve the acceptance of doulas at future births. One of the BBO doulas wrote of her experience with one health system:

“Overall, I’m not certain where [Health System] is on their acceptance to doulas. I was prepared for them to ask one of us [doulas] to leave but thankfully they did not. We did a good job of supporting client and staying out of medical staff way. I didn’t feel like we were fully welcomed in that space. (At least not compared to [other health systems].) At the end the doctor shook our hands and thanked us. That was nice! “

Doulas also received positive reviews in surveys of health care provider staff who worked with them. Four of the five said they believed that the presence of the doula had a positive effect on the care of the birthing person (the fifth said they were unsure):

“Patient delivered according to her [the patient’s] plan. [The doula] advocated for her patient in a constructive way & helped her find her voice. I appreciated hearing from [the doula] as the patient's nurse & the patient appreciated having [the doula] supporting her.”

“The patient seemed at ease with the doula. The doula was very professional, she understood at times that I needed to interrupt in order to get my job done.”

However, respondents also noted a desire for more communication with the doulas, including introductions so they could understand the doula’s role with their client and follow-up from the program regarding referrals and knowing which of their patients were working with doulas.

Positive reception by medical staff is also important for the doula experience and their willingness to persist in an often-demanding role. In another case, a doula noted:

“The nurse told me it was nice to have me there. She said she’s seen bad doulas and good doulas and she put me in the good doula category LOL

“When I left for the night one of the other nurses when saying bye told me the attending nurse said it was nice to have me in the room. That was validating.”

Due to the small number of responses from healthcare personnel to the post-survey, it is not possible to conclude whether the BBO doula pilot program influenced the overall health care context in terms of reception of doulas. However, it does appear that individual health care workers who worked with the BBO doulas had positive perceptions of these doulas and their contributions.

ECONOMIC IMPACT

While there were not enough births in the program to reliably estimate the magnitude of the economic impact that doulas could have at scale based on the causal impact of doulas, national studies have analyzed available data across settings to create such estimates.⁹

Table 3. Estimated costs and rates for economic impact calculation

Cost of doula per birth	\$900
2022 Rock County Medicaid-covered births	728
Additional Medicaid payment for cesarean birth compared with vaginal birth:	\$4,459
Average additional cost of hospitalization for pre-term infant compared with term infant:	\$41,964
Rock County Medicaid cesarean rate:	31%
Rock County Medicaid preterm birth rate:	14%

Considering only the costs to the state Medicaid program, reductions in expensive medical interventions associated with doula support could generate significant savings. Assuming that a 37% reduction in unnecessary Cesarean delivery and a 24.2% reduction in preterm birth can be replicated

⁹ Eastburn A. Hubbard E, Mitchell A. A Cost-Benefit Analysis of Doula Care from a Public Health Framework. Bixby Center for Global Reproductive Health and the National Health Law Program. 2024. Accessed March 4, 2024. <https://healthlaw.org/resource/a-cost-benefit-analysis-of-doula-care-from-a-publichealth-framework/>

in Rock County based on evidence from previous studies, Medicaid could save \$1,933 on average per doula-supported birth. If Medicaid covered the cost of the doula, this cost would be subtracted from the \$1,933 to get the final cost savings per birth. If Medicaid paid \$900 each for doula support for all Medicaid-eligible births in Rock County in 2022, this could amount to an annual cost savings of \$752,161.

ROCK COUNTY MEDICAID SAVINGS ESTIMATES

Source of savings	Medicaid Cost Savings Per Event	Average cost savings per Medicaid birth with doula	Total annual Medicaid savings in Rock County
37% reduction in unnecessary Cesarean	\$4,459	\$511	\$372,333.63
24.2% reduction in preterm birth	\$41,964	\$1,422	\$1,035,026.95
Costs to Medicaid		Cost of doula	Total cost of doulas for all Medicaid births
Doula services		\$900	\$655,200
		Medicaid savings per doula-attended birth	Total annual Medicaid savings
		\$1,033	\$752,161

Medicaid could also see more distal cost saving associated with doula support, including less billing related to birth complications, which are more common with cesarean delivery and preterm birth, fewer emergency department visits, and fewer medical costs associated with longer-term health needs of infants born preterm.

Additional costs savings associated with doula support could also accrue to birth hospitals, related to the non-Medicaid covered costs of caring for preterm infants and conducting cesarean deliveries. Families could also benefit financially from fewer cesarean deliveries and more term infants.¹⁰ Vaginal birth requires less recovery time, allowing birthing people to return to their other family and work responsibilities sooner. The short- and long-term health needs of preterm infants also impacts the economic health of families through additional medical bills and missed work.

¹⁰ Institute of Medicine (US) Committee on Understanding Premature Birth and Assuring Healthy Outcomes; Behrman RE, Butler AS, editors. Preterm Birth: Causes, Consequences, and Prevention. Washington (DC): National Academies Press (US); 2007. 12, Societal Costs of Preterm Birth. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK11358/>

CONCLUSIONS AND RECOMMENDATIONS

Due to the small number of clients served by the BBO doula pilot program and limited health care professional engagement with pre- and post- surveys, we are limited in the conclusions we can draw about the impact of the BBO doula program in the short or intermediate term. However, at a minimum we can say that:

- 25 low-income birthing people in Rock County received free doula services
- The outcomes of these birthing people were no worse (on average) than Medicaid-paid births in Rock County, despite many of them having significant health and social challenges
- Reports from doula clients and health care professionals indicate positive impressions of the doulas, which could potentially contribute to higher future utilization of doulas and more acceptance and integration of doulas in health care spaces
- 3 new doulas also received training and mentorship through the BBO program, directly contributing to increasing the number of doulas available to Rock County birthing people
- If high-quality doula services are more widely available to Medicaid-eligible birthing people, this could result in significant cost savings for the state Medicaid program and health systems.

The intermediate and long-term impact of the BBO doula program on Rock County families will likely depend on sustained investment in providing free or low-cost, high-quality doula support to birthing people who need it most. Continuing to monitor the number of practicing doulas, the utilization of their services, and their acceptance into health care settings will be crucial for assessing the ongoing need for intervention and potential for impact.