

# Providing Maternity Care in a Rural Northern Iowa Community

Alexandria Kristensen-Cabrera, BS

Julia D. Interrante, MPH

Carrie Henning-Smith, PhD, MPH, MSW

Katy Kozhimannil, PhD, MPA

## Key Findings

- **Providing maternity care is a challenge in many rural settings; this case study from a hospital in rural, northern Iowa highlights two major factors that enable success: continuity of care and specialized nursing staff.**
- **Additionally, themes from this case study emerged around challenges to providing local maternity care: long travel distances, technology, and maintaining staffing and skills.**

## Purpose

This case study highlights how one rural hospital in northern Iowa has successfully sustained a maternity care practice and identifies opportunities for other rural hospitals and communities seeking to ensure local access to care for pregnancy and childbirth.

## Background

Women in rural areas have limited access to health care, including maternity care, and poorer outcomes than their urban counterparts.<sup>1</sup> The availability of hospital-based maternity services in rural U.S. counties has declined in recent decades.<sup>2</sup> Reasons for closing hospital-based obstetric units include financial challenges, workforce challenges, and low delivery volume.<sup>3,4</sup> Loss of these services, especially in rural U.S. counties not adjacent to urban areas, is associated with serious consequences, including an increase in preterm births and births in hospitals lacking obstetric units (relative to counties with continuous services).<sup>2</sup> Further, there are difficulties associated with safely transferring rural pregnant patients.<sup>5</sup> Clinicians may decide to transfer patients to another hospital if more advanced maternity or neonatal care services are needed.<sup>6</sup> However, hospital transfers could lead to delays in diagnoses and management of pregnant patients.<sup>7</sup> Delays in transfer and appropriate care may increase risk for severe maternal morbidity and mortality,<sup>7</sup> potentially exacerbating rural-urban disparities in maternal outcomes.

For this case study, we visited a hospital-based obstetrics unit in northern Iowa, located in a rural, non-core county. The unit is located within a critical access hospital that is affiliated with a larger regional health system in the area. This site was selected based on its positive birth outcomes and an established relationship with a member of the research team. According to the 2010 Census, the community is a predominately (95%) white town of about 8,000 people.<sup>8</sup> The median household income of \$37,000 is lower than the national median,<sup>8</sup> and the economy is mainly supported by farming and a local college. In 2017,

22.6% of births in this county were to unmarried women (compared to 35.4% statewide).<sup>9</sup> The obstetric unit we visited has a relatively low volume with approximately 250 deliveries per year. According to local clinicians, the most common maternal risk factors in their patient population include obesity, advanced maternal age, hypertension, and gestational diabetes.

This case study is based on a site visit that focused on rural maternity services and maternal transfers before and after birth. Focus group participants emphasized the importance of establishing continuity of care throughout the patient's lifetime, as well as having dedicated, experienced maternity nurses in sustaining their practice. Participants also shared suggestions for programmatic improvement of maternity care for their patients. The goal of this case study was to share lessons learned about the successful provision of local maternity care in a rural area via continuity of care and dedicated maternity nurses.

## Approach

This case study was part of a broader project focused on analyzing predictors of severe maternal morbidity and mortality by geography and developing recommendations to improve safety during childbirth in rural settings.<sup>10</sup> Two focus groups, one composed of maternity care clinicians (physicians and midwives) and the other of nurses, at a hospital-based obstetric unit in a rural county were held on August 12th, 2019. Each focus group lasted one hour. The first focus group was a convenience sample of six family medicine doctors who provide maternity care and one midwife. The second focus group was a convenience sample of five maternity care nurses, comprising approximately 40% of the total nursing staff on the maternity care unit. This sample comprised over 75% of the total maternity care clinician staff, including physicians and nurses, at the hospital. Four members of the team participated in the focus groups: C. Henning-Smith led the facilitation and A. Kristensen-Cabrera took notes for the physician/midwife focus group; K. Kozhimmannil led the facilitation and J. Interrante took notes for nurse focus group. Participation was voluntary, there were no financial incentives for participation, and we obtained consent from all participants.

The focus groups were centered on understanding unique aspects of this obstetric unit and factors surrounding the transfer of rural patients before and after

birth, especially as they relate to severe maternal morbidity. Through these, we also learned about general themes that contribute to the unit's overall success, the findings of which we focus on in this case study. The same set of questions were used for both groups. Focus group questions included:

1. Can you describe the transfer process?
2. Please describe the decision-making process that goes into treating patients at risk of severe maternal morbidity or mortality.
3. What are the risk factors or pregnancy complications you encounter most frequently in your clinical practice?
4. Please describe an example of a case [excluding identifying patient characteristics] involving maternal morbidity that resulted in a good outcome. What led to the good outcome?
5. What programs or resources do you think that state or federal governments have done or could do to help you provide high quality maternity care locally?

From these questions, participants highlighted the factors that positively and negatively impacted the level of care they can provide to their patients. Focus groups were recorded, detailed notes were taken, and we analyzed responses to identify key themes that emerged from the focus groups. An inductive approach was used to identify frequent themes that emerged. An important limitation is that this case study includes a small sample size of key informants from a single hospital. While the findings cannot be generalized, it may enrich conversations on sustainable rural maternal care and spur further investigation.

## Results

### Theme 1: Continuity of care

The maternity care clinicians at this site emphasized the importance of continuity of care in their practice. That is, they place a premium on having clinicians that

provide care consistently so that patients see the same person before pregnancy, during and throughout pregnancy, during labor and childbirth, and in the postpartum period. These clinicians develop strong relationships with their patients by seeing them across the lifespan, including throughout pregnancy, childbirth, and caring for the mother and child after delivery. One family practice physician explained how continuity provides several advantages:

*"We have detailed knowledge of our patients including their social situations, things that just cannot be surmised from a chart, making it easier to provide the best care. This is even more true if they are having complications as it is easier to understand and then manage their risk factors."*

Further, while there is always a back-up physician on call, in addition to a general surgeon who can perform cesareans, providers typically cover their own patient's deliveries. The clinicians at this site attribute much of their success in providing high-quality maternity care to this strong continuity of care.

When prompted in the focus group questions about transfer for more complicated cases, clinicians emphasized that transfers around the time of childbirth at this hospital are very rare. Nurses estimated that, on average, their hospital had about one transfer per month. A nurse explained her perspective:

*"I feel like intrapartum transfers we don't do very often because they are very good about pre-screening high risk patients, so unless something crazy happens, we aren't transferring patients usually."*

Another nurse explained how they keep track of all deliveries, including transfers for high risk patients to other hospitals:

*"Even those we are expecting to deliver elsewhere, we still have our little calendar and we will write on there you know delivering in [larger hospitals in the region 55-70 miles away], but they are still on our list just in case."*

Further, the process for transfers, by which a nurse

may also go with the mother who is transferred, sometimes requires calling an off-duty nurse to come in to accompany the transfer. Focus group discussions made evident that having clear communication with other hospitals is critical in difficult cases when the patient ultimately needs to be transferred.

One of the nurses described her own birth experience, where both strong communication and continuity of care from a nurse that transferred with her contributed to a positive birth outcome:

*"I can tell from my own experience. I was 33 weeks gestation and came in because I wasn't feeling well and developed HELLP syndrome [a serious pregnancy complication]. I went in the ambulance with a nurse up to [a tertiary care center], approximately 70 miles away] and the baby was born the next day... Once the doctors at the hospital here were able to identify that [HELLP syndrome] they called to [the tertiary care center], and I was accepted and that all worked out just fine. I was very satisfied with the transfer of care for the labor and delivery part of it. I think we can identify things quickly and get them to where they need to go quickly."*

Overall, successful outcomes in this case, and in general for this site, were attributed to good communication and working relationships within the obstetrics unit team, and between this hospital and receiving hospitals as well as clinicians who know their patients well and are dedicated to providing continuity of care.

## **Theme 2: Dedicated maternity care nurses who are skilled in managing labor and delivery**

The second key theme to emerge from both focus groups was the importance of having nurses who were dedicated to the maternity care unit. For example, a physician explained how it can be difficult to practice rural maternity care as there are fewer doctors and nurses overall, and some of them may be less experienced due to lower delivery volume in less populated areas. This environment increases the responsibility and time required for the doctor or midwife to provide maternity care. This doctor also noted how quickly an obstetric unit's staffing can change.

*“The place I left had five (clinicians) when I started, and after three years I was the only one left. It has a snowball effect.”*

In contrast, he explained, this hospital has experienced maternity care nurses, which relieves significant burden from the doctors/midwife. Additionally, the doctors/midwives and nurses work closely together as a team, with clinicians always on call to provide back-up care when needed.

Additionally, having dedicated maternity nurse staffing allows those nurses to hone their skills, which may not be possible for nurses who rotate through various units within a hospital. While nurses described how the unpredictable nature of deliveries can make it difficult to schedule nurses, the benefits of dedicated maternity nurse staffing outweigh the challenges. The nurses also commented on their integral role in the care process and the essential nature of their specialized skills in labor and delivery care:

*“A lot of that work relies on us and takes it off of [the doctors], so we are the ones caring for the patients primarily until we need the doctors.”*

These specialized skills are extraordinarily valuable to the physicians as well. In the focus group, one physician noted that he would likely have left maternity care practice were it not for the dedicated nurse staffing at the hospital.

### **Challenges for local maternity care**

The focus groups also illuminated multiple challenges related to providing maternity care locally in a rural community. These included:

*Travel distance:* Longer travel distances in rural communities can be a challenge, especially in time-sensitive situations. The distance between facilities range from one hour to multiple hours. Additionally, it takes time to align all the necessary activities involved with a transfer, in the rare cases when that is necessary. A doctor noted:

*“If they drive here and say we have to transfer you, by the time we get here, they come in, get the ambulance, get a driver, it’s 3 hours.”*

*Technology availability:* Additionally, there are areas for

improvement related to staffing of ultrasound technicians. Currently, ultrasound technologists are not available in the evening or on weekends because there is not enough overall volume to support this level of availability. A nurse explained:

*“If you have an OB emergency that you want an ultrasound for on the weekend or evening, those women are transferred, just because they need an ultrasound. There is no other reason they would need a transfer.”*

That is, local availability of ultrasound capability could have prevented the need for transfer in some cases. Clinicians and nurses did have ideas and suggestions for ways to ensure greater local access to ultrasound. To that end, a nurse suggested a collaborative approach with other nearby hospitals:

*“How many ultrasound techs do we have between these four [local] hospitals. Could we have a rotating system?”*

*Staffing and skills:* At this hospital, nurses were sometimes required to pick up extra shifts due to the unpredictable nature of maternity care and low birth volume. Further, a physician noted that

*“An advantage we have is continuity of care of our patients, but it comes at the cost of being on call for our individual OB patients 24/7, along with all of our other call and duties as rural physicians.”*

The high demands for staffing raise concerns of potential burnout. Family physicians also realized the added workload from closures of nearby maternity care units. One family physician explained the difficulty of maintaining skills for procedures that rarely occur. For example, he learned to perform a dilation and curettage procedure (D&C) in residency 14-years-ago, but

*“how do you go back and start doing those?”*

The worse thing, one physician remarked, is

*“bleeding that won’t stop, and we are not surgically trained to stop it.”*

Only a few general surgeons are on call to perform cesarean sections and there is only one who will perform a D&C. Thus, they also must wait until the on-call surgeon arrives, which may delay the time to incision.

## Conclusion

Safely providing maternity care is a challenge in rural settings, but many rural communities work hard to do so successfully. Care should be taken in applying lessons from this case study to any other setting. This case study was based on one site visit in northern Iowa, which is not representative of all rural maternity care across the U.S. Additionally, because this case study came out of a larger project focused on severe maternal morbidity and mortality, we likely overemphasized issues of transfer, relative to the case load at this site.

Still, many known challenges for rural maternity care were experienced by physicians, midwives, and nurses at one rural hospital in northern Iowa. The team at that hospital has overcome barriers and has strengths in strong continuity of care and dedicated maternity nurse staffing. These two aspects of the local practice environment help facilitate a thriving maternity care service line. Yet, the community could still benefit from policy and clinical support to address remaining challenges. These might include additional efforts to strengthen and support the maternity care workforce, including physicians, midwives, and nurses, as well as general surgeons; and support for infrastructure to facilitate high-quality care for complex cases, including transportation, emergency support, and equipment.

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For more information, contact Katy Kozhimannil ([kbk@umn.edu](mailto:kbk@umn.edu))

University of Minnesota Rural Health Research Center  
Division of Health Policy and Management, School of Public Health  
2221 University Avenue SE, #350 Minneapolis, MN, 55414