CASE SERIES
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RURAL HEALTH
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Making it Work: Models of Success in Rural Maternity Care

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Key Findings

- **Baldwin, Wisconsin: We found that the leadership style at Western Wisconsin Health informs the holistic birth experience for local residents, drawing an impressively large number of clients from other metropolitan areas to forego care at facilities closer to their residence and seek care from Western Wisconsin Health.**
- **Lakin, Kansas: We found that a combination of staff recruitment and retention focused on mission-based work with strong team communication leads to a thriving obstetrics practice at this remote, rural location.**
- **Russelville, Arkansas: We found that the use of telemedicine for prenatal services provides rural high-risk pregnant patients with convenient and comfortable access to essential specialty care obstetric services.**

Goal: Identifying and describing common factors and best practices of rural clinician programs and hospital-based obstetric units in rural communities is important as rural hospitals continue to close their obstetric units nationwide. The goal of this case series is to describe key factors that underlie three successful models of rural maternity care, and to inform communities, clinicians, and hospitals that wish to keep obstetric services available locally.

Case Series: Fifty-two rural counties lost local, hospital-based obstetric services from 2014 to 2018. Yet, rural hospitals, clinics, and communities are defying national trends of obstetric closures in rural communities by maintaining pregnancy and childbirth locally. Each of the places profiled in this case series has distinct features that contribute to its success in maternity care. We conducted key informant interviews with leaders in these programs and communities, with attention to their key features:

- **Western Wisconsin Health, Baldwin, WI** - Comprehensive clinical services offered
- **Kearny County Hospital, Lakin, KS** - Unique recruitment, retention, and workforce
- **ANGELS at the University of Arkansas for Medical Sciences and the Millard-Henry Clinic in Russelville, AR** - Innovative use of telemedicine

Data and Methods: Primary data were collected through key informant interviews with leaders in three rural locations/programs, which were guided by a semi-structured interview outline developed and informed through prior research on this topic. Interviews were recorded and analyzed for key themes using inductive methods and qualitative analysis to identify success factors that are common across these rural settings as well as best practices for safely maintaining local obstetric services.

Conclusion: Overall, success factors related to successful obstetric service in rural areas include both internal policies and practices, such as clinician recruitment and retention, interprofessional collaboration, strong partnerships, administrative leadership, integration of telemedicine, multiple birthing options, and dedication to clinical excellence, as well as external factors such as community support and the local and state policy environment.

Case Study: Western Wisconsin Health

Introduction

Rural, hospital-based obstetrics units continue to close across the nation. Between 2014 and 2018, 52 rural counties lost all local hospital-based obstetric services, continuing a trend of declining access that has been occurring since at least 2004.[1] As a result of these closures, rural residents are more likely to give birth in an emergency room, or to give birth prematurely – a leading cause of infant mortality.[2] While the current COVID-19 pandemic has already catalyzed additional closures, little literature has attempted to capture models of success or best practices used in rural hospitals that have maintained successful obstetrics units. In an effort to explore this, key informant interviews were conducted by phone with members of leadership at Western Wisconsin Health in April, 2020 and an email communication to clinicians at Western Wisconsin Health conducted to validate identified themes in this case study June, 2020.

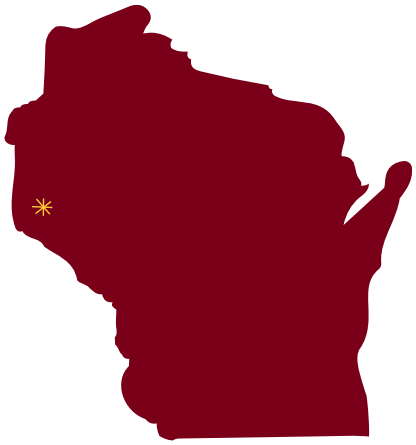
Overview

The village of Baldwin sits within St. Croix County in western Wisconsin. The community of approximately 4,000 people is predominantly white, with an average family median income of $50,000. Western Wisconsin Health, a hospital system with a transformative vision for maternity care, resides within this micropolitan-adjacent county, located approximately 45 minutes from the Twin Cities metropolitan area.

In 2019, Western Wisconsin Health delivered 203 infants, including 7 sets of twins. A wide range of birthing options are available to mothers including routine vaginal births, water births, cesarean births, and vaginal birth after cesarean birth. Western Wisconsin Health also has staff and equipment to manage planned vaginal breech births, and assistance with forceps and vacuum. Western Wisconsin Health also maintains a telemedicine relationship with Children's Hospital of Minnesota for neonatology.

Western Wisconsin Health has a 96% vaginal birth after cesarean success rate (national standard is 60%) and 88% rate of exclusive breastfeeding rate at discharge (national standard is 84%)[3]. Western Wisconsin Health has reduced its cesarean birth rate from 50% to under 5% in the last 11 years. In 2019, Western Wisconsin Health's cesarean birth rate was 3.9% low risk cesarean birth rate (national average is 25.7%). The positive maternal and infant health statistics at Western Wisconsin Health highlight successes that may be overshadowed by the trend of rural, hospital-based obstetric closures nationwide.

Western Wisconsin Health, Baldwin, Wisconsin



Key Features

Empowerment philosophy

Western Wisconsin Health focuses its maternity care on the "the birth experience you [mothers] deserve" says Chief Nursing Officer, Stephanie Johnson. The philosophical and transformative long-term vision of maternity care at Western Wisconsin Health is embedded in every aspect of pregnant families' experience during birth and providers experience as employees of the medical center. This empowerment philosophy is a core value of leadership across nurse, provider, and overall hospital administration, and is shared by all those we interviewed.

Johnson indicates that providers in the birthing room become "guardians of the birth space," ensuring that hospital staff are not unnecessarily coming in and out of the room. Furniture in birthing suites is on wheels so birthing individuals may situate the room as they feel comfortable. Language is powerful and important. For example, clinicians ask about new parents' birthing experience instead of referencing their delivery. "The experience of birth is a gift that a woman will have the rest of her life. They are going to parent and mother and be a grandmother differently than if they had been treated differently during the birth experience. So, we are changing the world by changing birth. I really believe that," said Johnson.

Dennis Hartung, MD, Chief of Obstetrics, describes the coaching of pregnant individuals: "They can do this, they don't have to be told that they need help from the anesthesia, they don't need help from this and that, unless they need it. When they need it, we are there to assist them. But we would like to try to get them through this natural, physiological way as much as possible and so we try to talk that way."

Scope of services

The philosophy of care described by Hartung plays out in the scope of services provided for pregnant patients. Western Wisconsin Health is a rare Critical Access Hospital that safely offers a wide range of services and birthing options in a rural setting, including vaginal birth after cesarean, planned vaginal breach births, vacuum and forceps-assisted delivery, cesarean delivery, and water birth.

Keeping people local and drawing from other communities

This philosophy has drawn pregnant people from the suburbs of the Twin Cities in Minnesota across state lines to Western Wisconsin Health. In addition to the variety of birthing options available, Johnson attributes this high bypass rate to the long-term vision of holistic and natural maternal and child health at Western Wisconsin Health. "The very best measure of success is after a birth when a mom says, 'I did that! I did that!' Not, 'Thank you for saving me,'" says Johnson.

Strong vision, leadership, and teamwork

Leadership and teamwork are both foundational to the success of Western Wisconsin Health's model of maternity care. From the CEO to the hospital board to the clinician leadership, all are aligned with an empowerment vision. In order for this holistic philosophy of maternity care to be successfully implemented, Western Wisconsin Health emphasizes recruiting and retaining a team of providers who are mission-driven. CEO, Alison Page describes the organizational structure as a "flat world" where team members' voices are valued, and change and decisions are swiftly made, "I like to think that we have created an environment where great clinicians can do their life's work on the job. We employ people who are motivated by making a difference, not by making money." Additionally, she describes a supportive board of directors with well-aligned values, offering her and her team the freedom to engage in innovative work. CEO Alison Page says, "Strong women make strong families, starting with that birth experience. We are not just changing the birth experience; we are changing the world."

As a part of contributing to their long term vision of the future of maternity care, Western Wisconsin Health is a resident site for the University of Wisconsin's Rural Obstetric Residency Program, the first program of its kind across the nation.[4]

"We are changing the world by changing birth."

- Stephanie Johnson, CNM, clinical nurse leader

Recommendations from Western Wisconsin Health

Western Wisconsin Health sees strong maternity care services as a source of strength in the local community. Here are some ways in which Western Wisconsin Health built their model and recommendations that can be emulated elsewhere:

- *Recruiting clinicians and staff based on mission, not money.* Western Wisconsin Health has built a successful obstetric unit and a strong regional reputation based on their philosophy of care, and they report no problems with recruitment or retention. Their recruitment model is based on their mission, not money. Hartung and Johnson indicate their decisions to join the practice as answering the question, 'Can I do my life's work at this job?' Johnson describes her ability to live out her vision at Western Wisconsin Health, "For me, the biggest accomplishments in the last 4 plus years that I have been here is "midwifing" the group of nurses and the birth center here into a whole other mindset."

- *Engagement with the local birth community.* Developing strong relationships with women and families and with birth workers in the community has undergirded success in Western Wisconsin Health. Johnson describes a round table meeting that brought community birth workers from across the region together to share and understand each other's needs and expectations in the event of a transfer to a hospital. She indicated that this conversation built relationships across two different worlds, with the ultimate goal of helping pregnant residents better understand the process of a transfer if it was needed: "…often times we get a client or a patient here that has different expectations than what we are going to do here in the hospital. And we cer-

tainly don't ever want the patient to feel like we are doing things to them but they have to understand that they are coming to the hospital for a reason."

- *Providing pregnant patients the birth experiences they deserve.* CEO Page describes the trailblazing path Western Wisconsin Health is on: "We are not looking at competitors… [we are] demonstrating what you ought to want, you know this is the birth experience you ought to want. This is the birth experience you deserve."

It is well worth noting that this key informant interview took place during the 2020 COVID-19 pandemic. Our team thanks Western Wisconsin Health workers for all that they are doing now, and in the future, to make maternity care more than work, but also transform to better serve mothers and infants. Concluding with Dr. Hartung's final message, "Women are worth it."

Case Study: Kearny County Hospital

Introduction

Rural, hospital-based obstetrics units continue to close across the nation. Between 2014 and 2018, 52 rural counties lost hospital-based obstetric services, continuing a trend of declining access that has been occurring since at least 2004.[1] As a result of these closures, rural residents are more likely to give birth in an emergency room, or to give birth prematurely – a leading cause of infant mortality.[2] While the current COVID-19 pandemic has already catalyzed additional closures, little literature has attempted to capture models of success or best practices used in rural hospitals that have maintained successful obstetrics units. In an effort to explore this, a key informant interview was conducted by phone with an obstetric care provider at Kearny County Hospital in Lakin, Kansas in March, 2020. Additional email communication with two additional providers at Kearny County Hospital was conducted to validate identified themes in this case study in June, 2020.

Overview

Lakin, Kansas is the county seat of Kearny County in western Kansas. As of the 2010 Census, the town population was just over 2,000.[5] The county as a whole is a rural, micropolitan county with health professional shortage designations in both dental care and mental health. The county population is approximately 1/3 Hispanic and has a median household income of nearly $57,000, although poverty rates for children are higher than the state or national average.[5] Kearny County Hospital is a 25-bed Critical Access Hospital owned by the local county government.

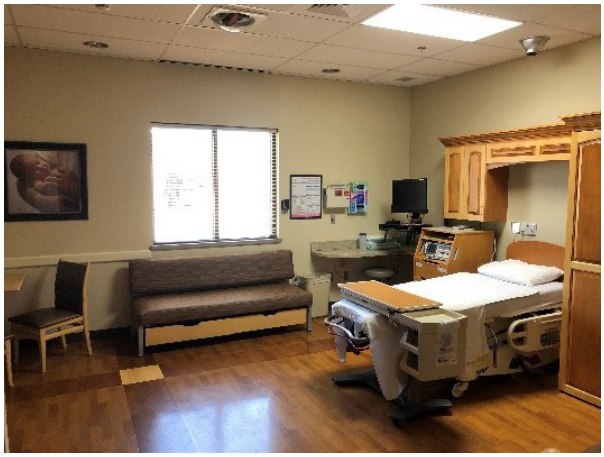


Figure 1: Birthing Room
(Photo credit to Becky Chappel)

Kearny County Hospital, Lakin, KS

Kearny County Hospital typically delivers 300 infants a year, with 340 in 2018 and 298 in 2019. Kearny County Hospital staff pride themselves on providing a range of options to pregnant patients for giving birth, with a relatively recent addition (in 2014) of the option to have a vaginal birth after cesarean section (provided that the pregnant person has only had one prior cesarean). Providers and staff have taken active measures to reduce the primary cesarean section rate, and to use induction only when the patient has completed 39 weeks gestation, unless medically indicated.

Kearny County Hospital has an annual cesarean section rate of 11.5 - 12.6%, well below the national average of 25.7%. Clinicians and staff at Kearny County Hospital have cultivated a successful maternity care practice that attracts people not just from the county, but from a much larger, multi-county area. The success of the maternity care unit at Kearny County Hospital in rural Lakin, Kansas is an exemplar for maintaining and growing successful, high-quality rural maternity care across the country.

Key Features

Mission-based recruitment and retention

Kearny County Hospital's mission statement reads as follows: "Provide quality, compassionate healthcare services for our community, to enrich the lives of our families, friends and neighbors."[6] Compassion is a central theme throughout the hospital, and also central to the success of Kearny County Hospital's maternity care program. This value is integrated into Kearny County Hospital's recruitment and retention of providers. As of March 2020, the obstetrics unit has 7 physicians, 13 clinic nurses, and 1 physician assistant providing

care to patients. In recruiting providers, hospital leadership focuses on identifying mission-driven providers who truly want to make a difference and provide care in an underserved area. Many of those providers have rural experience themselves, although others simply see providing care in a rural area as being in line with the values and goals that they had going into this line of work.

Dr. Drew Miller, a family medicine physician at Kearny County Hospital, describes some of the benefits of practicing in a rural Critical Access Hospital this way: "Practicing medicine in a rural setting is rewarding because it is built on relationships. You develop relationships with people in the community. You get to take care of whole families, starting with obstetrical care of a new mother. In that, you get to build a practice of generations, caring for this mother's child and subsequent children as they grow up, managing chronic conditions for the older generations of the family, and even being present for end-of-life care at the other end of the spectrum. In caring for these families, you build relationships and build trust, and are hopefully able to provide quality medical care across generations." He also emphasized the importance of having colleagues who are similarly mission-driven and interested in practicing in a rural environment, "In Lakin, it's important to practice with a group of people with a similar mindset."

Dr. Miller went on to describe the benefits of a mission-driven, service-oriented mindset in recruitment, retention, and practice. These benefits include not only attracting high-quality staff who can deliver excellent care, but also driving trust and interest among community members. He said, "the key for it is the service-oriented mindset that the physicians have and then that filters down to the rest of the staff as well. In that, I really do believe that we provide compassionate care to our friends, family, and neighbors, which is part of our mission statement. In a small community, if you provide good care, people are going to tell other people about it. That's the driver that brings people from 11 counties to come here for OB care. We haven't done a lot of marketing – just a lot of word of mouth. … In some ways, you recruit likeminded people to come and work with you." He also cautions that, "That culture takes time to build, for sure."

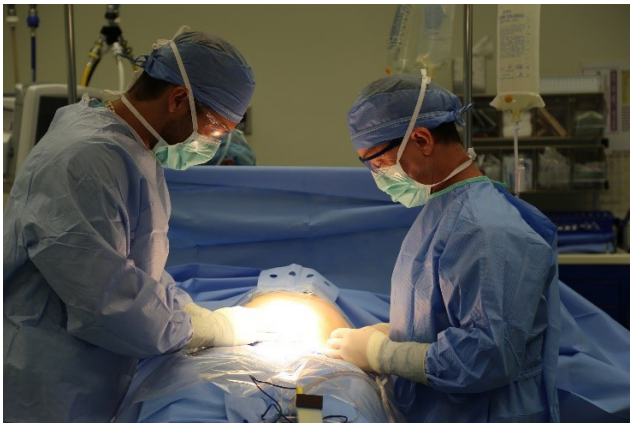


Figure 2: Time Out before Surgery
(Photo Credit to Becky Chappel)

Strong communication

The other key to success emphasized in this case study was the importance of strong, team-based communication. For example, in the case that a pregnancy is deemed high risk, the entire maternity care provider group reviews the case around 34 weeks gestation. This is done by the providing clinician sending out the plan of care to the entire group, then giving the group an opportunity to submit feedback on how that plan of care could be improved.

Perinatal nurse Becky Chappel attributes the hospital's low cesarean section rate to strong team-based communication. She states, "Responsibility for intrapartum outcomes is shared, nurses are vital members of the team who are constantly present throughout labor and birth and provide much of the direct patient care during the entire hospital stay. Our labor nurses and the attending physician collaborate and communicate frequently on labor management decisions."

In addition to team-based communication, the hospital works with a perinatologist who comes to the hospital approximately once a month to provide additional consultation on high-risk pregnancies. By having these plans in place to increase communication, especially around high-risk cases, the hospital has seen a decrease in their transfer rate for pregnancy patients. These processes have also had the additional benefit of helping to lower the costs of care. Such processes require a high level of transparency and trust among staff, and also between clinicians and hospital administration.

Recommendations from Kearny County Hospital

Kearny County Hospital sees providing high-quality maternity care to the surrounding area as central to its mission. Here are some ways in which Kearny County Hospital built their model and recommendations that can be emulated elsewhere:

- *Mission-based recruitment and retention.* "From the top down, people are committed to serving each other and serving patients," remarked Dr. Drew Miller. There is a strong "mission to the surrounding community." This service-oriented, mission-driven mindset is evident in the care provided to the community by Kearny County Hospital, and is also the key to which it attributes most of its success in identifying, recruiting, and retaining providers and staff committed to providing high-quality, compassionate care.

- *Strong and open communication.* The other key to success at Kearny County Hospital is a sense of trust and transparency, evident in the open lines of communication across providers, staff, and administration. All of that communication is in the service of providing the best possible outcomes for patients. But, having such communication requires processes, such as those with which maternity care providers review high-risk pregnancy plans of care.

It is well worth noting that this key informant interview took place during the COVID-19 pandemic. Our team thanks Kearny County Hospital workers for all that they are doing now, and in the future, to make maternity care more than work, but also transform to better serve pregnant patients, infants, and their families.

Case Study: ANGELS Network and Millard-Henry Clinic

Introduction

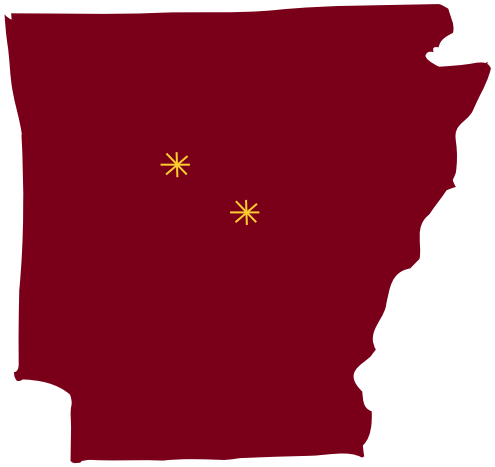
Rural, hospital-based obstetrics units continue to close across the nation. Between 2014 and 2018, 52 rural counties lost hospital-based obstetric services, continuing a trend of declining access that has been occurring since at least 2004.[1] As a result of these closures, rural residents are more likely to give birth in an emergency room, or to give birth prematurely – a leading cause of infant mortality.[2] While the current COVID19 pandemic has already catalyzed additional closures, little literature has attempted to capture models of success or best practices used in rural hospitals that have maintained successful obstetrics units. In an effort to explore this, key informant interviews were conducted with three members of the Antenatal and Neonatal Guidelines, Education and Learning System (ANGELS) team via phone in February, 2020 and two staff members from the Millard-Henry Clinic (one via phone and one via email) in July, 2020.

Overview

ANGELS is high-risk pregnancy program based at the University of Arkansas for Medical Science in Little Rock, Arkansas. This program was initiated in 2003 as the result of discussions between Dr. Curtis Lowery, a physician and professor at the University of Arkansas Medical School, and the Arkansas Medicaid program. The Medical School and state Medicaid program created ANGELS with a shared goal to create additional access to care for pregnant patients across the state. They began by focusing their efforts to improve the ability of low birth weight babies to be able to be delivered at a tertiary care facility, and fostered the growth of this partnership statewide. Currently, ANGELS has partnerships with rural clinicians and provides training resources in 65 of Arkansas' 75 counties.[7]

The ANGELS program provides multiple patient services, including education and training for clinicians and telemedicine consultations for high-risk pregnant individuals. Clinicians across Arkansas contract with the ANGELS program to access services including targeted ultrasounds, genetic counseling, diabetes education, post-partum visits, and other consultations for high-risk pregnancies. ANGELS telemedicine network has increased access to prenatal care and other obstetrics services across the state, with ANGELS conducting over 2,600 telemedicine visits in 2019.[8,9] Over the first ten years of operation, the ANGELS program was instrumental in increasing the proportion of Medicaid-covered preterm infants delivered in facilities with neonatal intensive care units (NICUs).[10]

ANGELS Network, University of Arkansas for Medical Sciences, Little Rock, AR and Millard-Henry Clinic, Russelville, AR



The St. Mary's Millard-Henry Clinic is located in Russellville, Arkansas, a community in Pope County, a rural, micropolitan county in the northeast part of Arkansas. The Millard-Henry Clinic has been open for over 35 years, and provides primary care and specialty services, including obstetrics and gynecology services. Over 8 years ago, physicians at Millard-Henry began working with the ANGELS network in order to provide an opportunity for high-risk pregnant patients with transportation issues to access specialty services provided by ANGELS. Patients who meet certain high-risk criteria are referred to ANGELS to receive a variety of services including ultrasounds, genetic counseling, and follow-up visits via telemedicine.

Key Features

Communication and connection

Regular and thorough communication between ANGELS staff and partner clinics was noted as a critical component to the success of the ANGELS program's work with rural patients. Nearly all of the obstetric clinicians at Millard-Henry clinic are in contact with clinicians at ANGELS network. This communication has built strong relationships between clinicians and staff at the ANGELS and Millard-Henry clinics, which have been integral in coordinating and providing care for high-risk patients.

The staff at ANGELS mentioned the importance of receiving "buy-in" from clinics across the state and how essential relationships with rural clinicians are to establish a meaningful partnership. One obstacle to overcome in order to achieve this buy-in was for ANGELS staff to convince rural clinicians that they weren't trying to steal their patients, but instead trying to help local clinicians offer the most impactful services possible for their high-risk patients. Clinic staff at both ANGELS and Millard Henry's clinic were eager to discuss how well the clinical teams work together to ensure patients receive the care they need, and that staff of both sites communicate often and very easily. Millard-Henry's clinic manager, Christina Trammell, noted that, "The staff at ANGELS are wonderful. They are helpful and provide an excellent service to us and our patients."

Convenient & comfortable access for rural patients

The telehealth visits available from ANGELS provide rural patients from the Millard-Henry clinic with a convenient and comfortable alternative to traveling at least 2.5 hours roundtrip to Little Rock to have a short clinic visit. Staff at Millard-Henry stressed the importance of allowing patients to access this specialty care in a familiar setting with a familiar person. Feedback from patients who had to travel to receive specialty prenatal care from a new clinician included anxiety or fear associated with navigating a new facility or seeing an unfamiliar clinician. The availability of telemedicine visits facilitated the ability for patients to save time and money by receiving their care locally, as well as the opportunity to minimize stress and anxiety for patients with high risk pregnancies.

"I think we've made pregnancy safer for our women here in Arkansas."

- Rosalyn Perkins, Director of Telemedicine Clinical Services, ANGELS

Summary

Overall, the model developed by the ANGELS program to provide telemedicine services to pregnant patients across the state of Arkansas, including those in rural areas, has been successful and a robust way of increasing easy access to specialty services for high-risk patients. Through dedication to relationship building and consistent and dependable communication, ANGELS is able to make a difference in the pregnancies of many rural patients who would have otherwise had to undergo unnecessary travel and anxiety to receive the same care. The success of initiatives like ANGELS support recommendations to increase telemedicine networks in the realm of prenatal care for high-risk patients in rural areas.

It is well worth noting that this key informant interview took place during the COVID-19 pandemic. Our team thanks ANGELS and Millard-Henry Clinic staff for all that they are doing now, and in the future, to transform maternity care to better serve pregnant patients, infants, and their families.

References

1. Hung P, Henning-Smith CE, Casey MM, Kozhimannil KB. Access to obstetric services in rural counties still declining, with 9 percent losing services, 2004-14. Health Aff. 2017;36(9):1663-1671. doi:10.1377/hlthaff.2017.0338

2. Kozhimannil KB, Hung P, Henning-Smith C, Casey MM, Prasad S. Association between loss of hospital-based obstetric services and birth outcomes in rural counties in the United States. JAMA - J Am Med Assoc. 2018;319(12):1239-1247. doi:10.1001/jama.2018.1830

3. Division of Nutrition PA and ONC for CDP and H. Breastfeeding Report Card . Centers for Disease Control and Prevention. Published October 17, 2020. Accessed September 26, 2020. https://www.cdc.gov/breastfeeding/data/reportcard.htm

4. Nation's first and only rural Ob-Gyn residency program expands. University of Wisconsin School of Medicine and Public Health. Published November 14, 2019. Accessed June 24, 2020. https://www.med.wisc.edu/news-and-events/2019/october/rural-ob-gyn-residency-program-expands/

5. Kansas: 2010 Population and Housing Unit Counts 2010 Census of Population and Housing.; 2012.

6. Kearny County Hospital. Our Mission, Vision & Values. Published 2020. Accessed September 26, 2020. https://www.kearnycountyhospital.com/about-us/our-mission-vision-values/

7. ANGELS Annual Report 2018-2019.

8. Long MC, Angtuaco T, Lowery C. Ultrasound in telemedicine: Its impact in high-risk obstetric health care delivery. Ultrasound Q. 2014;30(3):167-172. doi:10.1097/RUQ.0000000000000073

9. ANGELS Annual Report, 2018-2019. ANGELS. Published 2019. Accessed August 3, 2020. https://idhi.uams.edu/wp-content/uploads/sites/82/2019/11/IDHI-High-Risk-Pregnancy-ANGELS-Annual-Report-2019.pdf

10. Bronstein JM, Ounpraseuth S, Lowery CL. Improving perinatal regionalization: 10 years of experience with an Arkansas initiative. J Perinatol. Published online July 16, 2020:1-8. doi:10.1038/s41372-020-0726-x

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