CASE STUDIES
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Midwifery Care at Rural Hospitals in Montana and California

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Key Findings

- Bozeman Health (a mid-size, regional health care hub in rural Montana) and Plumas District Hospital (a small, remote Critical Access Hospital in rural California) recruited midwives in response to community demand for midwifery care.
- At Bozeman Health, 4 staff midwives provide perinatal care and attend births using a group-based model, in addition to providing primary care and women's health care services across the life course.
- At Plumas District Hospital, 1 staff midwife provides prenatal and postpartum care, leads childbirth classes, provides primary care and women's health care services, and responds to immediate patient concerns through a 24/7 Mother-Baby phone line.
- Both hospitals emphasized that the success of their midwifery programs is due to the autonomy granted to midwives, including the ability to practice without restrictive supervision agreements, prescribe medications, and make independent clinical decisions. Hospitals attributed this autonomy to the midwifery practice policies in their respective states as well as the support of collaborating physicians.

Purpose

The purpose of these case studies is to describe how two hospitals that serve rural United States (U.S.) communities incorporate midwifery care into their services. Health care administrators, clinicians, policymakers, and rural community members can draw from these examples in their own efforts to address workforce challenges, create innovative models of care, and improve access to and quality of maternal health care in rural places.

Background and Policy Context

Access to women's health care is limited and worsening in many rural areas of the United States (U.S.). Workforce shortages and financial constraints are implicated in dwindling numbers of rurally-located clinicians and facilities that provide full-spectrum women's health care, including childbirth care.[1] As of 2019, over one-third of rural U.S. communities had no obstetrician/gynecologists (OB-GYNs) or family physicians trained in obstetrics.[2] In 2022, 60 percent of rural U.S. counties had no hospital-based maternity unit.[3] The combined effects of limited health services and other inequities in social determinants of health are possible contributors to elevated risks of poor maternal health outcomes faced by rural birthing people, including severe maternal morbidity and mortality.[4]

Despite the current circumstances, there is hope in the projected growth of the midwifery care field and an increasing demand for the midwifery model of care among birthing people.[5,6] (See the callout box on p. 2 for description of the midwifery model of care.) Health care experts and policymakers have proposed the expansion of midwifery care in rural areas as one component of the multifaceted strategy needed to address the U.S. maternal health crisis.[7–9] In addition to specializing in childbirth care, certified nurse-midwives (CNMs – hereafter, "midwives") are also trained to provide adult primary care services,[10] giving them an important role in the response to rural primary care shortages. This scope of care

allows midwives to support rural maternal health across the lifespan, including by helping address preconception and interconception care needs for rural people.

Over half of rural U.S. hospitals do not have local midwifery care,[11] but the percent of births attended by midwives in rural areas increased from 8 to almost 13 percent between 2007 and 2022,[12] and the profession is expected to continue to grow.[5] The case studies below highlight how two very different hospitals serving rural U.S. communities have incorporated midwives into their maternity and primary care services. The first – Bozeman Health in Montana – is a regional health care center with a steady number of annual births (>1,000). The second – Plumas District Hospital in California – is a Critical Access Hospital in a remote frontier region that recently closed its obstetric unit due to financial and staffing challenges.

MIDWIFERY VS. MEDICAL MODELS OF CARE[13-15]

The midwifery model of childbirth care views pregnancy and birth as natural, physiological processes. It emphasizes, relational, person-centered care, patient autonomy, and shared decision-making, and using medical interventions only when necessary.

In contrast, the medical model of childbirth care (typically favored by physicians) is more interventionist, viewing childbirth through a medical lens, with a focus on risk management and standardized care. Physicians are trained to anticipate and manage complications, which is crucial for many high-risk pregnancies but is associated with more frequent use of interventions in low-risk scenarios.

Approach

The lead author conducted semi-structured interviews in January 2024 with administrators and clinicians at each health care facility. Two interviews (one at each site) were conducted by Zoom and recorded; each lasted approximately one hour. Following the interviews, the lead author analyzed the recordings and transcripts of each case study separately. This analysis aimed to identify key features of the facilities' utilization of midwives and to identify opportunities and challenges that may be helpful to other rural hospitals employing midwives or seeking to incorporate midwifery care. These themes were subsequently reviewed and refined by the co-authors and are presented for each case below.

Case Study: Bozeman Health

Rural Community and Hospital Context

Bozeman Health Deaconess Regional Medical Center (BHDRMC) is a 125-bed hospital and Level III trauma center located in Bozeman, a city of 56,000 people in southwest Montana.[16] Bozeman is situated within a valley of the Rocky Mountains, and is the county seat of Gallatin County.[17] The area was and is the traditional homeland of many Indigenous Nations, including the Blackfeet, Crow, Cheyenne, Salish, and Kootenai people.[18] Gallatin County has a population of 119,000, covers 2,600 square miles (half of which is publicly-owned land), and has a relatively homogenous racial and ethnic makeup.[17,19] Ninety percent of county residents reported non-Hispanic white race in 2020; the next largest racial/ethnic groups are Hispanic white (4%), two or more races (2%), Asian (2%), and American Indian/Alaska Native (1%).[19] BHDRMC is one of several hospitals and clinics that make up Bozeman Health, a 2,400 employee, non-profit health system founded in 1897.[20] Bozeman Health is a regional health care hub and the county's largest employer, providing health care services to Gallatin County and seven surrounding counties.[20]

Obstetric care services at Bozeman Health

The Family Birth Center at BHDRMC, which is the only obstetric unit in Gallatin County, sees between 1,100-1,300 births per year, a volume that has remained steady for the past 20 years. Pregnant patients from Gallatin County travel from up to 90 miles away (a 1 hour and 45-minute drive on dry roads) to give birth at BHDRMC, with patients from other Montana counties traveling even farther to deliver. The Family Birth Center is adjacent to a 10-bed, Level II neonatal intensive care unit (NICU) that cares for infants born as early as 32 weeks.[21]

Bozeman Health Women's Specialists is one of the two provider groups that attend births at the BHDRMC Family Birth Center, in addition to providing other women's health care services. It is the only group that employs midwives at the hospital. We spoke with Becky Derzay, MSN, RN, the Nursing

and Operations Manager for Bozeman Health Women's Specialists, and Melissa Wolf, MD, Medical Lead of the group, to understand the broad challenges and strengths of their rural hospital, the history of midwifery care in their unit, and their advice for other rural hospitals looking to incorporate or expand midwifery care.

The group includes 13 total maternity care clinicians: four full-time CNMs and nine obstetrician-gynecologist physicians, all of whom are employed by the hospital. The group includes two OB hospitalists, who provide 24-hour coverage for 14 days a month. When a hospitalist is not working, the on-call physician is required to be within a 20-minute drive of the hospital.

Wolf and Derzay spoke positively about the range of maternal-infant services at BHDRMC while noting common rural hospital challenges: staffing issues, limited labor and delivery rooms, and a need to transport the highest-risk birthing people and infants to facilities in larger population centers (e.g., Billings, Missoula).[22]

Midwifery at Bozeman Health

Development of midwifery program

Less than a decade ago, physicians were the only birth attendants employed by Bozeman Health Women's Specialists. The contemporary midwifery practice at Bozeman Health Women's Specialists began in 2018, with the hiring of two CNMs. Clinic leadership intentionally recruited midwives in response to patient interest; the practice's physicians had been observing a growing number of elective home births in the community, often attended by non-licensed birth attendants. Unfortunately, several planned home births in their local community resulted in poor patient outcomes and ended up in their hospital. Derzay described Bozeman Health Women's Specialists' vision for the addition of midwives to the group: *"[We] hope having midwifery in a safer setting, where we are prepared to respond to emergencies, maybe reduces the amount of [unplanned] out-of-hospital births that end in a tragic situation. So I think we're kind of meeting the patients halfway…you can see a midwife and be under the midwifery model, but also be in a very safe place in case something happens, where you can quickly have access to a doctor there."* The CNMs at Bozeman Health Women's Specialists practice independently with their own patients while being integrated with the physicians as one unified maternity care group. Two more CNMs have since been added to the group for a total of four midwives as of July 2024. Because this staffing level doesn't cover all shifts throughout the year due to time off and sick days, the practice is in the process of hiring a fifth midwife to minimize gaps in the schedule and ensure consistent availability of midwifery care.

The midwives of Bozeman Health Women's Specialists (from left to right): Shannyn Dewey, CNM; Brooke Cadwell, APRN, CNMBC; Amanda Rizner, CNM; Alicia Fletcher, CNM, ARNP, RN

Intake and initial care for pregnant patients

At their first appointment, all first trimester pregnant patients meet with a physician, who conducts a dating ultrasound and provides basic prenatal education. The second appointment is an extended 45 to 60-minute visit with a nurse navigator. (If a patient is late to initiate prenatal care, they do not need a dating ultrasound, but they do meet with the nurse navigator to do an intake appointment and plan out the remainder of their care.) Derzay spearheaded this model in 2020, inspired by oncology nurse navigation programs.[23] During these visits, the nurse navigators take a comprehensive health history and offer prenatal counseling on various topics such as nutrition, activity, perinatal mood disorders, and substance use. Additionally, nurse navigators explain the differences between physician and midwifery models of care, and patients choose whether they want to work with the physicians or midwives for their prenatal, childbirth, and postpartum care. (Note: Patients determined to be high-risk are not eligible for midwifery care, although there can

be co-management between physicians and midwives for certain situations. Appendix 1 shows the list of conditions used at Bozeman Health Women's Specialists to determine the patient risk level and suitability for midwifery care).

Midwifery autonomy with collaborative support

As previously mentioned, midwives at Bozeman Health Women's Specialists generally have their own patients, and physicians have theirs. This approach promotes professional autonomy for the midwives and ensures that patients receive continuous care from their preferred providers. This autonomy is facilitated by the state policy environment: Montana state law allows for certified-nurse midwives to practice and prescribe independently without physician supervision.[24,25] (See Appendix 2 for a map comparing the CNM practice environments of U.S. states.) When asked how the group navigates scope of practice concerns between midwifery and physician care, administrators said it is largely a non-issue due to the state statute granting CNMs independent practice authority, clear scope of practice guidelines from the Montana Board of Nursing, and organization-level policies like the list of conditions requiring physician care (Appendix 1).(Appendix 1). Built on this foundation of CNM independence, administrators described a collegial and collaborative atmosphere characterized by trust, respect, and mutual support between the midwives and physicians. This dynamic is illustrated in the following examples of how the midwives and physicians at Bozeman Health work together:

1. On any given day, there is typically one midwife and one physician on call. The physician sees outpatient prenatal care patients with designated slots in their schedule, while the midwife does not have set appointments. Instead, the on-call midwife is responsible for visiting and checking on all postpartum inpatients, whether their birth was attended by a midwife or a physician. In this system, midwives manage a broad spectrum of patients, including those recovering from C-sections or with conditions like hypertension. Physicians will see patients with particularly complicated conditions, but generally, midwives handle the hospital rounds independently.

2. On the Labor and Delivery unit, physicians and midwives communicate openly about their patients and regularly call upon one another for additional support or a second opinion. An example was given of a midwife asking the on-call physician to be present during a labor in which the fetus was demonstrating fluctuating heart tones. The doctor was present in the room but did not take over, respecting the midwife's autonomy while being ready to quickly assist if necessary.

3. If a midwifery patient ends up needing a C-section, the patient's midwife stays closely involved in their care. Typically, the midwife assists the physician with the surgery, remains with the patient throughout the procedure, and then continues to provide care postpartum. This promotes continuity and comfort for the patient even in the case of a surgical birth.

4. In the outpatient clinic, when a midwife or physician is unexpectedly out of office, the other will cover their colleague's patients to avoid canceling appointments whenever clinically appropriate and logistically feasible. Administrators described this collegial flexibility as a benefit for patients, and one that may be especially important for patients traveling long distances for appointments. "We have that trust and collaboration such that…it's not like, 'Well, that's not my patient, I'm not going to see them.' We have the mindset of every patient belongs to this practice."

5. Like their physician colleagues, Bozeman Health midwives see patients for comprehensive health care outside of the pregnancy and childbirth context. They offer annual physicals, provide contraceptive services, and address concerns such as yeast infections and breast lumps. One of the CNMs is cross-trained as psychiatric nurse practitioner and sees many of the group's patients with behavioral health concerns. For complex gynecologic issues like a large pelvic mass or abnormal bleeding, midwives consult with their physician colleagues or refer patients as needed, ensuring smooth transitions of care by personally introducing the patient to the physician when possible and sharing rele-

vant information to promote continuity of care. In procedures like intrauterine device (IUD) insertions, midwives can quickly get assistance from physician group members for ultrasound guidance or other real-time support when needed.

Role of physicians in supporting midwifery

Administrators emphasized the critical role of support from the group's physicians as being key to the success of the midwifery program and low staff turnover among all types of providers in the group. Wolf stated: *"I love [our midwifery program], because the patients love it. And quite frankly, [the midwifery care model] is a little bit out of my comfort zone. So if I have a patient who wants a midwife and they want that model, I don't have to adapt my style of practice to them. I can just say, 'Here, look, we have an expert in what you want.' And the patients love it, they love having a choice, and the ones who want to see midwives love being able to see midwives for all their care, not just for prenatal care. So I think it's great."*

Summary

Administrators with Bozeman Health Women's Specialists described their midwifery program as a net positive for all: perinatal care and primary care patients, midwives, physicians, and the greater community. Administrators believe they have seen some signs of success in their hope that offering midwifery care attracts some of the birthing people that otherwise would choose a home birth with an unlicensed attendant: *"We do actually get people who say that the reason they want to come here is because we have midwife care available."*

When asked what advice they would give other rural hospitals interested in incorporating midwifery care into their obstetric and women's health units, administrators emphasized the importance of physician support and trust – as demonstrated by the aforementioned autonomy for CNMs and collaboration among all clinicians – for the successful integration and expansion of midwifery programs in rural hospitals. State and federal policymakers could support this advice by implementing a flexible scope-of-practice policy environment. Such policies facilitate collaboration by reducing the limitations imposed by strict physician oversight requirements, which can be particularly challenging for rural hospitals dealing with staffing constraints.

Case Study: Plumas District Hospital

Rural Community and Hospital Context

Plumas District Hospital (PDH) is a 16-bed Critical Access Hospital located in Quincy, a frontier town of approximately 5,500 people in northeastern California.[26] Quincy is the county seat of Plumas County, which covers 2,600 square miles and has approximately 19,000 residents.[27] Plumas County is located on the traditional homelands of the Maidu and Washoe people in the Sierra Nevada mountains.[18] The county is known for its natural beauty, encapsulating over 100 lakes and one million acres of national forest within its borders.[28] According to the 2020 census, 82% of Plumas County residents reported their race/ethnicity as white non-Hispanic, 11% as Hispanic or Latino, 4% as two or more races, 3% as American Indian/Alaska Native, 1% as Asian, and 1% as Black.[27]

Plumas District Hospital provides vital health services in this frontier region, including inpatient care (with an average daily census of 5.5 people), emergency medicine, and specialized care, including cardiology. Approximately 250 people work at the hospital, including 11 on-campus family practice clinicians (physicians and advanced practice nurse providers) and 7 on-campus specialists. Several additional specialists provide telemedicine services or visit clinic one or more days per month.[29] PDH also operates two Medicare-certified rural health clinics (RHCs) – one located nearby in Quincy, and the second in the town of Greenville (22 miles from Quincy).

The exterior of Plumas District Hospital; Quincy, California

Obstetric care services at PDH

Until recently, PDH had a Level 1 maternity unit where 50-100 births took place each year, attended by family medicine physicians trained in obstetrics. A long-standing relationship with the University of California - Davis enabled telemedicine support for urgent high-risk obstetric and neonatal care concerns. However, like many other rural U.S. hospitals, PDH suspended its labor and delivery services, closing their unit in June 2022 due to staffing and financial challenges. It is now an 87-mile drive (1 hour and 30 minutes on dry roads) from Quincy to the nearest obstetric unit at Tahoe Forest Hospital in Truckee, CA.

PDH administrators are determined to bring labor and delivery services back to their hospital, and midwifery care plays a central role in these plans. We interviewed three PDH administrators leading this effort: Lori Link, CNM, MSN, Directory of Midwifery Services; Tiffany Leonhardt, BBA, Director of Business Development; and Lisette Brown, RN, Chief Clinical Officer. Link, Leonhardt, and Brown described the development and present state of the PDH midwifery program, advice for other rural hospitals looking to incorporate midwifery care, and their vision for a new model of rural maternity care, including a desire to restart childbirth services locally.

Midwifery at Plumas District Hospital

Development of midwifery program

Administrators credit community demand as the catalyst for incorporating midwifery care into their hospital's perinatal care services. Before PDH's maternity unit closure in 2022, a local certified professional midwife (CPM) attended as many planned home births as PDH's physicians attended hospital births. Administrators report that of 166 births to Plumas County residents in 2021, 52 took place at PDH, 55 at home, and 59 out-of-county. During a series of 2021 community forums, area residents vocalized a strong desire to bring midwifery care to PDH. Lori Link was recruited and hired shortly after to direct the midwifery program and serve as the hospital's sole midwife.

Link, who has over 30 years of experience as a nurse-midwife, had just become credentialed to attend births at PDH when the hospital closed its labor and delivery unit. PDH still plays an important role in providing perinatal care services to the community, with Link and three family physicians seeing prenatal care patients up to 36 weeks gestation, at which point patients transfer care and give birth at an out-of-county facility. PDH has formal agreements with UC Davis Health and Sutter Health in Sacramento. They also refer to and collaborate with Tahoe Forest Hospital, Renown OB and MFM, Banner Lassen Susanville, Enloe Medical Center, Perinatal Associates of Sacramento, and UCSF Health. Patients can then receive postpartum and newborn care at PDH once they return home.

Lori Link, CNM, MSN, Director of Midwifery Services at Plumas District Hospital

Intake and initial care for pregnant patients

Link is the prenatal and postpartum care provider for the majority of PDH's low-risk patients, caring for approximately 40-50 low-to-moderate risk birthing people per year. She sees all low-risk prenatal patients for their first appointment, conducting intake and providing initial prenatal education. Most of these patients then continue care with her for the duration of their pregnancies and postpartum, with care co-managed with the preferred delivery provider from 36 weeks through delivery. Her family practice physician colleagues will follow higher risk patients, as well as a small number of lower risk patients that they have worked with in previous pregnancies. Link's schedule is built for 30 to 60-minute appointment slots for her

patients, in contrast to 15-minute appointments on the physicians' schedules. When a patient has a higher risk condition, both Link and the PDH physicians consult with or refer patients out to an OB/GYN, MFM, or perinatologist. In some cases, Link and the PDH physicians can collaborate with the external specialist to provide some of the patient's care locally via telemedicine. Appendix 3 shows PDH's full Prenatal Risk Assessment and Referral Policy, which includes a list of conditions that require an automatic referral.

In addition to providing prenatal and postpartum care to PDH's low-risk patients, Link supports birthing people and the Plumas County community in other important ways, including by:

- Working one day per week at the county public health department providing outpatient women's health services, including testing for sexually-transmitted diseases/infections
- Leading childbirth classes at the hospital and providing lactation support in the clinic
- Functioning as OB care coordinator/case manager for all low-risk pregnant patients (including those followed by her physician colleagues), coordinating care as needed with the out-of-county hospitals where patients choose to give birth
- Staffing a 24/7 Mother-Baby line that patients can call with any pressing questions. Link established the phone line and is the main clinician who answers calls (which rings directly to her cell phone, routed through a hospital number). Link insisted on this service because, previously, *"people would call, and they could not get who they needed to talk to."* Link reports that patients love the line, and she attributes it to several instances of quickly identifying and responding to emergencies, as well as being able to reassure patients about less pressing concerns.

Establishing and integrating midwifery practice into the hospital and community

Link arrived at PDH just months after California legislation took effect removing "physician supervision" from California midwifery scope of practice statute. This is known as "independent practice" and allows CNMs to provide patient care to the fullest extent of their training and qualifications. However, Link and colleagues at PDH found themselves needing to educate other hospital staff and community members about the provider-level role of midwives, and certain local policies and processes needed to be updated. For example, when Link started at PDH, the ride-along policy of the area emergency medical service (EMS) did not allow midwives to travel with laboring patients during the long 90-minute ambulance drive to an out-of-county hospital; this was a pressing concern, as it is optimal for patient safety to have a trained birth attendant accompanying during long ambulance rides. Link believed that EMS officials did not oppose midwives providing care but were simply unaware of the full scope of midwifery practice: *"There was a misunderstanding. They looked at midwives as a registered nurse that could do a few extra things. It was like, 'Oh, wait, we didn't know that…well this just changes everything."*

Challenges with combining different clinical roles

Prior to the closure of their maternity unit, PDH experimented with a dual attending clinician-nurse role for Link to help cover gaps in nurse staffing coverage. During a given shift, Link worked as either the attending midwife provider or the OB nurse (though never both at the same time). Link would not recommend this model for other hospitals, she said, as it created confusion for both staff and patients. She described how challenging it was for her to shift into a different thinking process and to follow different documentation requirements depending on which role she was in. Additionally, she felt that shifting between the nursing and nurse-midwife roles resulted in patients and nursing staff not seeing her fully as an attending clinician even when she returned to her nurse-midwife role.

Role of physicians in supporting midwifery

Link described a positive working relationship with her physician colleagues. *"At PDH, I am included as an integral part of the care team collaborating along the spectrum of low to higher risk. I know that my profession is valued,"* she said, noting also that the family physicians at PDH practice many tenets of the midwifery model of care. Administrators report that the physicians appreciate Link's specialized contributions, acknowl-

edging that they often lack the time to offer the same type of patient care themselves. While California law allows for independent midwifery practice in low-risk settings, PDH's federal designation as a Critical Access Hospital requires an overseeing physician be named. PDH follows this requirement, but administrators do not see this as an impediment to Link's autonomy, as the physicians trust her to operate within the nurse-midwife scope of practice. In other state or hospital settings, this may present a barrier.

Innovation and Creating the Future of Rural Maternity Care

PDH administrators and clinicians are dedicated to providing childbirth care to their community. They have a vision for a new staffing category for rural Critical Access Hospitals that are unable to meet the current staffing minimum requirements set by the state for labor and delivery care. The model proposes a standby perinatal care unit/"team on-call" made up of a physician, midwife, and nurse (Appendix 4). This team would be able to travel to the hospital within 30 minutes to provide emergency childbirth care for patients transferred from a freestanding birth center, or anyone experiencing an obstetric emergency or precipitous birth. The proposed model would also allow hospitals under this staffing category to support emergency obstetric and newborn care, if desired. Key features of this model include robust consultation and transfer agreements, telemedicine capabilities, and regular training for staff to maintain obstetric skills. Midwives are integral to the proposed model, as qualifying rural hospitals would have a consultation and transfer agreement with a nearby midwife-led freestanding birth center. As such, PDH intends to hire additional CNMs to work with Link if this model is implemented.

Even though their obstetric unit is currently closed, PDH clinicians are keeping their labor and delivery skills up to date. The family physicians maintain their obstetric certifications, and Link practices her skills by working shifts at a midwife-run maternity unit in Davis, CA and by taking calls at a regional freestanding birth center. Administrators emphasized their support of Link and her physician colleagues doing this, citing two key reasons: 1) to be prepared to attend births if the PDH maternity unit reopens, and 2) to be ready to care for birthing people who present at the PDH emergency department with a precipitous delivery or obstetric emergency. Lisette Brown, Chief Clinical Officer, reported that PDH has already seen nine such emergency births since they closed their maternity unit in 2022, and believes that *"we're going to continue to see that – that's not going to change with our remote distance. So it's very important that we maintain the skill sets to really be able to manage those emergencies well and to save lives and to provide that support for the community members."*

Summary

PDH administrators recognize midwifery care as a vital service desired by birthing people in their community and believe that midwives can play an important role in sustaining maternity services in rural hospitals. Brown, who has worked at PDH for over 20 years, offered the following advice to other rural communities: *"I think it's important for smaller areas to really look at midwifery as a way to support birth services moving forward and not to wait until you're on the brink or you're closing your doors to do it. I think it's a way to provide sustainability to maintain the services in your community. There are a couple other hospitals we've talked with, that their labor units already closed, and their providers are starting to move away…I think in general and in communities like ours, there's more ask for midwifery services. My recommendation is for those administrations and provider groups to listen to their communities - it is something that's going to help keep doors open."*

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APPENDIX 1

Bozeman Women's Health Specialists

Indications for transfer from midwife to physician care

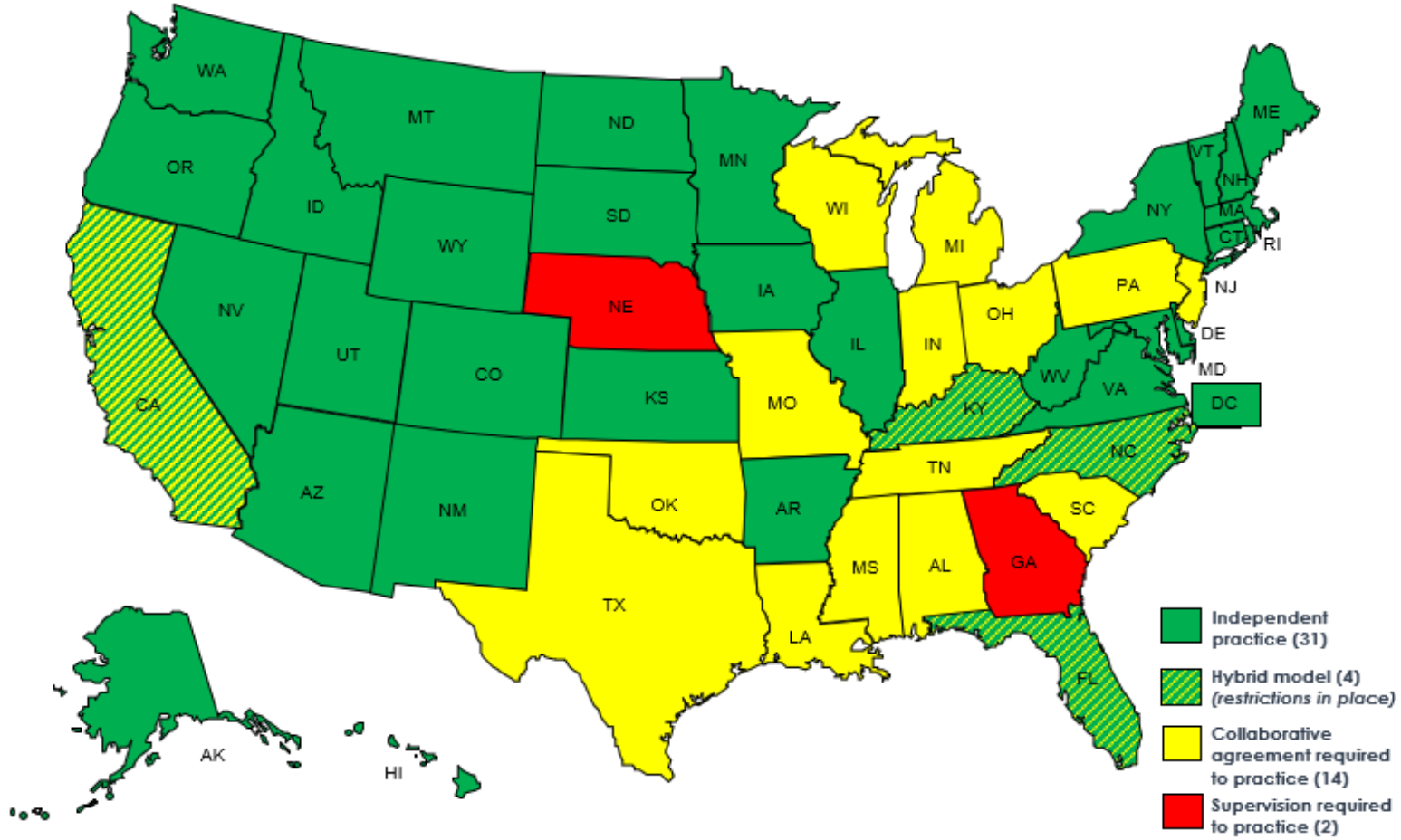
- Gestational age 33 6/7 weeks or less including demise
- Patient planning TOLAC
- CHTN on medication
- GHTN requiring medication
- Pre-eclampsia with severe features
- Patient on therapeutic anticoagulation
- Severe hypertension requiring IV meds during admission
- Pre-gestational diabetes
- Gestational diabetes on insulin (metformin or diet controlled okay)
- Multiple gestation
- History of uterine gynecology surgery such as myomectomy (excluding D&C)
- History of incompetent cervix with or without cerclage in place
- Serious chronic maternal medical conditions including:
    - Chronic renal disease
    - History of stroke
    - Current treatment for cancer
    - History of cardiac disease
    - Inflammatory bowel disease on immune suppression medications
    - Lupus
    - Organ transplant
    - Antiphospholipid antibody syndrome
    - Connective tissue disease such as Ehlers Danlos
    - Thrombophilia
    - Bleeding disorder
- IUGR less than 1%
- IUGR any percentile with abnormal dopplers
- History of severe PPH requiring transfusion
- History of 4th degree laceration declining cesarean
- History of shoulder dystocia with clavicle fracture or other complication declining cesarean
- Placenta previa, vasa previa, placenta accreta
- BMI 40 or higher

Continue midwife care with caveats as below

- Gestational age 41 weeks who declines induction – notify physician
- Previous cesarean planning repeat - physician visit at 32 and 37 weeks, midwife to assist in the OR if appropriate
- Patient with a medical indication for delivery – notify physician on call when patient admitted
- Patient with a medical indication for delivery who declines medical induction – notify physician
- Patient who is planning tubal sterilization – physician visit at 32 weeks for surgical evaluation

APPENDIX 2

Practice Environments for Certified Nurse-Midwives April 2024



Source: American College of Nurse-Midwives, 2024
https://www.midwife.org/acnm/files/cclibraryfiles/filename/000000009192/cnm%20cm%20practice%20maps%20June%202024.pptx

AMERICAN COLLEGE of NURSE-MIDWIVES

APPENDIX 3

Plumas DISTRICT HOSPITAL	**TITLE:** Prenatal Risk Assessment and Referral
	SCOPE: RHC Medical Offices

Keywords: Prenatal, Risk, Referral

Policy Purpose: To identify perinatal patients at risk for perinatal or neonatal morbidity or mortality. To refer high risk patients for evaluation by a board certified obstetrician-gynecologist (OB/GYN) or perinatologist.

Policy:

1. A prenatal risk assessment will be done on all obstetric patients upon entry into prenatal care and again in the third trimester.

2. The assessment will be done by the clinic perinatal nurse, nurse practitioner, or physician.

3. For the following patient problems, an automatic referral will be made to the OB/GYN or perinatologist:

• Multiple gestation	• PPROM
• Diabetes, insulin dependent	• Hepatitis or chronic liver disease
• Sickle cell anemia	• Malignancy or leukemia
• Epilepsy or on anticonvulsant	• Tuberculosis, active
• Fetal malformation	• Rubella exposure with rising titer
• Alloimmunization associated with fetal disease	• Renal Failure

4. In addition, a referral will be made in the following circumstances:
   a. Two or more risk factors are present in the At Risk of Poor Pregnancy Outcome and/or At Risk of Preterm Birth.

   b. Multiple Relative Factors and/or physician discretion.

5. Consultation for referral may occur as a telephone consultation to determine appropriateness of referral by the perinatologist.

6. Following perinatal consultation the family physician may;

a. Continue as the primary provider
b. Participate in patient care under the direction of the OB/GYN or perinatologist
c. Have the patient transfer to the perinatologist for a higher level of care.

APPENDIX 4

The Plumas Model

California's remote, rural communities are losing maternity services at an alarming rate. In rural areas, the sole maternity care provider was often a critical access or frontier hospital. In such cases, closure, and the subsequent void of emergency maternity care stymies other maternity care providers, including independent community birth midwives.

Plumas District Hospital (PDH), in rural northeastern California, was the last frontier hospital offering maternity services. In July 2021, faced with staffing and financial challenges, town hall forums assessed community needs. The message was clear: Plumas County's women are having babies, they need and want local maternity and childbirth services, and a large number want (and qualify for) out-of-hospital birth. Despite having suspended labor and delivery services in 2022, community feedback encouraged hospital administration and medical staff to persevere. The result is: The Plumas Model.

The Plumas Model recognizes that the current minimum standards for staffing hospital maternity units in California hospitals were designed for hospitals with moderate or high delivery volume. PDH has a low birth volume, about 60-100 births annually, and is a minimum 90-minute drive from the nearest hospital providing full maternity services.

The Plumas Model offers a solution: The Standby Perinatal Medical Service, Team on Call.

Operationalizing The Plumas Model requires a program flexibility application from the California Department of Public Health. In their application, PDH describes an alternate method – the Standby Perinatal Medical Service, Team on Call - to treat urgent obstetric problems by providing physician, midwifery, and nursing service within a reasonable time, not to exceed 30 minutes. The standby team is composed of a physician, a certified nurse midwife, and a registered nurse with training and experience in obstetrics. The team functions in both the hospital setting and the alternative birthing center.

The Plumas Model embraces the spirit of "the regional perinatal network" described in *Obstetric Care Consensus: Levels of Maternal Care*. The Standby Perinatal Medical Service, Team on Call coupled with a PDH-managed Alternative Birthing Center and Rural Health Center accomplishes the following:

1. Preserve local maternity care for all pregnant people and childbirth services for low-risk pregnancies.
2. Preserve referral relationships with higher-level facilities for moderate- to high-risk specialty consultation.
3. Leverage telemedicine for real-time perinatal and neonatal consultation.

4. Facilitate transfer of an infant to an intensive care newborn nursery, or a mother to a higher-level hospital when indicated.
5. In the most acute emergencies, the Standby Emergency Medical Service, Team on Call provides key medical interventions, or “signal functions”, used to treat direct obstetric complications that cause the majority of maternal deaths around the globe: Hemorrhage, obstructed labor, postpartum sepsis, complications of miscarriage, pre-clampsia or eclampsia, ectopic pregnancy, ruptured uterus, intrapartum newborn distress.

The application is currently under consideration.