# Navigating Perinatal Care in Western North Carolina:
## Access for Patients and Providers

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**Navigating perinatal specialty care requires access for both patients and their clinicians. Convenience and availability of regional resources, especially in predominantly rural areas, impact the ability to provide care in the ideal setting for each patient's individualized medical needs.**

Any mention of Western North Carolina (WNC) instantly evokes iconic images of leaf season on the Blue Ridge Parkway or holiday decorations at the Biltmore Estate. These wonderful local attractions, among many others, obscure the challenging health care landscape for those residents who call the 16 western-most North Carolina counties home. Also known as Perinatal Region 1, Asheville is the urban center for this piece of Appalachia and also its tertiary medical hub [1]. The 51-bed neonatal intensive care unit at Mission Health is frequently full of babies delivered locally but cared for across the wider region by midwives, family practitioners, and obstetricians. Both providers and patients face barriers in navigating specialty care for antepartum mothers.

### State of the Region: Hospital Resources

The elimination of labor and delivery services in WNC poses significant access and safety concerns for pregnant women and the regional health care system. Since 2015, 4* hospitals in different counties of the region have terminated birthing services (Transylvania Regional, Angel Medical Center, Blue Ridge Regional, Rutherford Regional) although one plans to bring them back (Rutherford Regional). Adjacent Cannon Memorial in Avery County, whose practitioners referred women's health patients to the west, also closed delivery services in 2015. An additional 6 counties have been without delivery services for many years, either because the community has no hospital (Clay, Graham, Yancey, Madison) or because the local hospital does not have a labor and delivery unit (Polk, Swain) (see Figure 1). A recent study of 17 communities suffering similar labor and delivery closures found that women had to drive 29 miles on average (range: 9-65 miles) to reach the nearest hospital offering obstetric services [2]. Twenty-nine miles of serpentine mountain roads is not a short half-hour trip even in the best weather with a reliable vehicle. Additionally, addressing the gap between obstetric provider supply and demand, especially in hospitals with low birth volumes, is often dependent on family practitioners at a time when their willingness and preparation to practice obstetrics continues to decline [3].

### Regional Response: Medical Education

Fortunately, the ongoing graduate medical education (GME) programs at Mountain Area Health Education Center (MAHEC) excel at training full-spectrum family practitioners as well as obstetricians interested in rural practice who are already familiar with regional obstacles and possible solutions. The obstetric GME program is based in Asheville while those for family medicine are based in Asheville and neighboring Hendersonville, with a new program launching in 2020 in Boone. Further, University of North Carolina School of Medicine third- and fourth-year students may also choose a rural longitudinal curriculum based in Asheville for their clinical rotations. This pairs each student with a rural practitioner for much of his or her training and exposes the student to the many positive aspects of living and working in a small community. Data show that training primary care doctors in areas where they are needed results in practicing in that region after residency concludes [4]. At MAHEC, approximately 60% of family medicine residency graduates remain in WNC and 45% of obstetrics graduates practice in rural areas for at least 5 years (internal data, MAHEC). Recent regional adaptations to the shortage of obstetricians in WNC have created unique opportunities for family practitioners, certified nurse midwives, and nurse practitioners in remote regions to provide routine outpatient antepartum and postpartum care while handing off to regional centers for delivery.

### Regional Response: Provider Resources

Numerous resources help support our regional obstetric care providers when patient complexity increases and sub-

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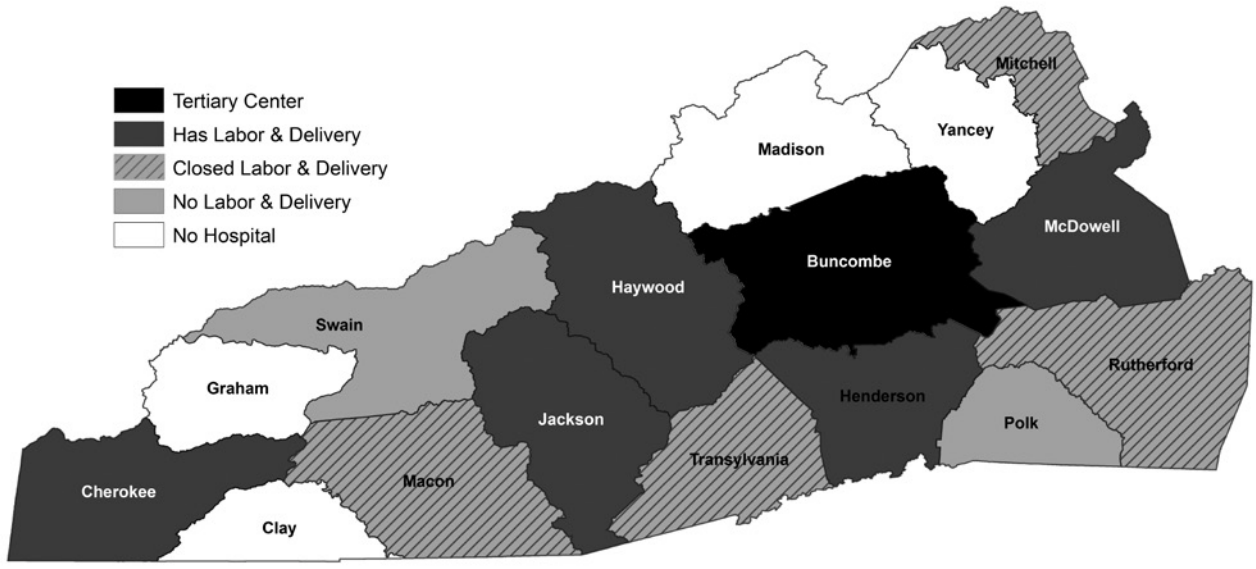
**FIGURE 1.**
**Availability of Hospital Labor & Delivery in Western North Carolina***




Source. Colburn JL. Availability of Hospital Labor & Delivery in WNC [map]. Asheville, NC; 2019. Using: ArcGIS Desktop: Release 10.7.1. Redlands, CA: Environmental Systems Research Institute.

specialty access is limited (there are currently only 2 maternal-fetal medicine specialists in WNC).

### *Education*

Project ECHO (Extension for Community Healthcare Outcomes—developed in New Mexico with teleconferencing technology—uses representative case reports followed by a short lecture and discussion to successfully connect obstetric specialists, including maternal-fetal medicine (MFM) physicians, to local providers [5]. MAHEC has developed 9 different ECHO series over the last 2 years with almost 1,200 participants from all 16 WNC counties. The perinatal series includes topics ranging from the diagnosis and treatment of gestational diabetes to the outpatient management of preeclampsia without severe features. One local Federally Qualified Health Center (FQHC) has set up a monthly conference with MFM for chart review of complex patients. In addition, an ultrasound conference, which includes remote access capability, occurs monthly for ongoing provider education in perinatal and gynecologic imaging.

### *Clinical Support*

Many tertiary centers use a physician access line service (PALS) telephone connection to allow 24-hour access to on-call specialists and subspecialists for consultation and patient transfer. Through Mission Health's PALS line, Mission Direct, an MFM can be reached at 1-866-RSKY OB for immediate consultation.

The health system also offers an online resource (the Women's Service Line Toolbox at https://missionhealth.org/medical-professionals/for-providers/womens-toolbox/womens-toolbox-documents-links/ that provides guidance for issues such as late preterm steroid use for fetal lung maturity.

### *Program Support*

Project CARA, our regional program supporting pregnant patients in recovery for substance use disorders, is implementing the hub and spoke model, developed in Vermont, to connect and support patients and providers throughout the region with medication-assisted treatment (MAT) and obstetric care [6]. Since its inception, Project CARA staff have been mentored by faculty from UNC Horizons (the University of North Carolina at Chapel Hill's substance use treatment program for pregnant women and their children) via a Project ECHO "teach the teacher" arrangement. Finally, Centering Pregnancy is a popular model of group obstetric care, primarily for low-risk women, that has been shown to lower racial disparities in preterm birth [7]. At MAHEC, mothers enrolled in centering who develop complications such as gestational diabetes or hypertension can continue with group support and have additional visits in a high-risk clinic setting that is staffed by an MFM but includes their usual Centering provider.

## Regional Barriers to Care

For some high-risk women and their perinatal providers, the path to a tertiary facility for prenatal care or delivery is circuitous. A mother may start care 3 counties away with a family practitioner at a local health department, disclose a substance use disorder in remission for 6 months on MAT and be referred to Asheville for a one-time consultation with

Project CARA. A care plan that includes serial ultrasound for fetal growth at 30 weeks might show that the fetus is growth restricted, and the mother is referred to an obstetrician in a neighboring county (where her delivery would occur if she was low risk) for confirmation of the ultrasound findings and an updated care plan. Coincidentally, low fluid and gestational hypertension might be diagnosed and then her care is transferred to an MFM in Asheville for definitive management and delivery. Without a coordinated referral system, care delays are inherent in each step of this pathway. Her care manager would coordinate transportation and twice-weekly maternal-fetal surveillance between the OB and MFM (the health department does not have a fetal monitor for non-stress tests) and begin the "transfer of trust" for delivery and newborn care in anticipation of potential neonatal intensive care unit (NICU) stay and ongoing family challenges postpartum. The medical care is straightforward, but maintaining patient and provider engagement and conveying caring for all these transitions involves the art of medicine.

As the example illustrates, patients seeking access to the right level of obstetric care face barriers of cost (direct and indirect), transportation, distance, trust, and medical literacy, as well as a lack of availability of subspecialty providers. North Carolina is not a Medicaid expansion state and much of the general population remains under- or uninsured. For MAHEC obstetric providers, 75% of those women served are under- or uninsured (internal data, MAHEC). While it may be tempting to think of patient access as solely an issue for low-income women, almost half of our state's private sector workforce does not have the benefit of paid sick days to use for perinatal care [8]. Regional transportation options are few and often patients must rely on a private vehicle through terrain challenged by rock slides, flash fluids, ice, and snow. Long travel times mean extended time off from work, often not just for the patient. Magnify that by twice-a-week fetal surveillance for the last 8 weeks of a high-risk pregnancy and the family burden increases exponentially.

## Access to Subspecialty Care

Outlying providers send patients directly to subspecialists in 3 models: one-time consultation, shared/collaborative care, or complete transfer of care. Shared care requires consummate attention to communication between the providers who are sharing the care so that each one is aware of any changes to the established care plan or development of new concerns. The local provider frequently continues routine obstetric care, leaving high-risk issues like insulin changes for diabetes to the MFM. Referrals may stem from a known or newly diagnosed maternal condition such as hypertension or diabetes, or fetal findings such as poor growth or a major structural difference. Not infrequently, a patient sent for detailed anatomic ultrasound will have fetal findings that warrant increased surveillance and delivery in a tertiary hospital so she will choose to transfer care. Some patients will have maternal problems beyond those initially disclosed to a referring provider that are identified during an ultrasound visit, and they too may need to transfer or share care for a high-risk maternal issue. Pregnancy care managers help with care coordination for Medicaid patients, many of whom receive assistance after identification as high risk during routine screening.

WNC is on the verge of expanding telehealth capabilities for obstetric consultation, although limited broadband access presents challenges when 20% or more of residents in 11 of 16 counties do not have available connections, and household adoption rates are low even when available [9]. With a number of remote areas currently having recent family practice and midwifery graduates, both patients and providers would benefit from more accessible obstetric consultants. Further, a recent NPR and Robert Wood Johnson Foundation poll reveals about one-quarter of rural Americans have engaged in some form of telehealth for diagnosis and treatment [10]. Telehealth was widely defined in this study, ranging from email to Skype visits. Sixty-nine percent of respondents cited convenience as the primary reason for engaging technology, 30% reported they could not see the provider in person, and 26% said it was too hard to travel [10]. Telehealth services for MFM consultation and fetal imaging would provide increased access to high-risk care for mothers as well as opportunities for ongoing support, education, and relationship building with rural providers. Chart review capabilities could be expanded and formalized to include recommendations from a specialist documented directly in the electronic health record problem list as is done at La Familia Medical Center in Santa Fe, New Mexico [3].

## Future State

Improving access to high-level perinatal care requires innovation, especially in rural areas where a practicing obstetrician may already be a luxury. This is not an issue that can be solved simply by building a better bus route or extending medical office hours. Medical training must continue to include exposure to small rural communities and the providers who serve these populations in hope of deploying graduates to underserved regions. Referral systems must be simple to use and provide clear and expedited communication back to providers. Leveraging technology to expand telehealth to its fullest extent is key to limiting travel distance and lost time for both patients and providers. Avoiding long commutes to outreach sites might increase retention of specialty providers and keep some from early retirement. Additionally, a robust telehealth platform would allow continued expansion of the rural obstetric workforce with strong family physicians and advanced practice providers of all types by connecting "spokes" providers to "hub" perinatal experts. The tele-ICU model, adopted in some areas due to a shortage of critical care specialists, provides real-time, long-distance consultation and oversight, which in turn can improve health equity,

increase patient safety through redundancy, and enhance outcomes through standardization [11]. A similar approach must be considered for rural labor and delivery units. Finally, patient navigation has been used successfully to help breast cancer patients mitigate the distress of the diagnosis and comply with best practices for treatment and follow-up care [12]. Perinatal navigation for those unique situations that require delivery in a tertiary or even quaternary system (such as a prenatal diagnosis of major congenital heart disease) is equally important. The goal, after all, is for our regional patients and their providers to have confidence in our care and comfort in our caring. NCMJ

*Author's note. Prior to print, Erlanger Western Carolina Hospital in Murphy, North Carolina (Cherokee County), announced the closure of both hospital labor and delivery services and its OBGYN practice, leaving only 5 of 16 counties in WNC with hospital obstetric services.

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