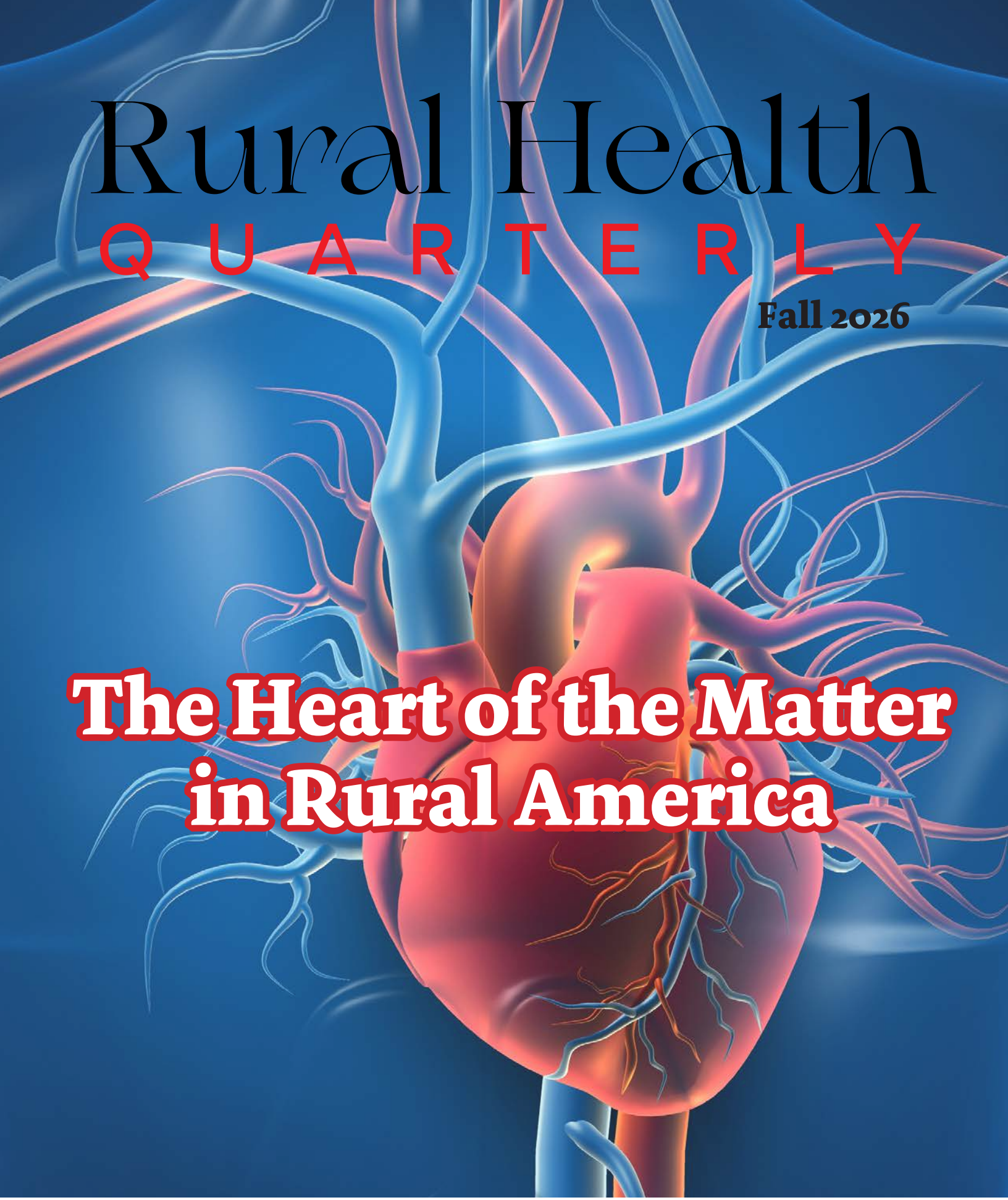
Rural Health
QUARTERLY
Fall 2026



The Heart of the Matter in Rural America

A Publication of the F. Marie Hall Institute for Rural and Community Health

Rural Health Quarterly

Rural Health Quarterly (ISSN 2475-5044) is published by the F. Marie Hall Institute for Rural and Community Health, 5307 West Loop 289, Lubbock, TX 79414, and the Texas Tech University Health Sciences Center.

Copyright 2026 F. Marie Hall Institute for Rural and Community Health

The views expressed in *Rural Health Quarterly* do not necessarily reflect those of the F. Marie Hall Institute or the Texas Tech University Health Sciences Center. Publication of an advertisement is not to be considered endorsement or approval of the product or service.

Rural Health Quarterly is a free publication of the F. Marie Hall Institute for Rural and Community Health at the Texas Tech University Health Sciences Center.

Rural Health Quarterly
Vol. 8, No. 4
Fall 2026

Cynthia Jumper, MD
Interim SVP, Rural Affairs, TTUHSC

Amber C. Parker
Editor-in-Chief & Designer

Miguel Carrasco
Web Developer

Grace Fosu, MA, MS
Diana Vargas-Gutierrez, PhD
Research Associates

Contacts & Permissions
Email us at RHQ@ttuhsc.edu

For more information, please visit
www.ruralhealthquarterly.com

RHQ Advisory Board

Adrian Billings, MD, PhD, FAAAP
F. Marie Hall Endowed Chair for Rural Health
Professor, Department of Family & Community Medicine
Texas Tech University Health Sciences Center, Permian Basin

Amy Hord, LCSW
Behavior Health Counselor
Family Support Services of Amarillo

Courtney Queen, PhD
Associate Dean for Strategic Partnerships
Associate Professor, Department of Public Health
Julia Jones Matthews School of Population and Public Health
Texas Tech University Health Sciences Center, Abilene

Brie Sherwin, JD, PhD
Professor
Texas Tech University School of Law, Lubbock

TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER™

RHIhub
Rural Health Information Hub

Your *First* **STOP** for *Rural Health* **INFORMATION**

ruralhealthinfo.org



Online Library
www.ruralhealthinfo.org/library

RHIhub's online library includes over 12,000 resources, updated daily. Find publications, research, organizations, maps, and websites. Search news and events to stay current on rural health issues.

Looking for funding? Search for the latest federal, state, and foundation opportunities: **www.ruralhealthinfo.org/funding**

Topic & State Guides
www.ruralhealthinfo.org/guides

Compiles in-depth information on rural health topics and your state. Includes key resources, funding, maps, events, news, statistics, and more.

Rural Data Visualizations
www.ruralhealthinfo.org/visualizations

Offers maps, charts, and tools which illustrate publicly available data in a variety of formats to show how rural areas compare.

Case Studies and Conversations
www.ruralhealthinfo.org/case-studies-conversations

Introduces you to successful rural health programs and leaders, highlights important rural health issues, and provides opportunities for you to join the conversation and share your experience.

- **Rural Health Models and Innovations** – Find examples of rural health projects other communities have undertaken. Gain insights from their experiences to help you develop new programs in your area.
- **Rural Monitor** – Online magazine focusing on healthcare and population health in rural communities, with feature articles, interviews with rural health experts, and more.

Tools for Success
www.ruralhealthinfo.org/success

Access resources to help you grow funding, improve programs, demonstrate program effectiveness, plan for long-term success, and promote successes.

- **Am I Rural?** – Determine if your program is considered rural based on various definitions of rural.
- **Evidence-Based Toolkits** – Step-by-step guides to develop programs that improve the health of rural communities, based on evidence-based and promising interventions.

Get Rural Updates

Receive weekly email updates with the latest news, funding opportunities, publications, model programs, new *Rural Monitor* articles, and more.

Custom Alerts

Select the issues, locations, and types of information most relevant to you, and receive daily or weekly notifications of all RHIhub additions on those topics.

Resource and Referral Service

RHIhub provides free, customized assistance for organizations and individuals seeking to maintain and improve healthcare delivery and population health in rural areas. Our information specialists are waiting for your call!

800.270.1898

info@ruralhealthinfo.org

In This Issue

Fall 2026

Welcome to the RHQ 5
Heart of the Matter

Taking a Toll on Rural Americans 6
Brennan O. Parker, PT, DPT

The Heart of Rural Texas 10
Scott Shurmur, MD

Lifestyle Factors in Rural America 12
Christie Hust, MS, RD, LD, CDE

Maternal Cardiovascular Health 18
Kathleen Seaton, MS-III, TTUHSC
Cecilia Velarde, MD (PGY-2)
Joshua Briggs, DO

On the Frontlines of Heart Health 26
Courtney Spurlock, BSN, RN, CCRN

The Power of Cardiac Rehab 30
Laura Hopper, MS, ACSM-CEP, CCRP

RHQ Conference Calendar 34

Welcome to the Rural Health Quarterly

Heart disease or cardiovascular disease is the number one killer of Americans regardless of where they live, in a rural town or in a city. But data show folks in the rural U.S. have a 40% higher risk of developing heart disease, and they also have higher rates of early death.

In this issue of the *Rural Health Quarterly*, we highlight how one part of the United States is plagued with high rates of heart disease. We also look at efforts underway in rural West Texas to help folks improve their heart health.

In this issue, we breakdown the steps people need to take to have a healthy heart, including knowing their cholesterol and blood pressure numbers, as well as just how much a person needs to exercise to help their heart.

One group that many may not think of when talking about heart health is moms-to-be, but our team takes a closer look at the serious, life-threatening issues a woman could face before, during, and even after pregnancy.

You'll also hear from a cardiac care nurse who sees firsthand the epidemic of heart disease, and just what she and her team are faced with every day.

And finally, having heart problems doesn't have to be a life sentence. One cardiac rehabiliation specialist tells us about what goes into getting a heart patient back on their feet with a healthier lifestyle.



Taking a Toll on Rural Americans



Brennan O. Parker, PT, DPT
Enhabit Home Health

Heart disease is the number one killer in America, and over the past few decades, its shadow has fallen heavy across the southeastern United States. Since 1921, the American Heart Association has tracked heart disease as the leading cause of death in this country. In rural America, the threat is not abstract statistics in a medical journal. It is the neighbor who misses church because he is recovering from a sudden event, or the aunt who brushes off chronic fatigue until it lands her in an emergency room two counties over. Many of the factors driving these grim numbers can be prevented or changed over time, but doing so requires an honest look at our local culture, our relationship with work, the hurdles of healthcare access, and how we approach daily prevention.

Understanding the Heart Failure Belt

A specific region in the southeastern part of the country experiences heart disease rates that far exceed the national average. Medical researchers often call this territory 'the heart failure belt'. The core states include Alabama, Arkansas, Georgia, Kentucky, Louisiana, Mississippi, Missouri, Oklahoma, South Carolina, Tennessee, Texas, and West Virginia, along with parts of Michigan. In these states, cardiovascular death rates run roughly 16-20% higher than the rest of the nation. For heart failure and stroke, the numbers climb even higher, reaching as high as 55% above normal national averages.

Heart disease is a broad term for conditions that affect the structure and function of the heart and blood vessels. Some of the most common forms include coronary artery disease, where plaque narrows the blood vessels feeding the heart muscle; congestive heart failure, where the heart grows too weak or stiff to pump efficiently; and arrhythmias, which cause an irregular or dangerous heartbeat.

These conditions share common vascular precursors: atherosclerosis, chronic high blood pressure, elevated cholesterol, and diabetes. In hospital cardiac units, healthcare workers frequently treat patients dealing with what clinicians call the big five:

- Type two diabetes
- Heart failure
- Chronic kidney disease
- High cholesterol
- Coronary artery disease

These serious diagnoses don't appear overnight. They build quietly over years of unbalanced habits, poor nutrition, smoking, heavy drinking, obesity, and long stretches of sedentary living.

The Blue-Collar Paradox

Life in the rural South honors hard, honest work. Our local economies rely on blue-collar trades—factory assembly lines, coal mining, oilfield labor, farming, and construction work. These jobs demand immense physical output. Someone working 50-60 hours a week in the heat or the cold feels physically drained by the end of the work week.

Yet, physical labor does not automatically equal cardiovascular fitness. Tending a farm or working a factory line puts heavy structural strain on the body, triggering chronic fatigue and disrupting sleep patterns. Over time, that constant physical stress burdens the heart. After grinding through a 50-hour work week, people naturally want to spend their days off sitting down to recover. When a sedentary weekend pairs with habits like smoking or unwinding with an alcoholic beverage, the cardiovascular system takes a severe beating, even though the person feels active all week.



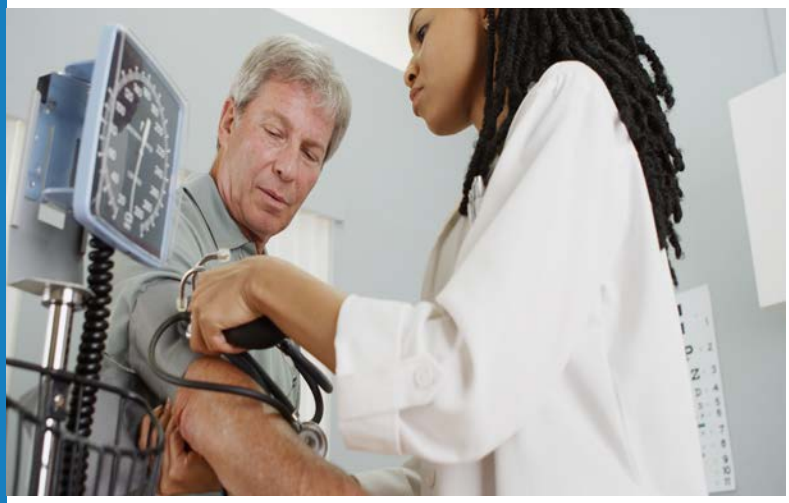


This lifestyle fosters a resilient, tough-it-out mindset that passed down through generations. People who lack an immediate physical disability that stops them from working often see no reason to visit a doctor for routine checks. In hospital rooms, you hear the same phrase over and over: I have been healthy all my life, and I have never been hospitalized. Yet beneath the surface, years of unmanaged blood pressure or creeping cholesterol have turned them into a ticking time bomb. Others point to their days as high school athletes, ignoring the fact that they have sat behind a desk or a truck steering wheel for 30 or 40 years. Eventually, the system gives out, culminating in open-heart bypass surgery or a debilitating stroke. Shifting this generational mentality takes time, but education offers a path forward.

The Realities of Distance and Time

Lifestyle choices alone do not dictate rural health outcomes; our physical infrastructure plays a major role. For someone





living deep in Appalachia or out in West Texas, traveling two or three hours to reach a specialist clinic, or one to two hours just for basic primary care, is a normal reality.

Because a small number of clinics serve massive geographic areas, wait times stretch for months. A routine appointment can take two to three months to secure, while seeing a specialist might require an eight-month wait. When you live paycheck to paycheck, spending an entire day driving and waiting for a mild or moderate health issue does not seem practical. Time is money, especially when you have a family to feed and bills to pay today. Missing one checkup feels harmless but letting those appointments slide year after year allows silent, irreversible damage to accumulate in the heart.

The Mathematics of Prevention

As physical therapists in hospitals and home health settings, my colleagues and I see the direct fallout of delayed care. To help people manage their recovery, we hand out detailed educational packets at the bedside following a cardiac diagnosis. These packets explain the disease in plain language, outline basic diet modifications, and offer safe exercise outlines. This bedside guidance improves recovery and reduces repeat hospitalizations, but true safety comes from changing habits long before a hospital stay becomes necessary.

The American Heart Association provides clear exercise standards based on federal health guidelines to help adults and children protect their hearts.

For adults, the recommendations are straightforward:

- Get at least 150 minutes a week of moderate-intensity aerobic activity, or 75 minutes of vigorous aerobic activity, spread across the week.
- Add moderate to high-intensity muscle-strengthening work, like resistance training or lifting weights, on at least two days a week.
- Spend less time sitting, as even light movement offsets sedentary risks.
- Aim for 300 minutes a week for even greater benefits, increasing intensity gradually.



For children:

- Children aged three to five should stay active with plenty of natural movement throughout the day.
- Kids aged six to 17 need at least 60 minutes moderate to vigorous physical activity every day.
- Include vigorous activity and bone-strengthening exercises at least three days a week.

Moderate exercises include brisk walking at 2.5



miles an hour, water aerobics, social dancing, gardening, or casual cycling. Vigorous exercise includes uphill hiking, running, swimming laps, heavy yard work like continuous digging, fast cycling, and jumping rope. Pairing these habits with proper nutrition can improve life expectancy and daily energy levels.

Modifying the Southern Table

Southern home cooking heals the soul, but traditional favorites do not always support long-term heart health. Biscuits and gravy, country-fried steak, and rich gumbos come to mind first, but they are heavy on ingredients that strain the cardiovascular system. Moderation counts, but long-term consistency counts more.

A heart-healthy plate focuses on whole, nutrient-dense foods while cutting back on processed items. In rural settings, keeping sodium under 2,300 milligrams—and ideally closer to 1,500 milligrams—helps control blood pressure. Swapping heavy cooking fats like butter and lard for unsaturated oils, such as olive or avocado oil, makes a tangible difference. We also tend to turn a blind eye to the sugar in a tall glass of sweet tea on a hot afternoon. Nutrition guidelines suggest keeping added sugars less than 10% of your daily calories, so keep an eye on sodas, syrups, and sweet tea alike.

Shifting the Culture

Fixing the rural health crisis means we cannot wait until people end up in a cardiac unit. We need to expand local healthcare access and reduce travel burdens, but we also must teach heart health early. Bringing these lessons into schools at a young age helps build a culture where prevention is second nature, not a last resort. Only by changing how we view daily care, exercise, and nutrition can we shift the health of the South and protect the future of rural communities. ❤



The Heart of Rural Texas

Scott Shurmur, MD
Chairperson, Dept of Internal Medicine, TTUSHC
Medical Director, Cardiovascular Center of Excellence, TTUHSC
Full Professor, Department of Internal Medicine, TTUHSC

American naturalist John Burroughs once said, "To dwell in the country is to be close to the earth's heart." True though that may be, country living can also put one's own heart at risk. According to Centers for Disease Control and Prevention (CDC) statistics, heart disease death rates were 20% higher in nonmetropolitan areas compared with metropolitan areas in 2014.[1] Eight years later, the statistics had not improved. Data revealed that the largest percentage of preventable deaths from heart disease occurred in the most rural areas, happening at approximately twice the rate of such deaths in metro areas. The report indicated that as population density declined, preventable heart disease deaths steadily increased. In the same 2022 report, similar statistics emerged for death rates from stroke.[2]

This article does not intend to dispel the notion of "good, wholesome country living." But we do have some clues as to why heart disease rates—and subsequent deaths—are disproportionately high among rural residents. Smoking rates are higher in rural populations among both adolescents and adults. Furthermore, data suggest that the more rural the area, the more likely one is to smoke, with rural rates being about 30% higher than those in urban areas. Obesity rates are higher in rural communities as well, and again, the more rural the community, the higher the obesity rate. Education plays a role as well. Rural schoolchildren, though scoring as well on standardized tests as their urban peers, are less likely to attend and graduate from college. For a variety of very complex reasons (employment status, health insurance coverage, access to healthy food, and utilization of healthcare resources), education level has long been inversely correlated with heart disease rates.[3]

1 Ernest Moy, M., Macarena C. Garcia, D., Bastian1, B., Lauren M. Rossen, P., Deborah D. Ingram, P., Mark Faul, P., . . . Michael F. Iademarco, M. (2017). Leading Causes of Death in Nonmetropolitan and Metropolitan Areas — United States, 1999–2014. Morbidity and Mortality Weekly Report (MMWR), 1-8. Retrieved from https://stacks.cdc.gov/view/cdc/43149

2 Centers for Disease Control and Prevention (U.S.). (2024). Preventable Premature Deaths from the Five Leading Causes of Death in Nonmetropolitan and Metropolitan Counties. Morbidity and Mortality Weekly Report (MMWR): Surveillance Summaries, 1-11.

3 Chima Nwizu, M. F. (2022). Cardiovascular Disease in the Rural American Population. National Lipid Association, 1-9.

It is within that "variety of very complex reasons" that the key to understanding increased heart disease rates in rural communities—and perhaps the beginnings of finding solutions—may lie. About one in five uninsured persons in the United States lives in a rural community. Additionally, rural residents are more likely to work in small businesses or agriculture, making them less likely to obtain health insurance through work. Consequently, the uninsured or underinsured are the least likely to regularly access healthcare services.

Healthcare delivery and availability play large roles as well. Per 100,000 population, rural areas have about 40% fewer primary care physicians than urban settings, and the gap in specialist care is even wider. Among 70 West Texas counties, only seven have practicing cardiologists. Rural hospitals can be critical access points for healthcare delivery, but the changing economics of healthcare have placed them at risk. Specifically, 120 of the nation's approximately 1,800 rural hospitals closed between 2010 and 2019, with another 25% estimated to be at risk of closure. In cardiac care, where it is often said that "time is muscle," adding travel time to access care further worsens the odds.

There are efforts underway to improve these bleak statistics. The American Heart Association has issued a "Call to Action" to improve access to care and overcome disparities in rural heart disease death rates. The American College of Cardiology offers a special grant to early-career cardiologists who are particularly interested in advancing cardiovascular health in rural and underserved communities. Congress has passed legislation to help lower-volume rural hospitals better compete economically, and the Centers for Medicare & Medicaid Services are working to develop a set of rural-hospital-specific standards to help ensure the survival of those institutions.

More locally, we here at Texas Tech University Health Sciences Center (TTUHSC) are working on our own solutions. Project ECHO, led by Drs. Lekha George and Ariel Santos, provides monthly educational lectures in a grand-rounds-like format that rural physicians can view remotely to keep abreast of recent clinical and scientific developments. Rural tracks are being developed in many of our residency training programs, including internal medicine and surgery. Additionally, a program is in early development to build a pathway for rural medical school candidates—perhaps beginning in community college—to successfully achieve medical school admission and eventually add to the rural healthcare workforce.

As our beloved TTUHSC president, Dr. Lori Rice-Spearman, is fond of saying, "Your healthcare should not be determined by your zip code." But there is much work to be done before living close to the earth's heart no longer jeopardizes one's own heart.





Lifestyle Factors in Rural America

Christie Hust, MS, RD, LD, CDE
Managing Director PI
Larry Combest Community Health and Wellness Center-TTUHSC



We all learned the basics of healthy eating in school, but not everyone follows those rules. As a registered dietitian, it is my job to help people eat better to achieve and maintain good health. I work at a Federally Qualified Health Center (FQHC) with three locations in Lubbock and one in Abilene. The staff at the FQHC, including doctors, nurse practitioners, dietitians, licensed clinical professionals, licensed clinical social workers, and community health workers, focus on providing a whole-body approach to healthcare, including nutrition. The FQHC also operates an accredited Diabetes Education Center where patients and community members can learn about living with diabetes through healthy cooking, weight-loss classes, and diabetes self-management education. Because the FQHC's primary service areas are rural, we see firsthand how lifestyle factors directly affect disease outcomes.



Multiple studies show that people living in rural communities experience higher cardiovascular disease (CVD) rates and higher mortality rates than their urban counterparts. Research indicates that the solution isn't a one-time quick fix; rather, it requires addressing a complex web of lifestyle factors. These lifestyle choices are often heavily influenced by the specific community where a person lives. This is why understanding rural environment factors matters when discussing CVD.

Food deserts are geographic areas where access to affordable, healthy food is limited. While people in both rural and urban areas may live in a food desert, some rural residents must travel 30 minutes or more to reach the

closest grocery store. Imagine living in the middle of a ranch where there is nothing—no store, no gas station, no restaurant, literally nothing. This isolation can be further complicated by the fact that older Americans in rural communities often feel they have no option but to stay where they own their homes and know their neighbors.

What is Cardiovascular Disease and What Causes It?

There is a significant knowledge gap in rural communities regarding what cardiovascular disease actually encompasses. Many folks think it only applies to someone who has had a heart attack. While that is technically true, it covers much more. Manageable cardiovascular risk factors—such as obesity, diabetes, high blood pressure, and high cholesterol—compound to drastically increase the likelihood of having a heart attack, stroke, or poor health outcome.

Weight

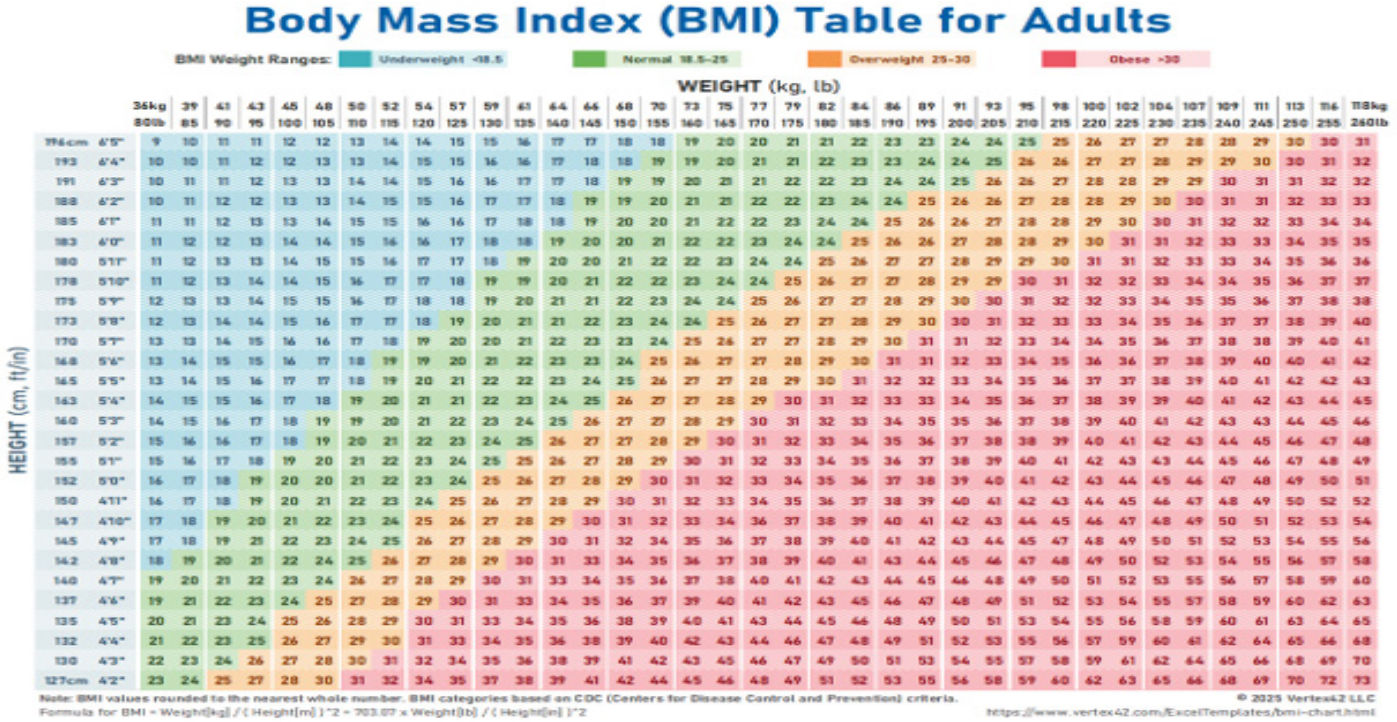
One of the most significant modifiable risk factors for cardiovascular disease is weight. The more excess weight you carry, the higher your risk. In healthcare, you will frequently hear the acronym BMI used to describe weight categories. Body Mass Index (BMI) is a screening tool that estimates whether a person is at a healthy weight relative to their height. While it is not a perfect tool, it offers medical professionals a quick way to gauge overall metabolic health risk.

An **ideal BMI** ranges from **18.5 to 24.9**. A BMI from **25 to 29.9** is classified as **overweight**, and anything **30 or above is classified as obese**. If your BMI is 25 or higher—as it is for roughly 70% of Americans—you face a higher risk of developing cardiovascular disease.

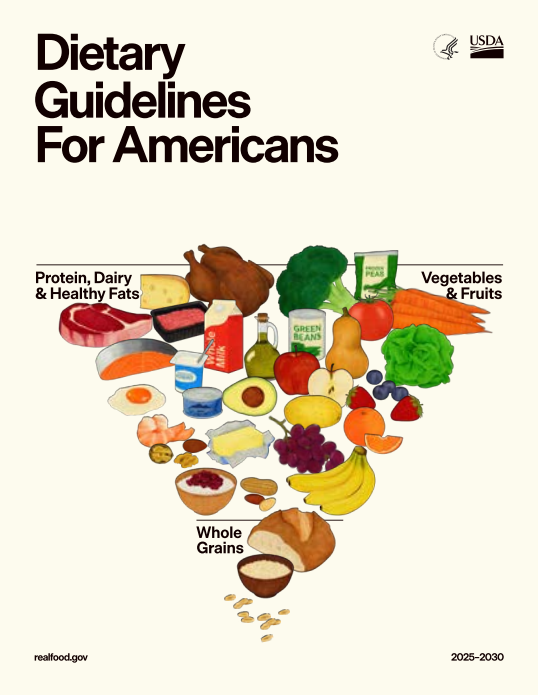
New research suggests that younger adults, ages 40 to 59, are increasingly developing cardiovascular disease due to excess weight. This trend is alarming to healthcare providers because the earlier a patient develops CVD, the worse their long-term survival rate and clinical outcomes become. Fortunately, getting closer to a healthy weight lowers CVD risk, which means focusing on diet and exercise. It sounds simple enough—so why is it so hard?

Food and Nutrition

As noted above, rural communities are often food



deserts, and lack diverse healthy food options. They may rely heavily on processed foods, as seen in local gas stations that carry boxed items high in salt and fat but entirely lack fresh fruit and vegetables. Conversely, some communities experience the opposite issue: a "food swamp," where an overabundance of fast-food options crowds out healthier alternatives. Furthermore, many rural communities lack senior centers compared to their urban counterparts, leaving older rural residents dependent on whatever nearby convenience stores provide for their daily nutrition.



The **U.S. Department of Agriculture (USDA)** and the **U.S. Department of Health and Human Services (HHS)** recently released their updated dietary recommendations. These guidelines outline what individuals should focus on when planning meals, including: eating a variety of proteins, consuming fish at least once a week, eating three servings of vegetables and two servings of fruit daily, prioritizing whole grains, and choosing nutrient-dense proteins such as lean meats, poultry, and eggs. The guidelines also highlight what you should limit, specifically added sugars, sodium, high-saturated-fat proteins, and highly processed foods. This sounds simple enough—unless you live in a rural community without a neighborhood grocery store, or you are managing a strict budget while the cost of living continues to rise.

Many people mistakenly believe they can never enjoy good food again if they want to be healthy, or that their local circumstances permanently lock them out of a healthy lifestyle. However, most dietitians recommend making small, incremental changes to daily life rather than a massive lifestyle overhaul. Small shifts are easier to maintain, whereas major overhauls are difficult to sustain over time. Swapping out fried foods for baked alternatives is a practical change most people can successfully make. The recommendations at the end of this article will help you implement small changes that align with the new guidelines in a way that actually works for your life.

Physical Activity

Physical activity is the other side of the weight management coin. It is not enough to simply eat better; you also need to ensure you are balancing your energy intake with movement. When people hear the phrase "physical activity," they immediately think of a commercial gym, which many rural communities do not have. Again, numerous rural towns lack senior or community centers, whereas urban hubs often include exercise machines in these spaces to encourage public movement. I remember visiting the local school gym with my grandmother as a child, where she and others in our small town would gather to play volleyball—not to win, but just to keep moving.

So, how much physical activity do we actually need? The current clinical guideline recommends at least **150 minutes of moderate-intensity activity each week.** Many people hear that number and panic, thinking they must complete all 150 minutes in a single session. Fortunately, there are many flexible ways to reach this goal:

- **30 minutes**, five days a week
- **20 minutes**, seven days a week
- **15 minutes**, twice a day for five days
- A weekend outdoor adventure that covers your activity for the week



The key is simply to find an activity that moves your body and elevates your heart rate. A combination of aerobic activities (such as walking, running, or water aerobics) and strength training (such as resistance exercises) is recommended for the best health outcomes.

And yes, I can practically see you rolling your eyes at me right now—*who has the time or energy for all that*? Anyone can do it. Walking is completely free, and it is one of the best exercises available. As for weight training, you likely already have a pantry full of equipment; those canned vegetables weigh just enough to build a great starter strength routine. I frequently recommend keeping two cans by your chair at night and performing arm raises while watching TV commercials. Start small and build up. The more you do, the easier it becomes. The hardest part is simply getting started; trust me, I know.

Education

There is a third critical element that must be addressed: education. This goes beyond high school graduation rates, though educational attainment is statistically linked to cardiovascular outcomes. It specifically includes lifestyle and practical education. When I was in high school, my mother made me take a home economics class. At the time, I honestly thought it was a complete waste of time. However, that class is exactly where I discovered how to cook for myself and began reading nutrition labels.

The *Tufts Health & Nutrition Letter* recently shared some alarming statistics regarding food literacy: **28% of Americans** freely admit they do not know how to cook, and **56% struggle** with following basic recipes. For those raised in rural areas, that might sound unbelievable; as kids, your grandma may have kept a garden, or your family raised animals, and you learned to cook whatever was on hand. While kitchen literacy is a widespread issue in urban areas, it is becoming increasingly common in rural communities where residents feel isolated from one another. This is where local 4-H groups and school districts can become incredible community health partners by hosting quarterly cooking classes to build these vital life skills.

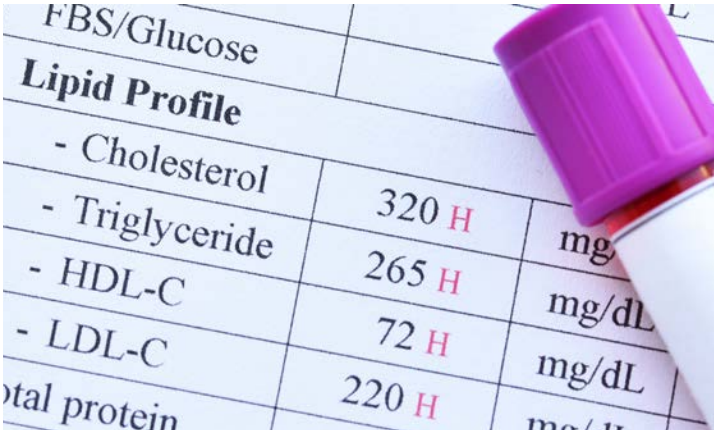
Hospitals and universities are also actively exploring new ways to expand educational opportunities in rural settings. These initiatives include:

- **Telehealth nutrition services:** Offered directly alongside standard medical visits.
- **Virtual digital tools:** Sent directly to patients to use at home.
- **Mobile wellness vans and buses:** Bring nutrition educators right into remote communities.

There is a long list of exciting possibilities being deployed to provide necessary health education to individuals in the most remote locations. The future looks bright as we find innovative ways to improve the health of all people, regardless of their zip code.

What You Can Do

You might be at the point where you are saying, "Okay, I get it, but what can I actually do right now?" How do you translate this information into small, practical steps? The list below features simple changes you can start making today. You do not have to tackle all of them at once, but the more you incorporate, the more your health will improve. The main goal of each suggestion is to help you find a healthy weight, eat better, and move more—the three winning moves to lower your risk of cardiovascular disease.



1. **Know Your Numbers**
   - Discover your current **BMI, blood pressure, and cholesterol numbers**. The more data you have, the better you can manage your health. Ask your healthcare provider about this info during your next visit.

2. **Choose Heart-Healthy Foods**
   - **Focus on vegetables:** Fresh vegetables are ideal, but frozen options are excellent too. If you rely on canned vegetables, drain off the packing liquid and rinse them or cook them in fresh water to drastically reduce your sodium intake.
   - **Focus on fruits:** Whole fruit is always best. If you buy canned fruit, make sure it



is packed in its own juice rather than heavy syrup. Limit commercial fruit juices unless they are labeled as 100% juice.
   - **Prioritize lean proteins:** Plan your meals on lean meats, poultry, eggs, nuts, seeds, legumes, and fatty fish high in omega-3s, such as salmon, tuna, and trout.
   - **Choose whole grains:** Swap out refined carbs for brown rice, whole-grain breads, whole-wheat pasta, corn or whole-wheat tortillas, and plain oatmeal like grandma used to make. This naturally increases your fiber intake, which actively helps lower cholesterol.
   - **Adjust your cooking methods:** Shift from frying foods to baking, broiling, grilling, or roasting them to reduce unhealthy fat and cholesterol intake.
   - **Minimize processed items:** Avoid heavily processed snacks like chips, commercial cookies, and candies as much as possible.
   - **Rethink your drink:** Cut out sugary sodas and sweet teas, opting instead for water flavored with slices of fresh fruit or no-sugar-added sparkling water.



3. **Increase Physical Activity**
   - Walk around your house, yard, or neighborhood for **20 minutes every day**.
   - Complete easy **arm lifts or bicep curls using food cans** while watching television in the evenings.
   - Sit comfortably in your chair and **draw the letters of the alphabet in the air with your legs** to build lower-body mobility.
   - Tune into a local station or find an online video to do **chair aerobics** in the mornings.
   - Launch a **local walking club** to get your neighbors moving and build a mutual support system.
   - Put on your favorite music and **dance for 30 minutes**, five times a week.

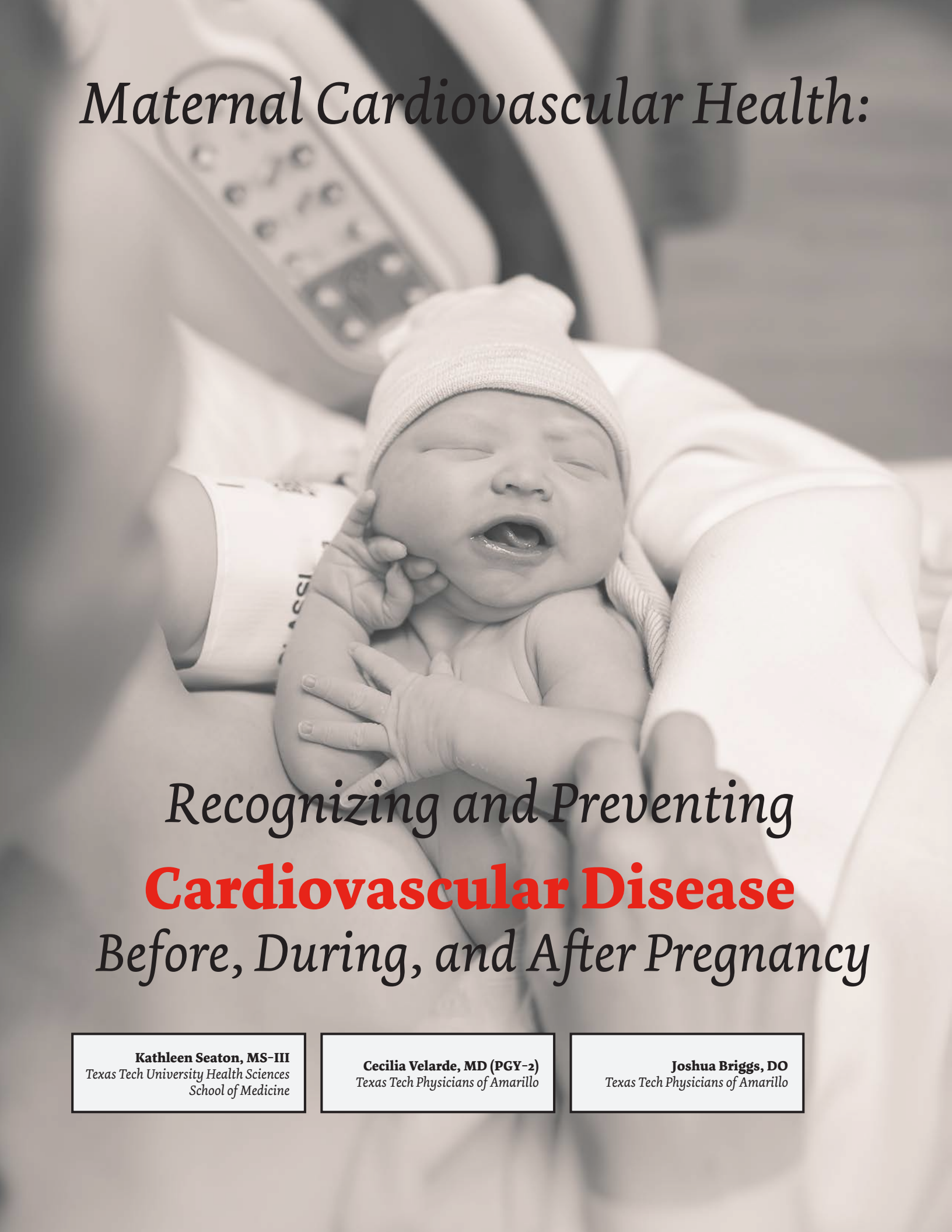


4. **Stay Educated**
   - Ask your doctor or clinic provider today about local or virtual classes, telehealth resources, and educational programs available to help you take charge of your cardiovascular health.

Conclusion

Rural towns are quite diverse and cannot all be lumped into one category. This is why it is so important for local leaders to assess their own communities to find the best solutions. For example, I live in a "rural hub" of well over 100,000 people, but we are surrounded by smaller communities of fewer than 1,000 residents. I also spent many summers in a small farming community of fewer than 2,500 people. These contrasting environments have shown me how vital it is to understand your specific community to find effective solutions to any problem.





Maternal Cardiovascular Health:

Recognizing and Preventing

Cardiovascular Disease

Before, During, and After Pregnancy

Kathleen Seaton, MS-III
Texas Tech University Health Sciences School of Medicine

Cecilia Velarde, MD (PGY-2)
Texas Tech Physicians of Amarillo

Joshua Briggs, DO
Texas Tech Physicians of Amarillo

Pregnancy is a time of significant physiologic change. The mother's cardiovascular system adapts to support the growing fetus, with increases in blood volume, heart rate, and cardiac output placing additional demands on the body. For most women, these changes are well-tolerated and unnoticed adaptations. For others, pregnancy can reveal previously unrecognized cardiovascular disease or worsen a preexisting condition.

Cardiovascular disease has become an increasingly important contributor to maternal morbidity and mortality. Although maternal cardiovascular complications can be serious, many can be recognized early and treated preventively when patients and healthcare providers are aware of a specific diagnosis. This is particularly important in rural communities like the Texas Panhandle, where access to maternal-fetal medicine specialists and advanced obstetric services may be limited, and patients often drive over an hour to receive prenatal care.

Maternal cardiovascular health should not be viewed as a concern only during pregnancy. It begins before conception, continues throughout pregnancy and the postpartum period, and may influence a woman's cardiovascular health for a lifetime after delivery.

The Cardiovascular Changes of Pregnancy

Beginning early in pregnancy, the body increases blood volume to provide adequate circulation to both the mother and the developing fetus. Blood volume can be expected to increase by 30% to 50% in the first trimester, and red blood cell (RBC) mass expands by 18% to 30% by the third trimester.[1] This causes a physiologic anemia of pregnancy because blood plasma volume increases more than RBC mass, which is reflected by lower hemoglobin and hematocrit levels. The mother's heart rate also increases by 10 to 20 beats per minute from her resting baseline, and the heart pumps more blood each minute. Additionally, blood vessels become more relaxed, which reduces systemic vascular resistance. This relaxation, compounded by a lack of venous musculature to pump blood back to the heart, can cause the swelling that pregnant mothers frequently experience.

These changes allow the cardiovascular system to meet the increased metabolic demands of pregnancy while increasing the heart's overall workload compared to its baseline outside of pregnancy. Some symptoms resulting from these normal changes can overlap with symptoms of cardiovascular disease: mild shortness of breath with exertion, fatigue, and occasional awareness of the heartbeat may occur during an otherwise healthy pregnancy and do not necessarily mean something is wrong. The challenge for both patients and clinicians is recognizing when symptoms have moved beyond what is expected.

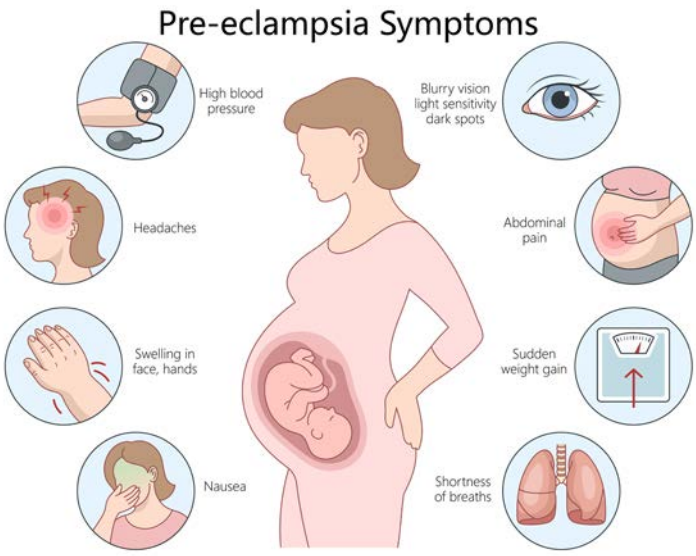
Hypertensive Disorders of Pregnancy

Hypertensive disorders are among the most common cardiovascular complications associated with pregnancy. They include chronic hypertension, gestational hypertension, preeclampsia, and eclampsia. It has been estimated that preeclampsia complicates 2% to 8% of pregnancies globally.[2] In developed countries, 16% of maternal deaths can be attributed to hypertensive disorders of pregnancy.[3] In the United States, the rate of preeclampsia increased by 25% between 1987 and 2004.[4]

Hypertension in pregnancy exists on a continuum, beginning with chronic or gestational hypertension and potentially progressing to eclampsia.

Chronic hypertension refers to high blood pressure that is present before pregnancy or develops prior to 20 weeks of gestation. Gestational hypertension develops after 20 weeks of pregnancy without the other findings associated with preeclampsia. Both chronic and gestational hypertension are defined as two separate blood pressure readings of 140/90 mmHg or higher taken at least four hours apart. Both conditions increase the risk of developing preeclampsia, with or without severe features.

Preeclampsia occurs on the hypertension spectrum and is divided into preeclampsia without severe features and preeclampsia with severe features. Preeclampsia is characterized by new-onset hypertension after 20 weeks of pregnancy accompanied by protein in the urine.



Preeclampsia with severe features is complicated by severe-range blood pressure (systolic ≥160 mmHg and/or diastolic ≥110 mmHg) or evidence of significant end-organ injury, such as a low platelet count, renal insufficiency, elevated liver function tests, pulmonary edema, or neurologic symptoms. It carries high maternal-fetal risk and generally requires magnesium sulfate, antihypertensive therapy, and delivery based on gestational age and clinical stability. The definitive treatment for preeclampsia is the delivery of the fetus and placenta. The placenta is hypothesized to be the source of preeclampsia due to the abnormal implantation of the spiral arteries.

Symptoms such as a severe headache unresolved by medication, visual changes, severe right upper-quadrant abdominal pain, sudden or significant lower-extremity swelling, shortness of breath, or markedly elevated blood pressure require prompt evaluation.

The majority of women with preeclampsia without severe features have favorable outcomes. However, the overall prognosis depends on the severity of the disease and gestational age at delivery. Potential maternal complications from preeclampsia include eclampsia, pulmonary edema, and stroke. Fetal complications include fetal growth restriction and intrauterine fetal demise. Preeclampsia is a disorder affecting the placental spiral arteries, causing uteroplacental insufficiency that can deprive the fetus of oxygen and essential nutrients.

Eclampsia occurs when severe preeclampsia progresses to cause seizures, carrying a high risk of maternal and fetal morbidity and mortality. Eclamptic seizures respond well to magnesium sulfate.

Preeclampsia can also occur after delivery. Rarely, patients can be diagnosed with postpartum preeclampsia up to six weeks after giving birth. The most common symptom is a severe headache unchanged by medication, accompanied by severe-range blood pressure. This is one of the many reasons postpartum follow-up is critically important. Blood pressure checks within seven days post-delivery are the standard of care. Treatment usually consists of antihypertensive medications and magnesium sulfate to prevent eclamptic seizures.

Who is at Risk?

Women who have been diagnosed with preeclampsia in a prior pregnancy—especially when associated with an adverse outcome—pregestational diabetes mellitus type 1 or type 2, or chronic hypertension are at the greatest risk of developing preeclampsia. Other high-risk factors include chronic kidney disease, autoimmune disorders like lupus, and multiple gestations such as twins or triplets.

Moderate risk factors include:

- Obesity (pre-pregnancy BMI >30)
- Advanced maternal age (>35 years)
- Younger maternal age (<20 years)
- Family history of preeclampsia
- African American ethnicity
- Low socioeconomic status
- In vitro fertilization
- First pregnancies[5]

African American women have higher rates of chronic hypertension and preeclampsia; therefore, they are at an increased risk for serious complications due to various societal and health inequities.[6] However, more than half of all cases of preeclampsia occur in healthy, first-time pregnant women without identifiable risk factors.[7]



The only proven therapy to decrease the risk of preeclampsia is daily low-dose aspirin beginning at 12 weeks of gestation. Patients are considered candidates for aspirin if they have one high-risk factor or two or more moderate risk factors. There is adequate evidence that daily aspirin reduces the risk of preterm delivery, intrauterine growth restriction, and perinatal mortality in patients who are at an increased risk for preeclampsia.[5]

What to Expect If You Are Diagnosed with a Hypertensive Disorder of Pregnancy

Hypertensive disorders of pregnancy classify a pregnancy as high risk. This may mean more frequent prenatal appointments and co-management with a high-risk obstetrician or maternal-fetal medicine specialist.

Following the CHAP (Chronic Hypertension in Pregnancy) trial, the American College of Obstetricians and Gynecologists (ACOG) recommends using a threshold of ≥140/90 mmHg to initiate antihypertensive therapy, rather than waiting until severe-range blood pressure readings occur.[8] Labetalol, nifedipine, and hydralazine are commonly used in pregnancy due to their strong safety profiles.

For gestational hypertension and preeclampsia without severe features, current recommendations advise waiting until severe-range blood pressure readings occur to initiate antihypertensive medications. For gestational hypertension, it is recommended to check urine protein weekly to assess for progression to preeclampsia.[9]

For preeclampsia without severe features, regular monitoring of blood pressure can take place on an outpatient basis. Blood pressure should be checked twice weekly. Labs such as platelet count, serum creatinine, and liver enzymes should be monitored weekly to check for end-organ damage. Fetal well-being is also routinely monitored using non-stress tests and biophysical profiles due to the increased risk of uteroplacental insufficiency, fetal intrauterine growth restriction, and intrauterine fetal demise. Fetal monitoring to evaluate for intrauterine growth restriction is done via ultrasound every 3–4 weeks, alongside an amniotic fluid volume assessment at least once weekly.

Without the presence of severe features, delivery is planned for 37 weeks because the risks of prematurity outweigh the maternal-fetal risks of continuing the pregnancy. If the diagnosis of preeclampsia is made before 34 weeks of gestation, corticosteroids may be administered to help fetal lung maturity. This is done to increase fetal survival in case the preeclampsia becomes severe and preterm delivery is required.

In preeclampsia with severe features, the risks of maternal-fetal complications from continued pregnancy are much higher than the fetal risk of prematurity, so delivery is executed at 34 weeks of gestation. Once severe features have



developed, the patient must be managed in the hospital rather than as an outpatient. Magnesium sulfate is also usually administered to prevent progression to eclampsia.

Preeclampsia is generally not an automatic indication for a cesarean delivery. Epidural or spinal anesthesia is considered safe unless platelet counts are severely low, which can be a complication of severe preeclampsia or HELLP (Hemolysis, Elevated Liver enzymes, and Low Platelets) syndrome. Fetal heart rate monitoring during labor is essential due to the uteroplacental insufficiency caused by preeclampsia.

The Postpartum Period

Blood pressure, symptoms, and any laboratory abnormalities can be expected to normalize in the postpartum period. However, patients should be closely monitored until evidence of clinical improvement is seen, as there can be an initial worsening of hypertension and laboratory findings in the first 48 hours after delivery. Women with persistent hypertension lasting more than 12 weeks postpartum should be diagnosed with chronic hypertension and managed as an adult with primary essential hypertension.Women diagnosed with preeclampsia are at an increased risk of future cardiovascular or cerebrovascular events, with an estimated doubling of odds compared to unaffected women.[10] The risk is even higher for women with recurrent preeclampsia. It is important to note the significant overlap between the risk factors for preeclampsia and those for cardiovascular disease.

The postpartum period can be challenging because clinical and family attention naturally shifts from the mother to the baby. New mothers may minimize their own symptoms or assume that feeling exhausted is simply a normal part of parenthood. Healthcare providers and families can help by recognizing that maternal health remains a strict priority after delivery.

Peripartum Cardiomyopathy

Peripartum cardiomyopathy is a form of systolic heart failure that develops in the last month of pregnancy or in the months following delivery. The heart becomes less effective at pumping blood, potentially resulting in symptoms of heart failure. Incidence is higher in African American women, women of advanced maternal age, and those with hypertensive disorders of pregnancy or multiple gestation pregnancies. An estimated 22% of women with peripartum cardiomyopathy also develop preeclampsia.

Diagnosis can be delayed because early symptoms closely resemble common experiences during pregnancy and the postpartum period. Fatigue, shortness of breath, and swelling may initially appear to be normal consequences of pregnancy or caring for a newborn.

However, symptoms such as severe or worsening shortness of breath, difficulty breathing while lying flat, waking from sleep gasping for air, a persistent rapid heartbeat, or significant swelling should prompt immediate medical evaluation.

Early diagnosis is vital because targeted treatment can improve symptoms, preserve cardiac function, and reduce the risk of serious complications. Diagnosis requires an echocardiogram demonstrating a left ventricular ejection fraction (LVEF) <45% and may or may not show left ventricular dilation.

Treatment for heart failure requires special clinical considerations during pregnancy and

lactation. The prognosis is typically worse for patients with a lower baseline LVEF, indicating that the heart is significantly less effective at pumping blood. Outcomes vary from complete recovery, persistent myocardial dysfunction and heart failure to rapid deterioration, leading to urgent need for temporary or durable mechanical circulatory support and cardiac transplantation. Women who have experienced peripartum cardiomyopathy also require specialized counseling regarding future pregnancies due to the high likelihood of recurrence in subsequent gestations.[11]

Pre-existing Heart Disease

Not all maternal cardiovascular disease develops during or after pregnancy. Some women enter pregnancy with congenital heart disease, valvular disease, cardiomyopathy, pulmonary hypertension, or other cardiovascular conditions.

Advances in medical and surgical care mean that many individuals born with congenital heart disease now reach childbearing age. Pregnancy can nevertheless pose significant risks depending on the specific cardiac condition.

Pulmonary hypertension has previously been considered a contraindication to pregnancy due to high rates of maternal mortality (approaching **50%**). In pulmonary hypertension, the right side of the heart is unable to withstand the physiologic cardiovascular changes of pregnancy, leading to right heart failure. Many people with pulmonary hypertension additionally have other congenital cardiac defects or cardiomyopathy. In addition to high mortality rates, it is associated with increased maternal adverse cardiac events.[12]

Ideally, women with known cardiovascular disease should receive preconception counseling from a **maternal-fetal medicine (MFM)** specialist and their cardiologist. This allows clinicians to assess cardiac function, review medications, determine whether pregnancy is safe, and develop a plan for monitoring during pregnancy and delivery.

For women with significant disease, care may involve a multidisciplinary team including obstetricians, cardiologists, maternal-fetal medicine specialists, anesthesiologists, and primary care providers.

Acute Cardiovascular Emergencies

Although uncommon, acute cardiovascular emergencies can occur during pregnancy and the postpartum period. These include myocardial infarction, spontaneous coronary artery dissection, pulmonary embolism, and aortic dissection.

Spontaneous coronary artery dissection, or **SCAD**, is a rare cause of acute coronary syndrome that can occur in otherwise healthy women and has been associated with pregnancy and the postpartum period.

These conditions demonstrate why serious symptoms should not be dismissed simply because a patient is young or recently gave birth. New chest pain, severe shortness of breath, syncope, or other concerning symptoms warrant emergent evaluation.



Prevention Begins Before Pregnancy

The best time to address many cardiovascular risk factors is before conception. Preconception counseling by a maternal-fetal medicine

specialist and a cardiologist provides an opportunity to identify hypertension, diabetes, obesity, smoking, and other modifiable risks. Women with known cardiovascular disease can undergo appropriate evaluation and medication review before becoming pregnant. Early consultation with appropriate specialists can help determine the safest approach to pregnancy and establish a plan for monitoring.

Medication management is particularly important because some cardiovascular medications are teratogenic, meaning they can harm the development of the fetus. Some of the most common medications used for hypertension include **angiotensin-converting enzyme (ACE) inhibitors** like lisinopril and **angiotensin receptor blockers (ARBs)** like losartan, which are both teratogenic. Patients should not stop prescribed medications on their own but should instead discuss pregnancy planning with their healthcare provider. Healthcare providers should consider the childbearing potential and goals of the patient prior to prescribing ACE inhibitors or ARBs.

The Rural Healthcare Challenge

Maternal cardiovascular health presents unique challenges in rural communities. Rural patients may live significant distances from OB/GYN clinics, hospitals, cardiologists, maternal-fetal medicine specialists, or tertiary care centers. Transportation difficulties, limited healthcare availability, and delays in transfer can complicate the management of high-risk pregnancies.

It is important for healthcare providers to recognize the significance of a patient taking hours out of their day to drive to a prenatal appointment. It is a testament to their commitment to their health and the health of their unborn child, especially for high-risk patients who must make this sacrifice weekly.

It is also vital for patients who live in rural areas to be knowledgeable about the signs and symptoms of cardiovascular disease so they can be proactive and seek treatment early.

Key Points

- **For patients:** Understanding warning signs can be lifesaving. Chest pain, severe or worsening shortness of breath, fainting, severe or persistent palpitations, severe headache or visual changes, sudden significant swelling, and severe upper abdominal pain should not simply be assumed to be normal consequences of pregnancy or the postpartum period.
- **For healthcare providers:** Maintaining a high index of suspicion is equally important. Serious cardiovascular disease can affect patients regardless of age or underlying health. Maternal cardiovascular health should be addressed from preconception to well after delivery. Pregnancy can reveal previously unrecognized cardiovascular disease, identify women at increased lifetime cardiovascular risk, and create an important opportunity for prevention and early intervention.

Through awareness, timely recognition, appropriate management, and coordinated care, patients and healthcare providers can work together to protect maternal cardiovascular health during pregnancy and throughout the years that follow.

References

1. Hytten, F. (1985). Blood volume changes in normal pregnancy. Clinics in haematology, 14(3), 601-612. doi:10.1016/S0308-2261(21)00496-3
2. Steegers, E. A., Von Dadelszen, P., Duvekot, J. J., & Pijnenborg, R. (2010). Pre-eclampsia. The lancet, 376(9741), 631-644. doi:10.1016/S0140-6736(10)60279-6
3. Khan, K. S., Wojdyla, D., Say, L., Gülmezoglu, A. M., & Van Look, P. F. (2006). WHO analysis of causes of maternal death: a systematic review. The lancet, 367(9516), 1066-1074. doi:10.1016/S0140-6736(06)68397-9

4. Wallis, A. B., Saftlas, A. F., Hsia, J., & Atrash, H. K. (2008). Secular trends in the rates of preeclampsia, eclampsia, and gestational hypertension, United States, 1987–2004. American journal of hypertension, 21(5), 521-526. doi:10.1038/ajh.2008.20
5. US Preventive Services Task Force, Davidson, K. W., Barry, M. J., Mangione, C. M., Cabana, M., Caughey, A. B., ... & Wong, J. B. (2021). Aspirin use to prevent preeclampsia and related morbidity and mortality: US Preventive Services Task Force recommendation statement. Jama, 326(12), 1186-1191. doi:10.1001/jama.2021.14781
6. Ghosh, G., Grewal, J., Männistö, T., Mendola, P., Chen, Z., Xie, Y., & Laughon, S. K. (2014). Racial/ethnic differences in pregnancy-related hypertensive disease in nulliparous women. Ethnicity & disease, 24(3), 283.
7. Kenny, L. C., Black, M. A., Poston, L., Taylor, R., Myers, J. E., Baker, P. N., ... & North, R. A. (2014). Early pregnancy prediction of preeclampsia in nulliparous women, combining clinical risk and biomarkers: the Screening for Pregnancy Endpoints (SCOPE) international cohort study. Hypertension, 64(3), 644-652. doi:10.1161/HYPERTENSIONAHA.114.03578
8. Tita, A. T., Szychowski, J. M., Boggess, K., Dugoff, L., Sibai, B., Lawrence, K., ... & Andrews, W. W. (2022). Treatment for mild chronic hypertension during pregnancy. New England Journal of Medicine, 386(19), 1781-1792. doi:10.1056/NEJMoa2201295
9. Obstetricians, A. (2020). of, Gynecologists. Gestational hypertension and preeclampsia: ACOG Practice Bulletin, number 222. Obstet Gynecol, 135(6), e237-60. https://www.acog.org/clinical/clinical-guidance/practice-bulletin/articles/2020/06/gestational-hypertension-and-preeclampsia
10. Brown, M. C., Best, K. E., Pearce, M. S., Waugh, J., Robson, S. C., & Bell, R. (2013). Cardiovascular disease risk in women with pre-eclampsia: systematic review and meta-analysis. European journal of epidemiology, 28(1), 1-19. doi:10.1007/s10654-013-9762-6
11. Davis, M. B., Arany, Z., McNamara, D. M., Goland, S., & Elkayam, U. (2020). Peripartum cardiomyopathy: JACC state-of-the-art review. Journal of the American College of Cardiology, 75(2), 207-221. doi:10.1016/j.jacc.2019.11.014
12. Thomas, E., Yang, J., Xu, J., Lima, F. V., & Stergiopoulos, K. (2017). Pulmonary hypertension and pregnancy outcomes: insights from the national inpatient sample. Journal of the American Heart Association, 6(10), e006144. doi:10.1161/JAHA.117.006144





On the Front Lines of Heart Health

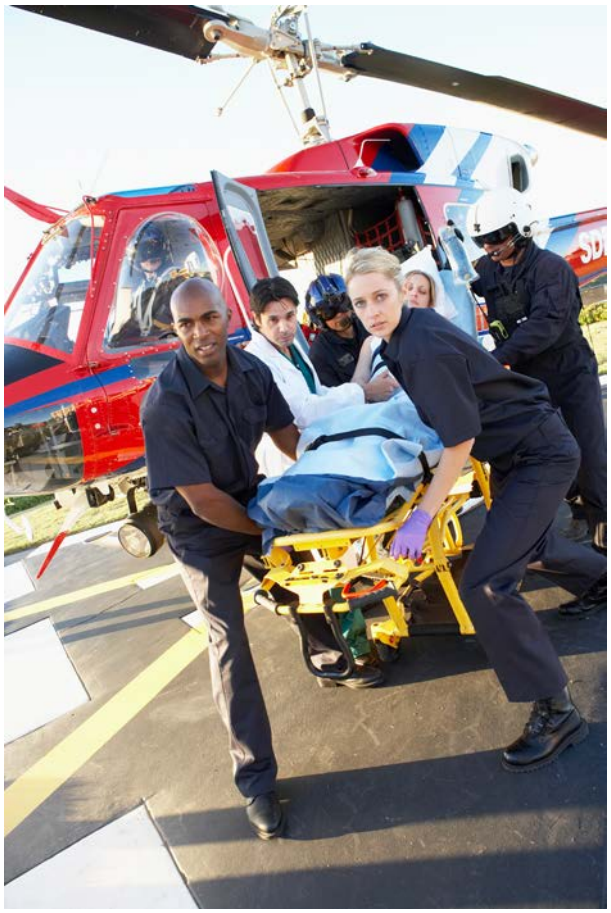
Courtney Spurlock, BSN, RN, CCRN
Lexington, Kentucky

During my time working as a registered nurse in a postoperative cardiovascular intensive care unit (CVICU), I cared for patients during some of the scariest moments of their lives. Patients ranging from their 30s to their 80s came to our unit directly from the operating room after undergoing major heart surgeries, including coronary artery bypass grafting (CABG) and heart valve replacements. Many arrived with a breathing tube in place, relying on a ventilator to breathe while receiving multiple intravenous medications to support their blood pressure and heart rate. Other patients were immediately started on continuous dialysis because their kidney function could no longer sustain life independently. As these clinical complexities suggest, I cared for some of the most critically ill patients imaginable.

Working in this intensive environment taught me just how quickly a life can change. One thing that always stood out to me was how many patients had gone years without seeing a primary care provider (PCP) or establishing routine care. Going from rarely visiting a doctor to suddenly being told you need a major lifesaving heart surgery is an overwhelming paradigm shift. Although not every cardiovascular condition can be prevented, seeing these patients firsthand made me realize how vital it is to manage health proactively before a crisis develops.



This insight hits especially close to home for me because I grew up in a rural part of eastern Kentucky. Healthcare access in parts of the state can be severely limited, forcing residents to drive hours to see a specialist. Growing up, there was no nearby facility capable of performing open-heart surgery in an emergency. Patients needing that tier of intervention required transport by ambulance or helicopter to a distant, larger medical center. After working in the CVICU, I fully grasped the stark implications of healthcare disparities in rural communities. As a future nurse practitioner, these experiences will permanently drive how I care for patients and advocate for preventive medicine.



Every shift in the CVICU offered a unique set of challenges, but our baseline responsibility remained the same: providing close monitoring and specialized care after major cardiac surgery. We regularly admit patients who arrive via flight teams for urgent operations. While some patients arrived relatively stable, requiring only a few liters of supplemental oxygen, others required advanced mechanical circulatory support, such as an intra-aortic balloon pump (IABP). Managing patients in such fragile conditions demanded sharp clinical instincts, rapid decision-making, and advanced critical thinking.

Because our patients were in such critical condition, we were responsible for closely tracking their hemodynamics, preempting complications, and guiding them through the fragile early stages of recovery. Some patients progressed smoothly, while others experienced severe complications that required immediate, aggressive intervention. For instance, when a patient's renal function deteriorated, we initiated continuous renal replacement therapy (CRRT). Seeing patients require this level of care was a reminder of how much the body's organs depend on one another and how complicated recovery from major heart surgery can become.

For the most extreme cases of cardiopulmonary failure, we utilized extracorporeal membrane oxygenation (ECMO). This advanced life support circulates blood through an external machine to add oxygen and remove carbon dioxide, allowing the patient's heart and lungs to rest while the medical team treats the underlying pathology. Because providing ECMO demands immense institutional resources, it is typically restricted to Level I trauma centers.

Beyond managing high-tech machinery, one of the most rewarding aspects of my role was patient education and early mobility. Explaining to a patient that despite having their chest open the day before, we would have them sitting up in a chair today could be incredibly intimidating for them. Yet early mobility is an essential tool for preventing postoperative risks like pneumonia. Witnessing a patient improve from arriving paralyzed on a ventilator to taking their first steps toward recovery was profoundly fulfilling.



Ultimately, this experience shattered the misconception that heart disease only affects older populations; I frequently cared for patients in their 30s who required urgent surgical intervention. Regardless of a patient's



age, seeing them fight for survival underscored the devastating trajectory of cardiovascular disease. It highlighted a critical gap in our healthcare system: many individuals believe a doctor's visit is only necessary when symptoms appear. However, risk factors like hypertension are famously dubbed the "silent killer" because they quietly damage the vascular system without warning. My time in the CVICU has solidified my commitment to transitioning from a reactionary provider to a proactive nurse practitioner dedicated to preventive education.

High blood pressure, high cholesterol, and diabetes are prime examples of conditions that can go unnoticed or remain poorly controlled without routine medical care. Over time, these silent conditions can contribute to serious cardiovascular complications.

As a CVICU nurse, I have cared for many patients who presented with multiple cardiovascular risk factors simultaneously. Seeing how critically ill these patients became made me realize that health management should not begin only after someone reaches a hospital bed. As a future nurse practitioner, the critical importance of preventive healthcare continues to be a cornerstone of my education. Having an established primary care provider (PCP) gives patients a trusted partner they can turn to for routine checkups, chronic disease management, and health education.

One of the biggest misconceptions people have is that if they feel fine, they must be healthy. Unfortunately, that is not always the case. I distinctly remember patients telling me, "I haven't been to the doctor in 20 years; I have always been healthy." However, feeling well does not mean someone is free of underlying medical conditions. Cardiovascular risk factors often develop and worsen over time without causing noticeable symptoms. Without routine monitoring, patients may not realize a problem exists until it becomes an emergency. This is why establishing care with a PCP sooner rather than later is so vital. Routine appointments create opportunities to catch potential problems early. While regular healthcare cannot prevent every cardiac event or surgical intervention, it can help identify and manage the root conditions that increase cardiovascular risk.

Working in the CVICU gave me a profound perspective on cardiovascular health that I will always carry with me. I regularly cared for patients arriving directly from the operating room after major open-heart surgery, witnessing firsthand the immense, coordinated effort required to help them recover and return home to their families.

However, for people living in rural communities, managing health comes with distinct structural challenges. Access to providers, reliable transportation, financial constraints, and competing responsibilities all heavily influence a person's ability to receive care. Improving cardiovascular health therefore requires an aligned effort from both individuals and healthcare systems. For some families, seeing a specialist means taking an entire day off work, arranging childcare, and driving for several hours. When someone is already struggling financially, taking time away from work to attend an appointment may feel impossible, forcing their health onto the back burner. This reality is easily overlooked in broader discussions about preventive healthcare; it is simple to tell someone they need to see their doctor regularly, but that advice is rarely as simple to follow as it sounds.

Being from eastern Kentucky and caring for many patients from that region made these challenges deeply personal to me. Witnessing the significant barriers my community faces reinforced how critical it is to make healthcare services more accessible.

As a future nurse practitioner, I hope to translate the clinical insights I gained in the CVICU into proactive, preventive care. While I no longer live in eastern Kentucky, I aspire to one day give back to the community where I grew up. Although not every cardiovascular condition can be prevented, recognizing risk factors and receiving routine medical care can make a life-changing difference. If there is one thing I hope people take away from my experience, it is the importance of protecting their hearts before a crisis occurs. Heart health does not begin in the CVICU; it begins at home, in our communities, and in the choices we make every day.





Reclaiming Your Life:

The Power of Cardiac Rehabilitation

Imagine the unthinkable happens: you have a heart attack, and even after successful treatment, you aren't sure how to get back to your normal life. Did you know that coming into town three times a week for cardiac rehabilitation can help you regain control of your heart, body, and mind so you can return to the life you love?

Laura Hopper, MS, ACSM-CEP, CCRP
Clinical Exercise Physiologist

Thirty-four years ago, I was looking for a career where I could make a positive impact on people and their health. I started an on-call college job at a medical fitness facility, which ultimately led to a full-time position in cardiac rehabilitation (cardiac rehab). Over the course of our 12-week program, I have witnessed immense improvements in our patients' well-being, often achieving outcomes they never thought possible. The most rewarding part of my job is hearing patients say that our program gave them the strength and confidence to get back to doing what they love.

Do you know someone affected by heart disease who is ready to reclaim control over their life? Cardiac rehab is an essential program that not only helps patients get back on their feet but can truly be a life-changing experience as they recover from a major cardiac event or surgery.

What is Cardiac Rehab?

Cardiac rehab is an outpatient program that guides patients through their recovery following a cardiac event. "Outpatient" means the program takes place outside of a traditional hospital stay; patients visit a medical fitness facility on a scheduled basis. For cardiac rehab, this typically involves attending sessions three times a week for at least 12 weeks, with each session lasting an hour and a half.

Who Qualifies for Cardiac Rehab?

How do you know if someone qualifies for cardiac rehab? Eligible diagnoses include:

- Heart attack
- Coronary stent placement
- Coronary artery bypass surgery
- Heart valve repair or replacement
- Stable angina
- Heart failure
- Heart transplant

A physician can order cardiac rehab for a patient during their hospital discharge. After receiving this referral, the patient can often start the program as early as one week after leaving the hospital. However, for major surgeries, patients typically begin three to four weeks post-hospitalization, once they are officially discharged from home health care.

The Onboarding Process

Before starting a cardiac rehab program, a patient meets with their instructor to discuss their goals, establish a convenient schedule, and plan for their commute. The instructor then designs a customized care plan that serves as a roadmap to help the patient achieve their goals, reduce their cardiovascular risk factors, and build a healthier lifestyle.

What Does a Cardiac Rehab Program Look Like?

Every cardiac rehab program has two primary components: targeted exercise and patient education.

- **Targeted Exercise:** Designed to improve a patient's fitness level, structured exercise has been shown to reduce repeat cardiac events and rehospitalization, lower the risk of other illnesses like cancer, and help patients safely return to work, recreation, and daily activities.
- **Patient Education:** Focuses on reducing risk factors for heart disease through a variety of specialized classes:



  - **Healthy Nutrition:** Patients learn practical tips for label reading, mindful eating, and adopting healthier cooking habits. They can also meet one-on-one with a dietitian to discuss their individualized nutritional needs.
  - **Healthy Mindset:** These sessions are designed to help patients identify and manage everyday stress, as well as navigate the unique emotional challenges related to recovering from a heart problem.
  - **Exercise Guidelines:** Patients learn safe techniques, incorporating methods like yoga, to improve their fitness levels and prevent falls.

Research consistently shows that patients who complete cardiac rehabilitation recover significantly better than those who skip the classes.

Virtual Cardiac Rehabilitation

During the COVID-19 pandemic in 2020, cardiac rehab programs temporarily suspended in-person classes to protect vulnerable individuals and prevent viral transmission. In response, the U.S. Congress passed legislation allowing these services to transition to virtual platforms.



Under this remote care model, programs ship a comprehensive monitoring kit and a tablet directly to the patient's home. Participants receive real-time exercise guidance and education in the comfort of their own living rooms via live video sessions on the tablet. The home monitoring kits generally include educational materials alongside vital tracking equipment such as blood pressure cuffs, pulse oximeters, wearable heart rate monitors, and weight scales. During each session, a live instructor guides the patient through their exercises and teaches core lifestyle classes.

Following the pandemic, research conducted on virtual cardiac rehab participants revealed that health outcomes were fully comparable to those of traditional, in-person facility programs. This pivotal finding proved that virtual cardiac rehab is a highly effective, valuable framework for delivering remote care.

Recognizing the strength of this data, Medicare extended its coverage for virtual cardiac rehab. Recent legislation under the Consolidated Appropriations Act has extended reimbursement for home-based cardiac rehab services through December 31, 2027. The American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR)—the leading authority in the field—anticipates that Congress will eventually make this remote coverage permanent.

Bridging the Gap for Rural Communities

Expanding virtual care is also a critical tool for national public health initiatives. The Million Hearts campaign, a national initiative co-led by the Centers for Disease Control and Prevention (CDC) and the Centers for Medicare & Medicaid Services (CMS), set an ambitious goal to prevent one million acute cardiovascular events. To support this, they partnered with rehab professionals to target a 70% participation rate among eligible individuals. However, current research indicates that only about 20% of eligible Medicare patients actually enroll in a cardiac rehab program.

Virtual rehabilitation offers an ideal solution to close this gap. It provides an unprecedented opportunity for rural patients to seamlessly transition from hospital to home while participating in a structured rehab program, eliminating the barrier of traveling long distances for vital cardiac care. Ultimately, virtual platforms can extend life-saving benefits to patients nationwide, making high-quality recovery accessible to communities both large and small.



NEXT GENERATION 911

TRANSFORMING HEALTHCARE THROUGH INNOVATION AND COLLABORATION

The **Next Gen 911 Project** is a partnership between the **Texas Commission for State Emergency Communications (CSEC)** and the **Texas Tech University Health Sciences Center (TTUHSC)** in Conjunction with **EMS Providers** that serve Texans.

WE CAN BE HELPFUL TO YOU.

Next Gen 911 seeks to work with EMS Providers as a trust advisor on telemedicine and digital equipment. We are vendor agnostic, but have a breadth of understanding of the newest resources available to EMS Providers.



TTU HSC
RURAL AFFAIRS

TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER
F. Marie Hall Institute *for* Rural *and* Community Health

To request information:

ruralhealth@ttuhsc.edu

ttuhsc.edu/rural-health/

Fall 2026
Conference Calendar

2026 Annual Rural Health Association of Utah Conference
November 4-5
Dixie Convention Center
St. George, Utah

2026 34th Annual West Virginia Rural Health Conference
November 11-13
Morgantown Marriott at Waterfront Place
Morgantown, West Virginia

2026 Annual Midwest Rural Agricultural Safety & Health (MRASH) Conference
November 12-13
Hotel Millwright
Amana, Iowa

2026 Louisiana Rural Health Summit
November 12-13
Le Pavillion at Parc Lafayette
Lafayette, Louisiana

31st Annual Mississippi Rural Health Conference
November 12-13
Sheraton Hotel and Convention Center
Flowood, Mississippi

2026 Annual New England Rural Health Conference
November 17-18
Grappone Conference Center
Concord, New Hampshire

2026 Rural Prosperity: A Texas Tribune Symposium
November 18-19
Abilene Christian University
Abilene, Texas

2026 Annual Tennessee Rural Health Association Conference
November 18-20
Marriott Knoxville Downtown
Knoxville, Tennessee

2026 Annual Rural Health Voice Conference
November 18-19
Institute for Advanced Learning & Research
Danville, Virginia

28th Annual Kentucky Rural Health Assn. Conference
November 19-20
Knicely Center, Western Kentucky University
Bowling Green, Kentucky

2026 Annual Midwest Rural Agricultural Safety & Health (MRASH) Conference
November 12-13
Hotel Millwright
Amana, Iowa

Idaho RHA 2026 Annual Meeting
November 19
Riverside Hotel
Garden City, Idaho

Indiana RHA's 24th Annual Public Policy Forum
November 19
CRG Event Center
Plainfield, Indiana

2026 Minnesota Rural Health Policy Summit
November 19
Best Western Kelly Inn
St. Cloud, Minnesota

Beyond Words: Creative and Expressive Arts Interventions for Children, Adolescents, & Families
November 20
South Central Service Cooperative
Mankato, Minnesota

2026 Rural Nevada Health Summit
November 19-20
Joe Crowley Student Union
University of Nevada Reno
Reno, Nevada

5th Annual Pennsylvania Mountains Rural Health Conference
November 19
Kovalchick Convention & Athletic Complex
Indiana, Pennsylvania

2027

AHA Rural Healthcare Leadership Conference
January 31-February 3
Signia by Hilton Orlando Bonnet Creek
Orlando, Florida

2027 California Rural Health Clinic Spring Conference
February 10
Virtual Only

2027 Digital Health Summit
February 23-24
Sheraton Music City Hotel
Nashville, Tennessee

2027 RHAA Annual Summit
February 24-26
North Little Rock Event Center
Little Rock, Arkansas

2027 Iowa Rural Health Summit
February 26
College of Public Health Building
Iowa City, Iowa

The Colorado Rural Healthcare Conference
April 14-16
The Inverness Denver
Englewood, Colorado

45th Annual Protecting Our Children Conference
April 4-7
TBD
Albuquerque, New Mexico

Wisconsin Rural Partners 2027 Rural Summit
April 7-8
Wisconsin Farmers Union
Chippewa Falls, Wisconsin

Check out our list of rural health conferences, and let us know if you're hosting one so we can help spread the word.

Email us at RHQ@ttuhsc.edu.

TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER™
F. Marie Hall Institute *for*
Rural *and* Community Health

5307 West Loop 289
Lubbock, TX 79414

