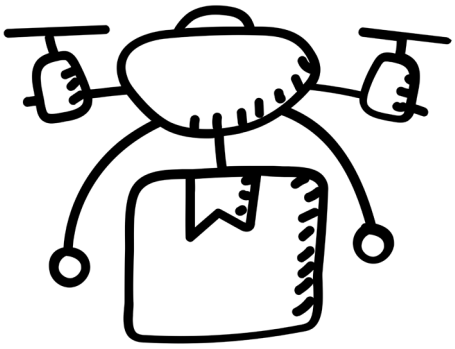
Summer 2022

RHQ

Rural Health Quarterly



Hopes for Drones Fly High to Improve Rural Healthcare Access

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Fresh Produce to Prisoners
TTUHSC Rural Residency Program
Updated Rural Reports

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

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RHQ
Rural Health Quarterly

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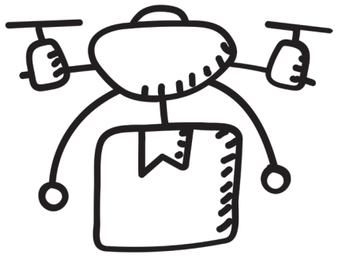

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TEXAS TECH UNIVERSITY
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TV Cabinet of Curiosity: From Helicopters on the Ranch to Drone Use in Healthcare

BILLY U. PHILIPS, JR.

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Executive Director, F. Marie Hall Institute for Rural and Community Health at the Texas Tech University Health Sciences Center

Some of you who have read previous editions of the *Rural Health Quarterly* know that I spent a good deal of my childhood on a working ranch near Blewitt, Texas, which was owned and operated by my Uncle Frank and Aunt Mattie. People like them aren't around much anymore, but there was a time when they were as commonplace as Chevrolet pickups – the 1952 models made of steel with carburetors that were relatively small compared to today's mostly plastic, technological giants. Those old models were solid and reliable, and one could count on them to work hard in all kinds of circumstances for a long time, and when they didn't, they were easy to fix.

If you are a frequent reader of the *RHQ*, then you know that I have used many stories from life on that ranch to illustrate key points in my quarterly column. Occasionally, a reader has taken me to task about the veracity of those stories. I may embellish, but the basic facts and key takeaways are true. So here goes another story to which I hope you can relate.

I was about eight or nine years old when my uncle and aunt got their first television in the main house on the ranch. I don't know why they got it since the nearest broadcast station was about 80 miles away in San Antonio. It was WOAI and my aunt loved hearing Henry Guerra, "the best newsman in Texas," as she was fond of saying. The reception was provided by a long pole outside that went far up into the air to deliver a signal to the set below. On rare occasions (something to do with the weather) we would get Channel 7 in Austin and a very interesting fellow who called himself Cactus Prior. I digress.

That TV arrived on the back of a delivery truck, which today would be called a panel van. The TV was in a box, which was wrapped in heavy moving blankets. Aunt Mattie had chosen it from a store in San Antonio, so it had come a long way on paved roads just to arrive at the gate. It had to travel almost another ten miles to the house. That road was bumpy, made of caliche, and bisected by three cattleguards—there was no way to transit except very slowly.

I remember the men who unloaded that TV and brought it into the house. It took the two delivery men and two of our ranch hands to carry it into the front room where it became the focal point of Saturday night entertainment. The cabinet was solid mahogany, more like furniture than a modern television. It had doors that were kept closed when it was turned off to conceal the picture tube and dials. It also came with a "gadget," a term coined by Uncle Frank for the device that allowed operation of the TV from across the room. It was very primitive by today's standards, but it was a symbol of what was to come later.

I didn't appreciate how farsighted my Uncle and Aunt were and how very intuitive they were about the future. A lot of people thought those of us who worked on ranches and wore Levi Strauss blue jeans, boots, and snap-button shirts were just a bunch of rubes. Nothing could be farther from the truth—the key to a successful ranch is the ability to predict, adapt, and overcome. They were tough people who knew how to innovate and often did things we might think outlandish, even by today's standards.

One such example came when Aunt Mattie learned that one could receive more TV stations if the antenna pole was higher and had a motor on the top to turn the antenna to align with the signal. For us to do that, we had to hire a company to raise the antenna up with the motor device attached. For this project, we had a helicopter fly out to hoist the pole extension up and attach and secure it so that it didn't collapse in a thunderstorm.

The day the helicopter came, we could hear it long before seeing it. Uncle Frank was outside waiting, and he heard it first. "Junior?" he said. "Do you hear that?" I didn't at first, but soon heard something drone in the distance. Soon, it came into view—a glass bubble and a steel frame that supported rotors on the top and the back. They rotated in perfect synchrony. It was an amazing sight! A man in the bubble tossed down a rope, and we attached it to a section of the pole. In just minutes the section was lifted to a man in a crane bucket who attached the sections and began running wires to secure it.

I watched Uncle Frank intently observing this operation. He was mesmerized by what was happening. Long wires ran down the pole to the ground and into the house. Aunt Mattie watched too, and the installers on the ground connected everything to a new box that was operated by yet another controller, a.k.a. "Gadget 2".

Once it all appeared to work, the picture was amazingly clear and we got stations from San Antonio, Austin, and even San Angelo. Once in a while, when the weather was just right, we even got the signal from Dallas (WFAA). Again, I digress.

We stood there and watched the workers depart and the men in the helicopter fly back toward San Antonio. Uncle Frank turned to me and, as if bewildered, made a prediction that seemed just too extreme to be believed. "Junior, one day before you die, 'that thing,'" he said, pointing at the disappearing machine, "will be shrunk and somebody with a 'gadget' will control it." He went on whimsically and said, "I just hope they can get that drone out of it."

Little did we imagine in that moment that, indeed, the prophecy would come true and the flying device would be controlled from far distances and used in ways that neither of us in that moment could have imagined—including recreational use in 2015. Uncle Frank would be glad to know, unlike that day, the modern era knows them to be all but silent. ●

For more information about Drone Technology and its uses see TTUHSC's latest partnership with 2THEDGE and LifeGift to create the Matador UAS Consortium, which will use drone technology to innovate healthcare services in West Texas and the South Plains Region: https://dailydose.ttuhsc.edu/2022/april/drone-technologies-improving-rural-health-care.aspx

RURAL REPORTS

RURAL HEALTH REPORTING

FROM ACROSS THE NATION

AND AROUND THE WORLD

What's news in your neck of the woods? Let us know!

Email: Email your rural health news to RHQ at **RHQ@ttuhsc.edu**

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ALABAMA //

Whitfield Regional Hospital in Demopolis has reopened its maternity ward. The ward, shut down in 2014 due to financial issues, was the last L&D unit in a five county area. Now under new management with the University of Alabama Birmingham, deliveries will be covered by Alabama Medicaid funds.

al.com | 04.10.22

ARIZONA //

In Arizona, the Navajo Nation and other local tribes have successfully vaccinated the rural population in the state, with one county boasting a 146% vaccination rate.

Through mobile health units and ad campaigns, tribal vaccine drives were wildly successful.

apnews.com | 05.07.22

ARKANSAS //

In Arkansas, researchers from the University of Arkansas for Medical Sciences and other agencies have published a study showing the state's minority populations had a higher COVID-19 infection rate than their white counterparts. From August to December of 2020, exposures to COVID in the state were up at 7.4%.

guardonline.com | 06.06.22

CALIFORNIA //

Across California, school districts did not reinstate mask mandates as the school year wound down. As outbreaks ticked back up, many districts, including rural, ignored or did not enforce the state's mask mandate for schools, in the hope that the school year would end before having to reinstate.

usnews.com | 05.25.22

COLORADO //

At North Colorado Medical Center in Greeley, a new telehealth pilot is connecting rural doctors to OB/GYN hospitalists, to access better care for their expecting patients.

As maternity deserts continue to pop up in rural areas, the new pilot program aims to have a specialist connect remotely and provide care and consultations for rural pregnant women.

The program is currently used by Greeley and Sterling Regional MedCenter, both owned by Banner Health.

kunc.org | 04.22.22

CONNECTICUT //

Rural patients in the state are growing concerned as hospital mergers and growth in the state slowly cut them off from local services. Yale New Haven and Hartford HealthCare own more than half of the 27 hospitals-the remaining six are independent.

wshu.org | 05.09.22

GEORGIA //

In Georgia, hotspots for four types of cancers have popped up in rural parts of the state.

According to research from the Georgia Cancer Center, death rates from breast, prostate, colorectal, and lung cancer were found to be higher in the eastern Piedmont to the southern Coastal Plain regions, all rural areas.

jagwire.augusta.edu | 04.11.22

HAWAII //

4,000 patients in Hawaii are dependent on dialysis services, a rate of growth that has far surpassed other states.

Many patients are forced to travel late at night to gain access to limited dialysis chairs. More dialysis centers are needed, with three companies in the state already looking to expand by adding more centers on Oahu, Kauai, and Maui.

civilbeat.org | 05.25.22

IDAHO //

Family Residency Medicine of Idaho is launching a new pediatric residency program in 2023, which will add to the number practicing in the state. Idaho is ranked 50th for the number of pediatricians per population.

ktvb.com | 04.20.22

ILLINOIS //

At Blessing Health System in Quincy, a new kind of home-based care is being tested. The Rural Home Hospital program covers Illinois, Missouri, and Iowa, and will deliver hospital services to rural patients.

Patients in their homes will be set up with equipment to monitor vitals and conduct telehealth visits. The program allows continued care and frees up beds in smaller facilities.

dailyyonder.com | 04.26.22

CANADA

Staffing shortages in Northern Ontario have caused all five cities in the province to participate in the Rural and Northern Immigration Pilot, a program designed to bring immigrants who are healthcare professionals to smaller communities. To keep them, facilities must train newcomers in community needs and professional development.

theconversation.com | 05.11.22

EGYPT

Egypt hosted the first Africa Health ExCon this June, a conference where stakeholders across Africa met to learn about healthcare innovations from around the world.
More than 20,000 participants from 55 countries attended the conference, with Merck, a leading tech company, announcing a continued commitment to Africa by expanding their health systems to reach low- and middle-income patients in poorer countries and starting the Africa Cancer Care program.

african.business.com | 06.06.22

SWEDEN

The Swedish eHealth Agency is looking towards 2025 as a goalpost for a brighter future, as information technology leads the way for better health outcomes.

The country's digital health helped it weather the COVID-19 pandemic. Now, it will help further healthcare access by expanding telemedicine outside facilities. Vision for eHealth 2025 is the goal for the country, to be the best in the world at IT solutions for healthcare.

mobilehealthnews.com | 06.09.22

NEW ZEALAND

The Southern District Health Board has launched a new web portal, Tō Tātou Pūkete, a database of public health information on the southern communities of the country's South Island.

Developed to provide the public and healthcare professional with demographic information on the South Island without having to formally publish it, Tō Tātou Pūkete can be used by communities to better see what people need from their local healthcare facilities.

healthcareitnews.com | 06.09.22

THE PHILIPPINES

Incoming President-elect Ferdinand Marcos, Jr. faces a few health challenges as he takes over the administration.
With the country still struggling to vaccinate and boost, there is also a need to expand primary care services and appoint a new Dept. of Health secretary.

newsinfo.inquirer.net | 06.08.22

NORTHERN IRELAND

Nurses across the country have demanded that the government end the political stalemate and form a functioning government, as failure will further harm patients. The demand is from the Royal College of Nursing Congress 2022.

nursingtimes.net | 06.09.22

INDIANA //

Local governments across the state have agreed to drop lawsuits and combine their claims into one statewide settlement, in order to receive reimbursement related to the opioid abuse crisis. The state settlement is $507 million in total.

kpcnews.com | 06.08.22

KANSAS //

In rural Kansas, foster parents and homes are struggling with the amount of foster children needing care. As one-tenth of the counties in Kansas rely on one foster home per county, many rural families have a much harder time getting to doctor's appointments and court check-ins.

kcur.org | 05.31.22

LOUISIANA //

The state of Louisiana is one of the first to receive funds under the American Rescue Plan's Coronavirus Capital Projects Fund. Totaling $176.7 million, the funds will be used to provide affordable broadband internet infrastructure.

katc.com | 06.07.22

MICHIGAN //

Akron, Michigan is one of many rural towns in the state that has a crumbling drinking water system.

Small towns and cities across Michigan have issues with lack of funds and staff to keep up their systems, relying on equipment that hasn't been serviced in decades.

michiganradio.org | 05.03.22

MINNESOTA //

The University of Minnesota School of Dentistry has been working on an interdisciplinary teledentistry simulation training program for students, to expand partnerships with community health centers and deliver oral health care to rural areas.

The program will allow students to examine patients remotely and diagnose through teledentistry technology. The program will launch Summer and Fall semesters of 2022.

insightintodiversity.com | 04.18.22

MISSOURI //

Ray County, Missouri is the latest rural county in the state to lose lives to fentanyl overdoses, with four people lost.

The fentanyl crisis in Missouri is growing, with 275 people in rural counties alone dying from synthetic opioid overdoses in 2021.

kshb.com | 05.12.22

MONTANA //

The University of Montana and Montana State University have started up a new rural health program to bring healthcare access to rural parts of the state. Student mental health providers are sent out to serve rural areas, and are offered post-grad stipends if they stay in the community.

nbcmontana.com | 05.21.22

NEW MEXICO //

President Biden has signed an extension of the Radiation Exposure Compensation Act, giving uranium miners and locals living around Alamogordo the chance to receive reparations. Cash payments up to $100,000 for miners and $50,000 for locals are on the table.

currentargus.com | 06.09.22

NEW YORK //

Health Workforce NY has produced a podcast series covering the life of Dr. L. Thomas Wolff, a physician who practices in rural New York.

His ongoing efforts to build a rural health workforce in the state is highlighted along with his personal work at the local level.

hwny.org | 05.10.22

NORTH CAROLINA //

Benevolence Farm, located in Alammance County, has helped formerly incarcerated women build new lives and careers by offering safe housing, jobs, and access to healthcare.
The program is funded through donations, and has helped 32 residents as of this year. The Rural Justice Collaborative has recognized the farm as an innovation site.

southerlymag.org | 05.16.22

NORTH DAKOTA //

Sanford Health and the City of Williston held a groundbreaking for a new multispecialty clinic this May, a big step in Sanford's pledge to serve the city and the rural areas around it for the next 100 years.

The clinic will have imaging equipment, a lab, and an infusion center. Sanford will also partner with Williston State College to provide educational opportunities.

sanfordhealth.org | 05.12.22

OHIO //

Pharmacy deserts in Ohio are growing, as the state's Medicaid contract dispute threatens to decrease access to drugs in rural/underserved communities. In many rural areas the pharmacist is the only professional available, and if they go, so too does the area's healthcare access.

dispatch.com | 06.01.22

OKLAHOMA //

Southwest Farm Press wrote a profile on Dr. Brenda Stutzman, a family physician in rural Hydro who has been there for over 25 years.
Her desire to return to Hydro after medical school has grown into her own practice, where healthcare is a way of life and not just a business.

farmprogress.com | 06.07.22

OREGON //

The Governor of Oregon declared May 16 to be "rural Senior Day" in the state, honoring older adults who live in rural parts of Oregon and acknowledges their right to access healthcare and social connections.
Rural Senior Day also marked the first day of the 6th Annual Forum on Aging in Rural Oregon.

cannonbeachgazette.com | 05.13.22

TENNESSEE //

Ballad Health and East Tennessee State University have created the Appalachian Highlands Rural Innovation and Entrepreneurship Alliance.
The Alliance is set to do research in rural areas to boost development and healthcare access in Northeast Tennessee and Southwest Virginia.

balladhealth.org | 04.14.22

TEXAS //

In Mineral Wells, a hospital admin is recruiting doctors to his rural facility by offering less commute time and providing services tailored to the community.

Palo Pinto General Hospital is experiencing a rebirth through move-ins from DFW and educational opportunities, adding health clinics and physician trainings to the roster.

weatherforddemocrat.com | 06.06.22

UTAH //

In Utah, mobile response services via telehealth are now available for children in the western part of the state. The Intermountain Healthcare Telehealth Program is designed to help a child during a mental health challenge and keep them in their homes as much as possible. The program is now in 15 of Utah's 29 counties.

abc4.com | 05.24.22

WEST VIRGINIA //

Michael Yost, a recent graduate of West Virginia School of Osteopathic Medicine, has been chosen as Highmark BCBS WV's eighth Farson-Smith-Earley Award winner. Yost will receive an honorary plaque and a $3,000 stipend as he serves his residency at Greenbrier Valley Medical Center to become a rural care provider.

newsandsentinel.com | 06.04.22

WISCONSIN //

Dr. Dennis Hartung received the 2021 Rural Health Ambassador Award from the Rural Wisconsin Health Coop, for making significant contributions to rural health. Dr. Hartung was awarded due to his track record of building community trust and advocating for women's health.

baldwin-bulletin.com | 05.27.22

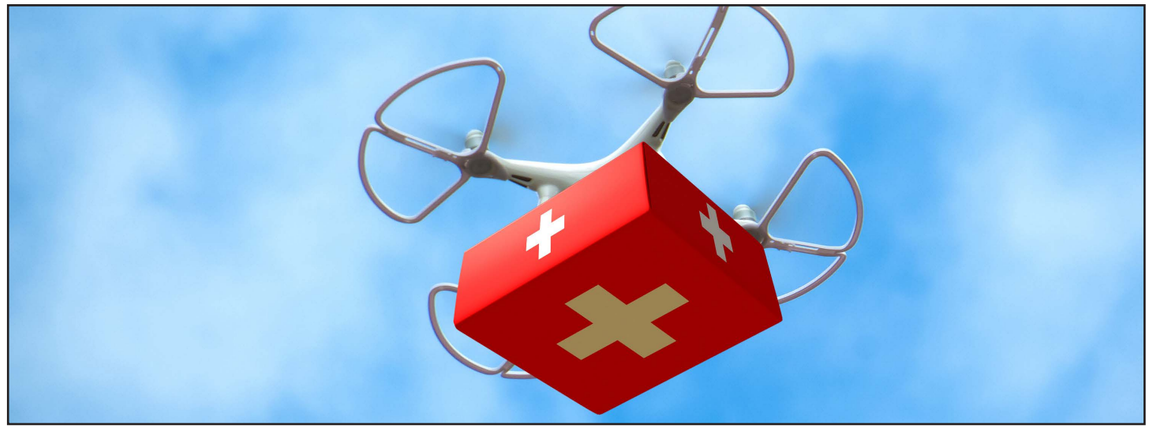
WYOMING //

Jacob Warren, director of the Center of Rural Health and Health Disparities in Georgia, has been named Dean of the College of Health Sciences at the University of Wyoming.
A professor and epidemiologist, Dr. Warren has published numerous books on rural health. He will officially head the college July 1.

uwyo.edu | 05.13.22

COVER

STORY



Hopes for Drones Fly High to Improve Rural Healthcare Access

STEPHANIE STEPHENS

WRITER

Stephanie Stephens is an experienced journalist, producer, voice over talent, and animal advocate in Orange County, CA.
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Our fascination with drones shows no signs of abating, as Americans imagine walking out the door "someday" and sending their own drone merrily on its way to deliver "something." Drones are no longer science fiction, as they continue to intrigue consumers with their versatility—plus, they're just plain "fun" for avid drone aficionados. However, for those intently engaged in determining drones' ultimate usefulness, the potential for doing good with this technology remains priority one.

The concept of healthcare applications for drones is "not just growing legs, but rotors," said Phil Sizer, Ph.D. PT, associate vice president of Research and Innovation at Texas Tech University Health Sciences Center (TTUHSC). The use of drones in healthcare isn't a ubiquitous occurrence—yet—even as proponents share enthusiasm about the future and drones' ability to support more improved outcomes.

At academic institutions and forward-thinking start-ups, innovators are getting ready for drones' omnipresence and potential by partnering up and doing their own research studies.

As to the timeline of "When?" it's not an easy or clear answer, said Casey Calamaio, research engineer at the Unmanned Aircraft Systems (UAS) Research Programs Rotorcraft Systems Engineering and Simulation Center at the University of Alabama in Huntsville (UAH).

"There is no one-size-fits-all solution or use case," he said. "Developers are thinking about and working on how to make using UAS as easy as possible—to successfully integrate drones into different environments and applications with minimal technical barriers."

Drones Help Protect Donor Organs

Sizer is part of the Matador UAS Consortium, which includes experts from TTUHSC, Texas Tech University, technology and investing firm 2THEDGE, South Plains College, and Texas organ and tissue procurement organization, LifeGift.

"It's a collaboration between the university and industry," Sizer said. "Our mission is to leverage commercial drones to transport critical cargo within a drone corridor network, and to build a national network of drone corridors that are out of line of sight."

"Out of line of sight" means that the drone will fly in a space that is not easily accessed by the public. Here, the pilot will fly the drone at 500- to 7,000-feet elevation, navigated from a distance, from their home base.

"These drones are not what you buy at a BestBuy, but can have a wingspan of 20 feet and carry up to 200 pounds in payload," Sizer said. "We see the commercializable opportunities to move medications, lab samples, and different supplies needed for healthcare, so patients don't have to travel to get them, and personnel will not be required to drive those items to or from TTUHSC."

Creating a sustainable model for transporting donated organs to recipients remains a top priority, he said, "to do it more efficiently, most cost-effectively, and more predictably because if an organ doesn't get delivered in time, it can be unusable."

Sizer's team understands the pressing need since TTUHSC serves 108 Texas counties, 58 of which are medically underserved, and it serves border counties in New Mexico, southeastern Colorado, and western Oklahoma. Residents may drive to the hospital an average distance of 103 miles one-way.

"We also graduate more healthcare providers than any other health science center in the state," he said of TTUHSC. "When they go out to these rural locations, the UAS model really could help support them and their patients."

Drones' Commercial Applications Abound

The global industry has certainly taken notice. Drone delivery has become a priority initiative in countries including China, Japan, Australia, France, Germany, Russia, South Korea, and the United Kingdom.

Technological research and consulting firm Gartner predicts exponential growth and said that in 2026, more than one million drones will be carrying out retail deliveries, up from 20,000 today.

UPS, FedEx, Domino's, and Walmart are just a few companies set on incorporating drones into their regular retail delivery protocols. Drone designer and manufacturer Zipline has joined Walmart in that endeavor, which promises to also deliver drugs as Zipline has already done in Rwanda and Ghana.

Earlier this year, according to the *Associated Press*, Zipline announced it was delivering medical supplies in the Goto Islands of Japan, destined for local hospitals and pharmacies. Zipline Chief Executive Keller Rinaudo said drones have already transported blood supplies, insulin, and cancer treatment.

For emergency physician and drone expert Jeremy Tucker, DO, of Kailua Kona, Hawaii, a main focus is "the compelling nature of helping humanity with healthcare."

"Remote populations can realize significant advantages to healthcare delivery with drone use," he said. "There will be much more package volume that is non-healthcare, i.e., retail, but the per-package delivery fees should be similar or even a slight premium for healthcare versus non-healthcare."

The Centers for Disease Control and Prevention says almost nine out of ten Americans live within five miles of a community pharmacy, but for those who don't, drones can sure help.

Higher, Longer, Further

A person who needs to drive a long distance to pick up a prescription must factor in time and the cost of gas, said Tucker. "Drones not only fill the bill, but can help people who may not drive, such as the elderly—an important case use for rural healthcare."

A rural hospital might not have enough blood when a patient presents with a massive gastrointestinal bleed, for example, or a patient is a difficult crossmatch. "We don't want to wait a day or so, and the

use of a UAV may not require transferring that patient," he said.

Tucker co-founded Airbox Technologies, and its "world's first smart drone delivery-capable mailbox that's temperature controlled."

"Drones might drop packages that are susceptible to weather, dogs, children, and theft," he said, "and this provides drone delivery with a secure endpoint."

Tucker is also chief medical officer for New Frontier Aerospace, with sights set on high-speed, rocket-powered automated delivery of healthcare, cargo, and people.

"We envision delivering critical first aid supplies, flying quickly from Florida to Haiti, with thousands of pounds, for disaster victims in remote areas."

Drones in rural healthcare mean "higher, longer, further," said Tucker. "Companies will continue to push the envelope, with power sources including bigger batteries, that are also more efficient, such as hydrogen powered. There are also hybrid solutions."

In the fall of 2020, Volansi, a Silicon Valley drone delivery innovator, launched a commercial drone delivery program to deliver cold chain medicines in rural North Carolina in a custom cargo box.

The drone connected pharmaceutical giant Merck's manufacturing site in Wilson, North Carolina with Vidant Healthplex-Wilson, a Vidant Health clinic.

Then, in the spring of 2021, it completed two successful flights between Hatteras and Ocracoke Island in the state's Outer Banks, proof that substantial time could be saved in the air versus trying to drive emergency supplies in hazardous road conditions, such as when roads are washed out.

"Merck was interested in exploring innovative technologies to expand their delivery options to better serve the healthcare community," said Amanda Krantz, Volansi's head of business development and partnerships, who oversees the Merck program.

Charting a Clear Path

"When delivering to a rural area, with medical supplies, medicine, or defibrillator machines, we have to consider how we send those directly to a person," said Jerry Hendrix, director of UAS Research Programs at UAH, and a team member with Calamaio.

"Maybe a neighborhood has a kiosk, for example," he said. "We see a lot of research in that area and initially it's going to happen on a case-by-case basis, with FAA approval based on safety."

"In the next five to ten years, I think the opportunity is to focus on where drones can serve critical needs as well as how to incorporate them into existing courier or logistics systems so both the technology and business models are ready when the air space opens up," said Krantz.

Identifying how unmanned aircraft can solve medical supply chain gaps remains a priority, said Calamaio.

"We must first identify barriers and areas of congestion, then we can see how drones may help to alleviate those problems—they don't have to follow roadways, which can be restrictive or time consuming to travel. We must also address operational safety and regulatory compliance."

His team focuses on how the FAA will define regulatory pathways and identify technologies to usher in safe and more complex types of operations, "likely reliant on the kinds of UAS traffic management (UTM) solutions."

With no turnkey UTM solution now, they experiment with low-altitude UAS deliveries with a scalable obstacle avoidance system on campus, Calamaio said.

"UAS can be preprogrammed and automated for autonomous take-off and landing, but can't yet fly fully autonomously to their destination," Hendrix said.

The Future of 'Tech-Enabled' Nurses

UAH's UAS team also supports initiatives around "tech-enabled nurses," and collaborates with the university's College of Nursing, Calamaio said.

They completed a series of simulations which included a pregnant mother at a rural facility, at risk for preterm labor, where a drone delivered needed medication, and are doing another that involves an overdose scenario and a drone delivering naloxone in a rural location.

'Tech-enabled' means not only engaging with telehealth services, such as wireless networks to monitor vital signs, radios and other communications devices, but also "knowing how to conduct oneself around a drone delivery system, to load and unload payloads, test kits and other medical supplies," he said.

"Nurses and medical professionals are busy enough, skilled, and don't necessarily need to become drone pilots to feel comfortable around this emerging technology."

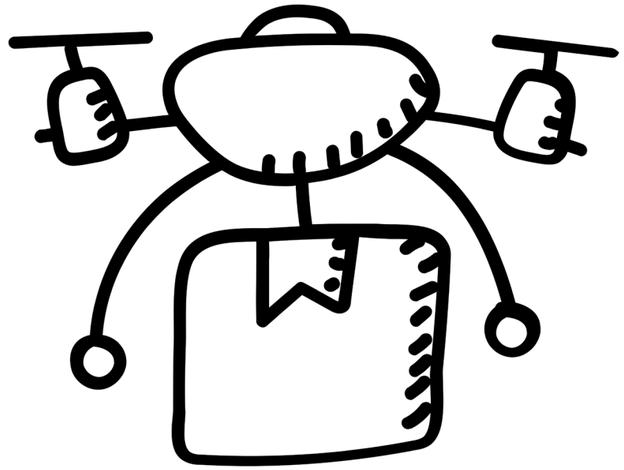
As drone advocates wish things would "speed up," Krantz said working within the confines of regulations to keep everyone safe is critical.

"The FAA has established several programs and governing bodies to research, address, and maintain safe regulations for drones and drone operators," Krantz said.

These include organizations like the former Drone Advisory Committee, now the Advanced Aviation Advisory Committee, and the BEYOND program.

"While we and others in our industry would love to see regulations move more quickly in favor of the drone industry, I believe the regulations will continue to open up as the technology advances to make it safe to fly over people," she said.

"In the meantime, we can continue to make progress towards actually running a business by finding and piloting concepts where real value is delivered rather than receiving your hamburger by drone in your backyard." ●



EDUCATION

A Look Inside the Rural Residency Program at Texas Tech University Health Sciences Center

CANDICE CLARK

EDITOR

Candice Clark is the Editor-in-Chief of the *Rural Health Quarterly* for the F. Marie Hall Institute for Rural and Community Health at Texas Tech University Health Sciences Center.

In a special feature for *Rural Health Quarterly*, we will be taking readers on a tour of the Family Medicine Rural Residency Track at Texas Tech University Health Sciences Center Permian Basin.

Like many similar programs across the country, the Rural Residency program trains medical students interested in rural practice by sending them to work in rural and underserved communities in West Texas. - The residency program consists of three years. During the first year, the residents are placed in a clinical setting in Midland/Odessa. The second and third years are completed at our rural clinical sites.

"Our students seek out the program specifically," said Dr. Timothy Benton, M.D., regional dean and professor in the Department of Family & Community Medicine at Texas Tech University Health Sciences Center Permian Basin (TTUHSC-PB). "Our Family Medicine Rural Residency Track provides selected residents a unique opportunity to practice full-spectrum care. Our rural track recognizes the primacy of the continuity principle in family medicine and reinforces this through longitudinal experiences of one-on-one with family doctors who provide continual spectrum of healthcare."

The Rural Residency program is housed at the TTUHSC-PB campus, which serves the Odessa/Midland area and six surrounding rural counties. "40 percent of doctors stay within a close radius of their medical school," Benton said. "If we train them here, they'll stay here."

According to Dr. Benton, the Rural Residency program consists of three years of study, with the First-Year students learning the basics on the TTUHSC-PB campus. Second- and Third-Year students complete their clinical rotations in rural areas, working in hospitals and clinics in towns like Alpine, Sweetwater, and Carlsbad, NM.

"You have to really learn how to be a doctor out there," Dr. Benton added. "You get more exposure, you are not a fly on the wall, the students get more in-depth, rural training."

Dr. Timothy Benton, M.D., regional dean of TTUHSC-PB (Photo/TTUHSC-PB)

According to the Rural Residency Track Curriculum webpage, students will spend their second and third years undergoing rotations in areas such as Emergency Medicine, Gynecology, Orthopedics/Sports Medicine, and Behavioral Medicine.

"The design of our rural track recognizes the primacy of the continuity principle in Family Medicine and reinforces this through longitudinal experiences one-on-one with family doctors who daily provide the continual spectrum of prenatal through postpartum, newborn through adolescent, adult through geriatric, and pre-operative through post-operative care for their panel of patients in various settings," reads the main webpage for the program.

"This track provides equal curricular experiences for all residents by completing the same rotations, acquiring the majority of inpatient experiences at the core program site and attending common activities."

Dr. Benton also said the program comes at no cost to the rural hospitals and clinics where residents complete their rotations. The revenue generated stays with the hospital, creating a "win-win" relationship between the rural medical facilities and TTUHSC.

Stephanie Rodriguez, a Rural Residency program year one (PGY1) student from Roma, said her experiences in rural medicine have helped her become a better physician through time spent shadowing a female doctor back home and in the program in Odessa."I think the skills that you learn in the rural health track are very different compared to the core program and that's one of the reasons I chose to go into it as well," she said. "Learning those skills will help me in the future."

Cristian Medina, a Rural Residency program year two (PGY2) student from Laredo, said his family members who were physicians shaped his outlook on starting a career in rural medicine.

"There's a lot of rural communities out in Texas, a lot of individuals that are underserved, a lot of people that can't get the care that one can get in the more privileged areas," he said. "I felt that, in order to really be a provider that can serve these communities, you really have to be and have that desire to learn different types of procedures to help people in these communities."

Rodriguez added she knew she was headed to the Rural Residency program at TTUHSC based on the "match system", the algorithm used to match medical students that have completed medical school to their residency programs. But she wasn't aware of the Rural Residency Track. Rodriguez had already completed the

Stephanie Rodriguez, a PGY1 resident from Roma (Photo/TTUHSC-PB)

accelerated Family Medicine track in three years instead of the usual four years.

"I knew I was either going to go to Amarillo, Lubbock, or Permian Basin campus," she said. "Originally, I was supposed to go to Amarillo, but after talking about the Rural Track and everything that they had to offer in the Permian Basin I actually switched around and came over here instead. First, I was just interested in the Rural Track, and then they told me about all the different Rural Tracks that they have in New Mexico, all the ones here in Texas and I kind of just picked the one that fit…the things I wanted to learn the most or get the skills out of, so I went with the Fort Stockton track."

Texas Tech University Health Sciences Center is one of the few schools in the country that houses a School of Medicine, a School of Health Professions, and a School of Nursing. Students are encouraged to pursue interdisciplinary studies, and TTUHSC's regional campuses provide a multitude of opportunities. Both

Rodriguez and Medina are completing their residencies at Pecos County Memorial Hospital in Fort Stockton, one of the locations available to students in the Rural Residency Track.
While completing their rotations, residents are taught Quality and Safety practices on a day-to-day basis, reinforcing everything they have learned on campus.

“I’ve had a lot of experience, I’m in this hospital, where they try to instill a lot of evidence-based guidelines. So, even though I’m going to be going to Fort Stockton, everything, or most of what I’ve learned, has been evidence-based,” Rodriguez said. “There’s either some article, some new research, something that supports our care for the patient. That is where the patient safety comes into play.”

Students who are sent out to rural/underserved areas of West Texas are expected to live and work in those same communities. Medical professionals already in the area step up to train residents who will, in turn, help them bring better quality healthcare to their hospitals and clinics. The staff at TTUHSC-PB also take care of the residents, no matter where they are.

“There’s not a lot…in regards to housing and resources, and the attendings themselves care deeply enough to actually reach out to you,” Medina said. “The hospital even houses you here [in Fort Stockton] while you’re still looking for places to live. When I was out in Odessa, one of the things I found interesting is that you’re never really left alone."

“The program does a very good job of making sure to address residency safety and that each and every one of us is doing well,” he added. “One of the things that we do here, what’s actually unique to Family Medicine-Rural Health, is that we have the opportunity to pick our cases.

"We typically try to gauge and pick candidates that we think we can actually help. We know the medicine, and for some reason we feel that a particular case would be better suited by a more specialized provider...we still have the opportunity to talk to some of these providers that we have grown close to and seek their advice in regards to ‘what do you think about this particular case?’

"It’s not the fact that you don’t feel confident doing something," Medina said. "It is being able to make sure that you live by that standard of care.”

Cristian Medina, a PGY2 resident from Laredo (Photo/TTUHSC-PB)

“It’s a really great relationship,” said Cynthia Mehlhoff, who manages the Rural Residency Track program from the TTUHSC-PB campus. “Dr. Medina’s current attending was my first rural resident eight years ago so we have a longevity at Fort Stockton. It’s a circle of life for sure. We want them to feel involved here, to grow your families here.”
The programs at TTUHSC have drawn more than medical students to the Permian Basin. In April of this year, TTUHSC and the Permian Strategic Partnership (PSP) announced a $12.8 million gift and partnership that will fund a surgical and sub-specialty training program for residents. With this new fund, hospitals in the Permian Basin will be able to offer cardiology and gastroenterology surgery as well as more general surgery.

TTUHSC will work with area hospitals to add 15 surgery residents by 2025. Four cardiologist fellows and four gastroenterology fellows will be added by 2023.

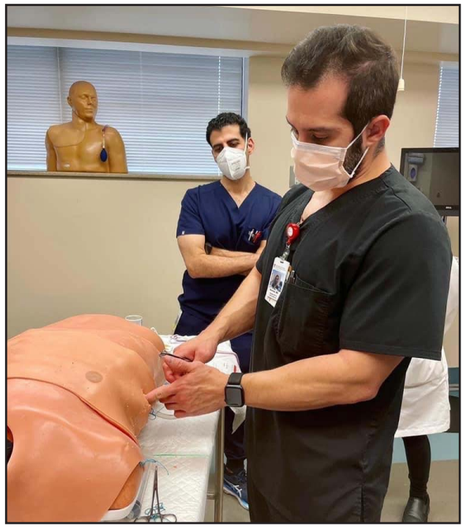
"This exciting announcement of surgery and sub-specialty residency programs is the beginning of providing critical, much needed healthcare in the Permian Basin," said Jessica Zuniga, assistant vice president of External Relations for TTUHSC-PB.

With new partnerships and a new class of medical students heading out to rural Texas, the Rural Residency Track program at TTUHSC is set to bring healthcare to places where it’s needed now.

“We are transforming healthcare out here,” said Dr. Benton. “We learn our people, we transform healthcare delivery, and we have an impact on population health.

"Our model is that we are a potential center of excellence for the state, and we are doing something unique.”

Rural resident Ali Nazerali performing a procedure with his attending James Tarin, M.D., at Reeves County Hospital in Pecos (Photo/TTUHSC-PB)



Jose Bermea, M.D. and PGY2 Chief Resident, demonstrates during an ER Skills workshop with Omeed Paknejad, PGY1 resident (Photo/TTUHSC-PB)

Dr. Benton, Dr. Lori Rice-Spearman, and others at announcement of Permian Strategic Partnership gift (Photo/TTUHSC-PB)

Food in Rural Prison: Organizations Work to Get Fresh Produce to Prisoners

A. GASCON

WRITER
A. Gascon is a freelance writer/editor who works in health content.

Rural prisons are surrounded by farmland, yet few serve fresh produce to their incarcerated population. Why is it happening and what are organizations doing about it?

My son was incarcerated in 2021. He began serving his sentence in a rural Georgia prison. My drive to visit him every other Saturday takes a little over two hours, a trek that takes me from a medium-sized city through hundreds of acres of farmland. Wild strawberries, corn stalks, and tomato plants dot the landscape, a contrast to his typical meal tray covered in brown and beige carbs.

I ask my son regularly if he gets fresh produce on his tray. He says rarely. He recalls a slice of watermelon on the Fourth of July. He remembers pear slices during one recent meal and pineapple chunks during another. He thinks back to peaches over a two-week period last summer, but they were swimming in syrup. They were canned. He sometimes gets small servings of peas, corn, or carrots. They're also canned.

As a health and medical writer, I read nutrition research regularly. A lack of fresh fruit and vegetables impacts the brain and body by increasing the risk of heart disease, obesity, digestive issues, cancer, diabetes, depression, and eye disease.

I couldn't understand why a facility surrounded by farmland wasn't serving fresh produce daily and promoting a healthy diet. Moreso, I wondered what was going on across the country.

To get answers, I tried contacting several state departments of corrections. Most of my emails and phone calls went unanswered.

As I continued to dig, I came across a study on prison food. Leslie Soble, the study's lead researcher, spoke with me and connected me with other prison food advocates. Here's what I discovered.

Food in Prison Report

In 2020, Impact Justice published a study titled Eating Behind Bars: Ending the Hidden Punishment of Food in Prison. Impact Justice is a nonprofit innovation and research center that explores new solutions to systemic injustice in the United States.

One of Impact Justice's initiatives, the Food in Prison Project, collects research, data, and testimonies from incarcerated individuals and their loved ones. They use the information as a springboard for discussions to promote change.

Surveys from formerly incarcerated individuals from 41 states revealed the following:

•89% said they sometimes, rarely, or never had access to fresh vegetables
•78% said they sometimes, rarely, or never had access to fresh fruit
•89% said meals didn't taste good
•91% said meals looked unappetizing
•94% said they constantly felt hungry

"The experience of eating while incarcerated is extremely harmful to physical and mental health," said Soble, Food in Prison's senior program associate. "Those harmful impacts ripple out beyond those incarcerated individuals to families and communities and our society as a whole. And it doesn't have to be that way. There's a lot that could be done to change it."

Typically, correctional facilities serve highly processed, refined carbohydrates that are high in sodium and added sugars. They also serve low-quality protein and foods that are high in saturated fats, low in fiber, and deficient in essential micronutrients. Prison trays are overloaded with breads, biscuits, rice, pasta, cake, and cookies.

Incarcerated individuals who can afford to buy food from the commissary have few nutritional options. Popular commissary items include chips, cookies, ramen noodles, and peanuts. No fruit, no vegetables, and very little fiber or good quality protein.

The substandard diet has led to a wide range of chronic health conditions:

•**Overweight and obesity.** Up to 75% of incarcerated individuals are either overweight or obese.

•**High blood pressure.** About 30% of incarcerated people have high blood pressure.

•**Heart disease.** Heart disease is a leading cause of death among incarcerated individuals.

What drives the lack of healthy food in prison?

To understand why the carceral system serves substandard food to incarcerated people, we must look at two pervasive issues: money and bias.

Most correctional facilities budget less than $3 a day for three meals per incarcerated individual. One state spends as little as $1.02 a day.

Many prisons contract with food service companies to provide low-cost solutions. These companies load trays with cheap carbs, and not much else. Many of these contractors limit facilities from serving other foods. For example, a contract may forbid a facility from sourcing local produce, dairy, or eggs.

The Food in Prison report describes the prison food experience as "damaging and degrading". They blame it on a larger issue — a dehumanizing criminal justice system. "Like every other aspect of mass incarceration, this is an issue of racial and economic injustice."

The report goes on to say: "Lower-income communities of color, where affordable healthy food is scarce, disproportionately lose members to prison and then struggle to support them when they return home in worse health. In this way, prisons function as out-of-sight food deserts, perpetuating patterns of poor health in communities that already experience profound inequities".

From food deserts to fruitful endeavors

Change is happening on a small but successful scale. There are champions within correctional facilities who are working hard to promote wholesome, healthy meals and new attitudes. There are outside organizations partnering with prisons that are passionate about dignified treatment, starting with food.

Here are examples of institutions that are redefining the prison food experience:

Maine State Prison (MSP), a maximum-security prison in the small town of Warren, Maine, harvested over 27,000 pounds of crops from their 1.5-acre garden in 2021. They donated 20 percent of their harvest to

local food insecurity centers and the rest was used for meals at the facility. They also collected over 100 pounds of honey from their eight bee hives.

Mountain View Correctional Facility in Charleston, Maine boasts a 7 ½-acre vegetable garden. The garden allows residents to have salads twice a day, and enjoy different greens, turnips, radishes, peppers, leeks, kale, swiss chard, and rainbow chard in season. They also source their eggs, potatoes, and most of their cheeses from Maine farmers. Plus, they bake their own bread items, such as bagels and English muffins.

Insight Garden Program (IGP) works inside 10 California prisons, growing produce, medicinal herbs, and flowers. IGP's program also includes classes on ecology, landscape design, permaculture gardening, meditation, and inner healing.

Planting Justice partners with IGP to bring gardening programs and education to correctional facilities in California. They've hired over 45 formerly incarcerated individuals. Planting Justice boasts a three percent to 10 percent rate of recidivism. The recidivism rate for the state of California is 60 percent.

Lettuce Grow and Growing Gardens brings programs to 16 adult and juvenile correctional facilities in Oregon. They offer an array of classes including basic vegetable gardening, sustainable gardening, greenhouse management, and culinary arts.

Salvation Farms brokers deals between Vermont farmers and correctional facilities around the state. They take surplus crops and sell them to prisons at a reduced cost. They also arrange pickup and transportation from farms to facilities.

Prison gardens reap healthy rewards

My son is currently in a horticulture class at his facility. He's growing peppers, onions, tomatoes, and garlic. Later this summer he'll harvest his crops and enjoy his bounty. The program gives him a chance to connect with nature while growing fresh, nutrient-rich food.

Arnold Trevino served 25 years in California state prisons. Since his release in 2011, he has earned bachelor's and master's degrees in social work.

Today, Trevino is the outreach coordinator for Project Rebound at Fresno State University, a program that supports higher education for formerly incarcerated people. He also facilitates the Insight Garden Program at Avenal State Prison, where he served seven of his 25 years behind bars. He has seen firsthand what planting and harvesting can do for someone on the inside.

"A lot of men rediscover themselves," Trevino said. "They get to realize their potential.They learn how to take off that hard-core mask and be themselves and be productive."

Michael Capers, who was incarcerated in New York for 12 years, says a prison gardening program gave him new direction in life.

"Having a garden is more than just about feeding your body," he said. "When you're incarcerated and you don't see green space, all you see is concrete, it can be very traumatizing."

Working in a prison garden has inspired Capers to pursue a career in wellness, fitness, and nutrition.

Additional benefits of having a garden for prisoners include:

Boost in mental health. Insight Garden Program's curriculum includes trauma-informed care as well as horticulture therapy. "Just the act of gardening itself is extremely healing and tending to another life form can be very transformative," said Margot Reisner, IGP's program & operations associate and a co-facilitator at San Quentin State Prison.

Improved behavior. "To have something that you're invested in like this program really keeps guys on the straight and narrow. They don't want to jeopardize their involvement in the program. You end up with less people in the population creating issues," said Rebekah Mende, Maine State Prison's vocational trades instructor.

Money savings. Mark McBrine, the food service manager at Mountain View Correctional Facility, said he's been able to save money with the changes he's implemented. "If you're willing to put the time in and actually use it to train these guys to make meals from scratch, then we're able to create some pretty amazing meals and come in under budget."

Job training lowers recidivism rates. 95% percent of incarcerated people will reenter society, but many can't find jobs. Employers are quick to reject candidates with a record. Maine State Prison's Master Gardener certification gives formerly incarcerated men a leg up.

"A company that has to choose between a guy without a record but with no Master Gardener training or an ex-felon with a Master Gardener certificate may choose the ex-felon because of that certificate," Mende said. "That's important because we know that one of the basic tenets of recidivism is the inability to become employed."

What can rural farms and facilities do?

The number one catalyst for change is advocacy. Someone within the correctional facility needs to prioritize healthy food options for its residents. It could be the warden, the food services director, or a correctional officer. With someone on the inside willing to advocate, change can trickle into a broken system.

Peter Allison, executive director of Farm to Institution New England, oversees a six-state network of nonprofit, public and private entities. They work together to transform the food system by increasing the amount of good, local food served in correctional facilities and other institutions.

Allison offers the following suggestions to facilities and partners that want to flip the script on prison food:

Source from local farms. Some farms are willing to sell their excess supply of healthy, edible products for a much lower price. "Correctional facilities have a labor force that can take the overage and make good use of it," Allison said.

For example, kitchen staff can take tomatoes with blemishes and put them in a stew or flawed apples and make apple sauce, which will add flavor and nutrition.

Unfortunately, some states don't allow their department of corrections (DOCs) to source from vendors that are not approved, or on contract. Allison says to check to see if there is a policy that allows exemptions to that rule, even for small purchases. This can help prime the pump for more local food down the road.

Partner health organizations with post-release centers. "Just about everyone who's in prison or jail is going to get released at some point," Allison said. "Many returning citizens need to start providing food for themselves without adequate cooking facilities, access to healthy food, and sometimes skills. Connecting these individuals with programs that provide support in these areas is key. Food is core to that and an important avenue to help people stay healthy and stay out of prison."

Plant a garden. Prison and jail garden programs have many potential benefits. It's possible for incarcerated people to produce food with some seeds, tools, and space.

Partnerships with agri-minded nonprofits or cooperative extension programs can help provide useful practices to make these programs succeed.

Talk to an expert. Rebekah Mende of Maine State Prison has offered to work with interested parties. Mende spoke on Security to Sustainability at a 2021 virtual conference, Social and Ecological Infrastructure for Recidivism Reduction, sponsored by Yale School of the Environment.
She can be reached at Rebekah.Mende@maine.gov.

Start a fresh food package program. In New York, Directive 4911 allows family members to bring food packages to prison visitation or ship packages to their incarcerated loved ones. They can send up to 35 pounds of food per month, including fresh produce.

Capers believes Directive 4911 should be adopted nationwide. "The goal of prison is to rehabilitate," he said. "If they don't want to take the onus, let our families do it for us."

Restoration can start with meals

Activists argue that the bigger problem in today's criminal justice system is mass incarceration rooted in racial inequities. The U.S. has seen a 500 percent increase in the prison population over the past 40 years, according to The Sentencing Project. Mass incarceration impacts African-American men and their families and communities more than any other racial group. It puts a drain on money and resources with diminishing returns.

While social justice organizations push toward reform, incarcerated individuals suffer physically and mentally from the lack of nutrition in prison. Nutritious food won't solve all of the problems within a complex system. But it can give incarcerated individuals the chance to thrive on the inside, and out.

Capers says the question we should ask the people in authority is, "Why not?" Access to nutritious food is a fundamental human right and should be granted to all Americans, including the incarcerated. It's about dignity and respect. Rural prisons in particular have access to green spaces within their fences and farmland in their backyards. Perhaps the question we should all be asking is, "Why not start with food?" ●

No Place to Go: Exploring the Landscape of Maternity Health Care Deserts

RUDRI PATEL

WRITER

Rudri Bhatt Patel is a lawyer turned writer and editor. Prior to attending law school, she graduated with an MA in English with an emphasis in creative writing. She is the co-founder and co-editor at *The Sunlight Press* and on staff at *Literary Mama* and her work has appeared in *The Washington Post*, *Civil Eats*, *Business Insider*, *Saveur*, *DAME*, *ESPN*, *Phoenix New Times* and elsewhere.

Meredith Bowden, a North Carolina midwife, offers a staggering perspective: Of the 100 counties in the state, 24 lack an obstetrics provider in the area, while one-third don't have a labor and delivery facility.

As the president of the National Association of Certified Professional Midwives (NACPM/North Carolina chapter), she has a perspective many do not.

"There is a drive time issue to get to care. In many of those counties it's an hour or more travel time which leads women waiting until later in their pregnancy to establish care or skipping it altogether," Bowden said. In terms of receiving access to medical care, it isn't until the very end for many pregnant women living in maternity care deserts.

Unfortunately, this isn't a typical occurrence. In the 2020 March of Dimes (MOD) reporting on maternity health care deserts, more than 2.2 million women across the United States live in counties where there are no obstetric services or hospital providers. This is an unbelievable statistic, given that in 2021 the United States, one of the most developed nations in the world, spent almost four trillion dollars on health care.

Many rural counties are seeing less than optimal outcomes for women who receive little or no maternity health care. It is estimated, according to MOD, "That up to 50 percent of maternal deaths could be prevented with focused improvements at the provider, system and patient levels with the provider being the most impactful."

The lack of maternity health care juxtaposed with how little is spent on health care in the United States are two facts hard to reconcile for Dr. Scott Fowler, a lawyer, OB/GYN, and president and CEO at Holston Medical Group, whose practice covers eastern Tennessee, southwest Appalachia and southwest Virginia.

"Maternity care is not something new, and it is something that a lot of countries have worked out nicely for almost any area where a birth occurs," Fowler said.

Defining the Meaning of Maternity Health Care Deserts

According to MOD, a maternity health care desert is defined as follows: "Any county without a hospital or birth center offering obstetric care and without any obstetric providers. Women may have low access to appropriate preventive, prenatal and postpartum care if they live in counties with few hospitals or birth centers (one or fewer) providing obstetric care, few obstetric providers (fewer than 60 per 10,000 births) or a high proportion of women without health insurance (10 percent or more)".

Fowler agrees with this definition, but with some added quantifiers. "These are areas where there is limited or unavailable basic maternity care. We do have those in southwest Appalachia, Tennessee and southwest Virginia. My definition is a little broader since the model for maternity care is subject to fragmentation very easily. The access point is not the same over the course of a pregnancy with different hospitals getting involved. It is particularly true when you have patients who are under some pressure from unavailability of resources whether it is financial or access to cars," he said.

He thinks any place where there isn't a continuity of care for women may be considered a maternity care desert. "Whatever and wherever it is convenient for women to access maternity care, there should be things like common records, common understanding of what is going on with the patient," Fowler said. He adds that even in cities where maternity care is accessible, there should be a system to integrate these moving parts.

Barriers within Maternity Health Care Deserts

There are several barriers that prevent women from receiving maternity health care. Lisa Dillard, a nurse and maternal health director of March of Dimes, has worked in rural communities for the last 30 years, helping moms and other community health providers on the ground. One factor is that even if there is a possibility of access for rural pregnant moms, those opportunities are slowly being eliminated. The reality is that as of January 2020 at least 120 rural health facilities have closed.

Dillard thinks even when moms have the resources to find transportation and get to a facility, another problem emerges. "The biggest issue I hear is moms will say 'I have a long way to go to be seen'. But most often they'll say 'I can't see a particular doctor or another (even if moms are willing to drive 45 minutes to be seen) because not everyone who provides OB care takes Medicaid'".

Other factors also come into play. "Access to care is one issue, quality of care is a whole other issue, but recruitment and retaining qualified providers from a metropolitan area and a hub to extend their services to women that are out of area is difficult," Dillard said.

Finding a provider who will offer a level of care comparable to metropolitan areas is the difficult task women in rural areas face. "Those services are not all expanding themselves or extending their reach to do satellite or shared resources for clinics across systems of care," Dillard adds. "One potential solution may be to take our best providers and make them regionally available to any and all moms rather than just privately insured moms with resources for getting access."

In other areas where there are nontraditional providers, poor outcomes could be avoided if the state agreed to egislation allowing these individuals to practice. In North Carolina specifically, midwives are not allowed to deliver babies. North Carolina is one of fifteen states that prohibits this practice. MOD advocates expanding access to midwifery since this resource "could help improve access to maternity care in under-resourced areas, reduce interventions that contribute to risk of maternal mortality and morbidity in initial subsequent pregnancies, lower costs, and improve the health of moms and babies".

Patients using a midwife in North Carolina cannot even bill insurance. Bowden points out the disadvantage and financial disparity that the prohibition creates. "Delivery by certified professional midwife would cost in the $3,000 to $5,000 range, whereas a hospital bill for a vaginal delivery could cost up to $20,000," Bowden said. As a result, 18 percent of pregnant women in North Carolina received less than half of the recommended prenatal visits.

Bowden argues that a big part of the maternity desert issue in North Carolina stems from the historical shift of eradicating midwives in southern states. North Carolina mostly had black midwives serving their communities up until the 1920s, when obstetrics care was invented. "Since then, it has been an effort to bring midwifery back," Bowden said.

Fowler suggests the fragmented medical approach a pregnant woman receives is detrimental in her seeking continuity of care. Bowden agrees. "Most obstetric practices are so large that most women are meeting their providers for one time during their prenatal course for approximately 15 minutes before it is time for their labor and delivery. Many of them are stepping into it without having any form of continuity or trust-building relationship," she said. Many times, a pregnant woman may not meet a medical provider in the hospital prior to giving birth.

Seetha Modi, MBA, MPH, andDirector of Maternal Health for the March of Dimes, points to health insurance as a block for women to receive adequate healthcare. Uninsured women who don't have health insurance cannot afford the high out-of-pocket costs for their pregnancies.

"We don't have Medicare for our single payer system where people can feel confident getting care and not worried about what they are going to be charged," Modi said.

The lack of transparency in health care also contributes to the maternity health care deserts. Many women go to a well-woman visit not knowing what the cost is and then get billed for the service later.

Looking at Solutions

One of the key ways to make a change is to authorize more service providers to serve in an underserved area. "There's a limited number of extended providers," Dillard said.

For instance, if there were opportunities for certified nurse midwives to serve in rural medically underserved areas, and "once that practice is established and takes off and word-of-mouth and good outcomes emerge," perhaps women would be more likely to embrace it as an option. "I think this kind of option is valuable. They do fill in a gap," Dillard said.

The medical community would have to get on board with agreeing to using midwives as an option. Bowden says legislation has been presented to change these laws in North Carolina, but the medical community essentially stood firm and were resistant to this change.

Similarly, Dillard explains that "Practicing physicians have been resistant in developing those partnerships. The two entities don't play together."

Until medical communities build those partnerships, share the data and outcomes, and at least consider a pilot program of shared resourcing, pregnant women will continue to struggle in maternity deserts. "Those kinds of programs haven't gotten off the ground in Texas," Dillard said.

Another solution may be to create a perinatal regionalization. "It is coordinating a system of care within a geographic area that you can think about women getting risk-appropriate care," Modi said.

This facility would be equipped with adequate resources and health care providers. "You want to make sure wherever you are sending a woman the facility has the appropriate equipment, staffing, and expertise on hand," Modi said. The regionalization of maternity care can help to coordinate care across the region.

Dillard agrees that building a regionalized care system that connects certified nurse midwives with advanced practitioners, as well as maternal fetal specialists by way of telehealth and telemedicine to join in care for underserved mothers, is a key component in changing the landscape of maternity health care deserts.

Other solutions include extending the Medicaid postpartum coverage period for 12 months. Many mothers need services well beyond the current limit of 60 days. In addition, having reimbursements for doula care will help with outcomes and reduce higher rates of mortality among women of color.

Also, expanding Medicaid, according to MOD research, for individuals who fall at or below 138 percent of the Federal Poverty Level could be a part of the solution. "New research shows that states that expand Medicaid improve the health of women of childbearing age by increasing access to preventive care, reducing adverse health outcomes before, during, and after pregnancies, further reducing maternal mortality rates."

With the pandemic, the availability of telehealth increased to help health care needs for all individuals, and that effort should continue by providing services for evidence-based medicine for pregnant women during and after their pregnancy.

However, MOD reports that access to telehealth has been more challenging for women on Medicaid than those who hold private insurance. Some of the barriers include language, lack of Wi-Fi access, child care issues, and unfamiliarity with electronic software.

Telehealth could be a potential solution, but women in maternity care deserts need access to those technologies.

The MOD report also cites "creating paid family leave systems as a potential option and addressing determinants of health caused by social, environmental and economic factors to reduce disparities and to improve health equity. This includes increased research and engaging in health system reform."

In terms of the cultural component of maternity health care, Bowden advocates a model where health care providers, specifically midwives, reflect the community that they are serving.

These providers would live in the community they are serving so they can recognize the nuances of that area, because regional differences can play a part in making the woman feel more comfortable.

Bowden thinks the pandemic may create a solution where midwives are embraced as an option. People are now more open to conversations that were historically closed. "We are optimistic with a little trepidation," she said.

"I feel for pregnant people and the lack of available options," said Dillard. "We are doing a disservice to our childbearing families. It's the classic scenario where people with means have access to transportation, food, and can find a provider for care. We need every county to have access to obstetrics care at a reasonable cost." ●

Oral Health Challenges in Rural America: Five Steps to Better Oral Care

L. MICHAEL POSEY

WRITER/EDITOR

A pharmacist-editor-journalist since 1980, L. Michael Posey is a regular writer and editor for The Gerontological Society of America, Postgraduate Healthcare Education's PowerPak.com website, and other clients. He is the author of many news and journal articles and author or editor of several books, including the landmark pharmacy textbook *Pharmacotherapy: A Pathophysiologic Approach*.

For *Rural Health Quarterly,* he most recently wrote "LGBTQ+ Older Adults Needing Long-Term Care in Rural Settings: Invisible No More" for the Spring 2022 issue.

When a middle-aged man missing a filling in a back tooth came into a Federally Qualified Health Center (FQHC) in a small town in Michigan, who could have guessed he would be in intensive care a few hours later?

"It was a Wednesday morning about 11:30," said Jane Grover, DDS, MPH. "The gentleman had not sought care because the lost filling was more of a nuisance than anything else. He said, 'It was the weirdest thing. I lost it over a year ago, but lately, I have to grit my teeth together in order to swallow."

Grover, senior director of the Council on Advocacy for Access and Prevention at the American Dental Association, realized the tooth was infected, and with the throat "feeling like a brick," the microbes were spreading. He had Ludwig's Angina, a life-threatening condition in which swallowing can be difficult and the breathing tubes can become occluded. She sent the man directly to an oral surgeon, who extracted the tooth and transferred the patient to a local hospital. He received intravenous antibiotics in an intensive care unit for three days.

Dental cavities are the world's most common infection, affecting more than 90 percent of people around the globe. Yet people frequently assume oral health is not all that important. In rural areas of the United States, shortages of dentists and other oral health professionals limit access to care, as does the lack of insurance and money. The increasingly well-recognized connections between oral and overall health are ignored. Even insurers and governments view the mouth as disconnected from the body by covering oral care separately from medical benefits, severely limiting the amount of covered oral care.

What can people living in rural areas do to keep their mouths healthy throughout their lifespan? Here are five steps in that direction that leverage advances in knowledge and innovations for caring of your mouth.

1: Get sufficient fluoride to protect the primary teeth during development and throughout the lifespan.

During tooth development — a process that starts in utero and continues through childhood and adolescence — the presence of fluoride is the single most important factor in preventing cavities and maintaining oral health. "Particularly for children, it's so important to have enough fluoride as the primary teeth develop," Grover said. "Primary teeth have their own unique challenges, and we want to keep those as healthy as possible."

Fluoridation of communities' water supply is the primary means of getting this important mineral to the primary teeth as they develop. Despite strong evidence of reduction in cavities and cost-effectiveness of fluoridation, costs and cultural beliefs have limited the number of communities with fluoridated water.

Currently, about 200 million Americans have a fluoridated water supply. For the other 140 million, there is good news on the fluoridation front and a plethora of products that can get fluoride to the teeth.

Water systems supplying rural areas can be too small to cost-effectively use fluoridation systems designed for larger towns and cities. A recent development may change the economics of fluoridation for water systems serving 19 million Americans in rural settings and smaller communities.

Building on the concept used to chlorinate swimming pools, the Centers for Disease Control and Prevention funded research that led to development of a low-cost tablet and feeder system suitable use in 32,000 systems serving 50 to 10,000 people. (CDC, 2021; KCI, 2021; KCI, 2022)

Without fluoridated water, parents can use prescription-only oral fluoride supplements for children ages 6 months to 16 years. Topically applied fluoride in dentifrices and mouthwashes makes teeth more decay resistant during adulthood. (ADA, 2021)

The costs of these products limits their use, particularly in rural areas where dentists are few in number and incomes are limited. That raises the issue of access to oral care.

2: Expand Access by Increasing the Number of Oral Health Providers

St. Croix is an appealing destination for people who love a quiet rural area that also features the turquoise water of the Caribbean for scuba diving, snorkeling, and sailing, with white sandy beaches for rest, reading, and relaxation. For the dental school graduate with a large debt to repay, this Virgin Island paradise is attractive for another reason: it is a dental Health Professional Shortage Area (HPSA) where dentists can participate in loan repayment programs.

"The health center on St. Croix has one of the highest HPSA scores in the United States," Grover said. "If you were looking for loan repayment as you embark on a dental career, who wouldn't consider that rural area?"

The U.S. has an acute need for dentists in nonmetropolitan counties in every state and jurisdiction (Figure 1). Serving 67 million people, the 6,998 HPSAs with dental health shortages can be geographic areas (676 HPSAs), populations of specific groups of people (such as people experiencing homelessness or Native Americans; 2,126 HPSAs), or facilities, including FQHCs and correctional facilities (4,196 HPSAs).

The federal government estimates that 11,653 practitioners are needed to meet the oral care needs of these HPSAs. (HRSA, 2002)

Even California, the most populous state with its sprawling metropolitan areas, has several largely rural counties with an oral health worker shortage. A state initiative, CalHealthCares, is distributing $340 million of state tobacco tax revenues from Proposition 56, approved by voters in 2016, to dentists who commit to serve Medi-Cal beneficiaries for five years (up to $300,000 in loan repayment) or 10 years (practice support grants up to $300,000). (Physicians for a Healthy California, 2022)

A number of other approaches are being used to extend oral care to isolated areas, populations, and facilities. Mobile dentistry has taken services to schools for years. Kids can get their teeth cleaned and cavities fixed through programs such as the Colgate Bright Smiles, Bright Futures initiative in rural New York. (Anonymous, 2019)

The use of both mobile dentistry and teledentistry was accelerated by the coronavirus pandemic, particularly in its early months when nursing homes closed their doors. Apple Tree Dental leveraged its experience with mobile dentistry and teledentistry during that time with its seven clinics and remotely to nursing homes. (Apple Tree Dental, 2022)

"Oral health services … were not the top priority areas in nursing homes during the early phase of the pandemic," Michael J. Helgeson, DDS, CEO of the Minnesota-based Apple Tree Dental, said during a 2020 webinar of The Gerontological Society of America. "It took a while to get the time and energy just to meet with facility administrators and clinicians to talk about restarting the services."

Now that facilities have seen the advantages of residents receiving oral care onsite, the company is looking at ways to keep those services higher on the list of resident and patient needs, and make teledentistry a permanent option for triaging patients through remote camera hook-ups. (GSA, 2021)

In many states, legislatures have expanded the scope of practice for

dental hygienists, who can increase access by performing specified functions without a dentist being present. Minnesota is among the leaders in this movement. Hygienists can order X-ray images, administer local anesthesia, and apply fluoride and sealants without a dentist.

All but a handful of states have expanded hygienists' scope of practice in similar ways. (American Dental Hygienists' Association, 2022)

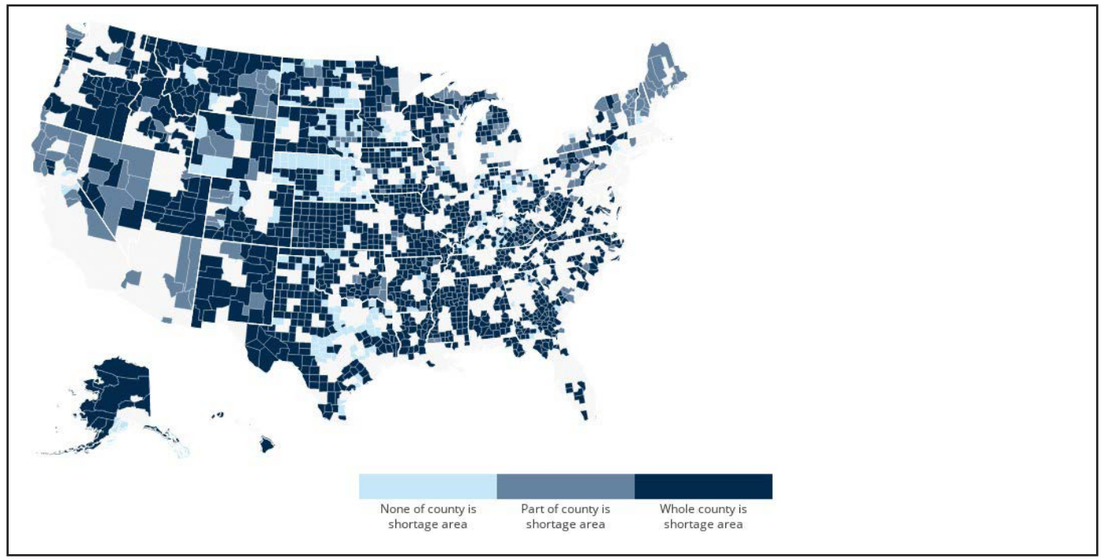


Figure 1. Shortages of dental professionals in nonmetropolitan counties of the United States, 2022
Source: Rural Health Information Hub, data.HRSA.gov

3: Expand Access by Making Oral Care Affordable

Once adequate numbers of dentists have increased access to care, the next step is getting people to use them. That begins with affordability. For people with limited income and wealth, state-based Medicaid is often their only option for accessing oral care. These programs cover oral care for children more consistently than for adults.

"Medicaid could certainly be stronger in many states," Grover said. "Adult dental benefits under Medicaid are too often a 'now you see them, now you don't option.' The ADA remains supportive of a consistent adult dental Medicaid benefit. People need oral health services throughout their lifespan. If we had a strong, predictable, consistent adult dental Medicaid benefit in states, we wouldn't have older adults with unmet dental needs."

Barriers to Medicaid availability also affect providers. Payments for dental services have been low, but some states are making improvements in payments and benefits in the Medicaid program, including adding adult benefits where only emergency care was covered previously, Grover said.The credentialing process for Medicaid can be burdensome though. "In some states, a new graduate might need a year to get credentialed as a Medicaid provider," Grover said. "In one state, eight managed care organizations administer the program, and a provider must be credentialed by all of them – all eight."

Older adults are often surprised at age 65 when they learn Medicare does not cover dental services. They too need to use Medicaid, but it has both income and property limits that put it out of reach for older adults who are still working or have retirement funds.

In California, for example, the income limit is pegged to the federal poverty level plus $20 (the 2022 limit is $1153 per month for a single individual), and assets cannot be valued at more than $2000 (one home, personal items, one motor vehicle, and certain other properties and belongings can be exempted from this calculation). (Medicaid.gov, 2022; State of California, 2014)

4: Promote Oral Health Care to Rural Residents

For rural residents, the hurdles to oral care do not end with finding a provider and paying the bills. Compared with people living in urban areas, travel distances are greater and transportation options fewer.

Add to those challenges the general misconception many people have that oral care is not that important, it's no wonder that untreated cavities and the loss of natural teeth in later years are common problems for rural residents (Figure 2). (Behavioral Risk Factor Surveillance System, 2020)

Public relations campaigns promoting oral care in an area or population are important, and many educational tools are available, including Mouth Healthy, an ADA website providing information and education to consumers. (ADA, 2020)

Better still is one-on-one communications. These are especially effective for moving people to perform the daily home care needed for a healthy mouth and identify a "dental home" for the needed twice-yearly dental cleanings and evaluations. That process starts by getting to know people.

"I remember one lady, bless her heart," Grover recalls from her years of dental practice in Michigan. "Every

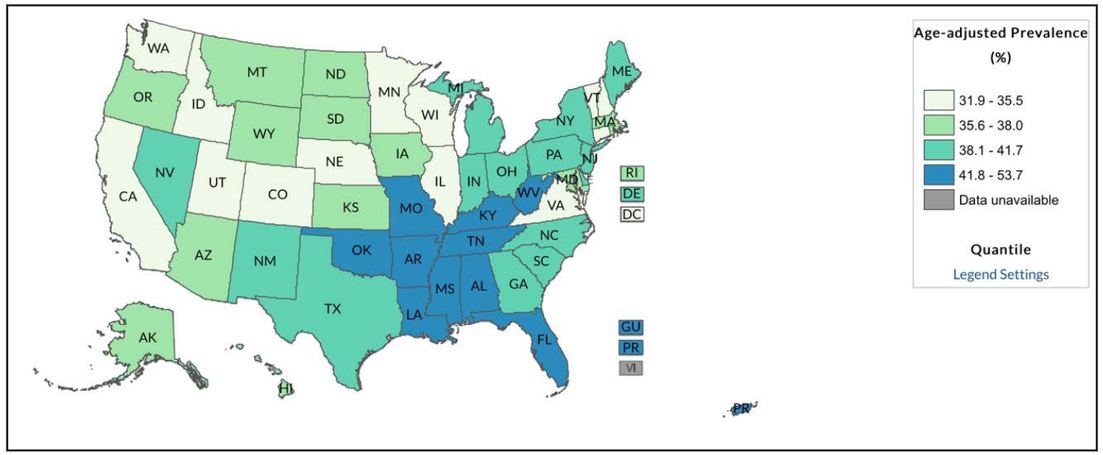


Figure 2. Adults with Any Permanent Teeth Extracted, by State (age-adjusted prevalence), 2020
Source: Behavioral Risk Factor Surveillance System, 2020.

time she would come in, there would be some decay. I would say, 'Betty, what's going on? You're a good brusher, but I'm always finding something.' It turned out she was putting brown sugar on everything!" One "sweet older man" became the caregiver for his wife, and the stress led him to start sipping apple juice all day, Grover said, leading to tooth decay. By knowing her patients, Grover was able to help them keep their mouths healthier.

Interprofessional cooperation is another important trend in oral health care. The process begins in dental school, where students learn about team-based care through interactions with students in other health professions.

The Interprofessional Education Collaborative was founded in 2009 and has since developed core competencies expected in emerging health professionals that describe a climate of mutual respect, knowledge of roles and responsibilities for each profession, communications with patients and other professionals, and working as a team to provide patient-centered care. (IPEC, 2022)

In practice, pediatricians make critical referrals of children with dental needs, Grover said. Family physicians and obstetricians/gynecologists are educating patients on keeping their mouth as healthy as possible.

Pharmacists are frequent sources of advice for people seeking over-the-counter treatments for tooth or mouth pain. A large fraction of the prescriptions for analgesics filled by pharmacists come from dentists.

"The message is too important to not have everybody sharing guidance with patients on how to keep their mouth healthy," Grover said.

"This includes smoking cessation. The mouth is really an important part of the body. At ADA, we're just so glad that that realization is really continuing to increase."

5: Educate Oral Health Providers About the Oral–Systemic Health Link

For dental and other health professionals to be prepared to manage care of residents of rural areas, they need up-to-date information on an increasingly important connection between oral and systemic health.

Infections and inflammation of the gums as seen in periodontal disease have a bidirectional association with diabetes; each condition can lead to the other.

About one third of people with diabetes do not realize they have it; periodontists and general dentists can ask about the triad of symptoms common in diabetes: polydipsia, polyphagia, and polyuria (thirst, hunger, and the need to urinate frequently, particularly at night).

Physicians caring for people with diabetes should be alert for bleeding gums and other signs of periodontal disease. (Hajishengallis, 2022)

Associations also have been made between periodontal disease and other medical conditions. Respiratory infections and aspiration pneumonia can develop when organisms from the mouth travel to the lungs.

The inflammation associated with cardiovascular disease may be linked to similar processes that occur with periodontal disease. Treatments of osteoporosis can cause problems in the mouth.

Medications that cause dry mouth allow development of cavities when saliva is not present to provide its beneficial effects on microbial growth. (Hajishengallis, 2022)

The connections between oral and general health mesh with the interprofessional care movement discussed above. Health professionals aware of these links can detect periodontal disease during an annual physical examination, symptoms of diabetes during intake of a new dental patient, or the need for vaccines when pharmacists dispense prescriptions for postsurgical analgesia or antibiotic prophylaxis.

The ADA's Grover emphasizes community among patients and health professionals in rural settings, and between policymakers and those providing or needing oral care.

"We continue to support optimal oral health equity for all populations from the first tooth and throughout the lifespan," she said. "We'll continue to work with legislators and our members to move that message forward." ●

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Accessing Gender Affirming Care in Rural Communities

ALEX ANTEAU

JOURNALIST
Alex Anteau is a Master of Health and Medical Journalism student at the University of Georgia.

For Abe Bocinec, moving to a rural area was a big deal. It's about an hour drive across state lines to get to Trader Joe's or Target, and even further to get to more specialty retailers. But it was worth it. He had the opportunity to move in with his partner, Theo Horne, at Horne's family home in Doerun, Georgia. The country home was a fixer-upper, but picturesque. The cow pasture next to the house is refilled with fresh hay bales every other day, the trail to the house is lined by pine trees, and the beds are covered with Horne's grandmother's handmade quilts.

"[It's] just so special," Bocinec said. "I love the quiet and I love the way it smells here." However, the decision wasn't without its drawbacks. Both Bocinec and Horne are transgender, and in rural Georgia, that made things difficult.

The Gender Paywall

"Isolation was a challenge - finding my sense of self in a place where I was the only one like me was complicated," Horne wrote. "Realizing I was trans and that I'd need to do something about that medically was complicated." These are all things Bocinec had to contend with when he moved to Doerun. "I grew up in a pretty big city and lot of privilege that I didn't even realize that I had as far as access [to resources]," Bocinec said.

Appearing gender diverse in more traditional communities can lead to lack of acceptance and difficulty accessing a variety of services, from barbershops to hospitals. For Bocinec and Horne, the closest haircut is an hour away.

"I don't want to be sitting in a chair, having to explain my gender to a stranger holding scissors," Horne wrote. In a place where getting a haircut alone is risky business, neither feels comfortable going to a rural provider. "I drive to Atlanta for all my medical needs," Horne wrote. "If, God forbid, I have a medical emergency I would only go to a local hospital if that was the only option. I'd take a broken bone four hours up the road to an Atlanta doctor."

Adria Stembridge, who moved to Atlanta to transition and get better access to health care expressed similar frustrations. Electrolysis, a popular hair removal treatment among transfeminine people, while also readily available, is also difficult to access without the specter of discrimination.

According to Stembridge, "Usually you're gonna have access to electrolysis if nothing else, [but]...if you live in a much smaller town…in South Georgia...maybe they're gonna turn you away."

When possible, online services have stepped in to fill the gap where brick and mortar businesses are unavailable. Bocinec finds himself shopping online a lot more these days. Services like vocal training and support groups are also readily available over video call.

However, the most common notable application of this technology is telehealth. The service is popular among transgender patients hoping to begin or continue their medical transitions.

Izzy Lowell, founder of QueerMed, a gender-affirming clinic in Atlanta that takes in-person and telehealth appointments, said that her practice serves 14 states and about three-quarters of its clientele comes from outside the city.

QueerMed accepts insurance, but this isn't the case for all telehealth providers. Through Plume, another common online service, hormone replacement therapy, or HRT, regular blood tests necessary to monitor hormone levels and online support come with a $99 a month price tag. It also offers letters for gender confirmation surgery for a one-time $150 fee.

The high costs pose yet another challenge for an already marginalized group. According to the Williams Institute at the University of Southern California, the average poverty rate for transgender people is 29% (2019 data), compared to the 11.4% overall population rate reported by the 2020 United States Census.

"We know people are underemployed and underinsured," Lowell said. "The costs are a big barrier. It's the bane of my existence, really. I wish we could help more people."

The demand for telehealth is overwhelming. When Lowell started her practice in 2017, she hoped that eventually gender-affirming care would become so mainstream that there would no longer be a need for her services.

This hasn't been the case. Jake McBride, a health justice organizer for Out in the Open, a rural LGBTQ+ community organization in Vermont, says many clinics in his state have been overwhelmed by demand and some aren't able to accommodate everyone who needs care.

"There shouldn't be a need for a clinic like mine, that has to fill in this gap for something that can easily be provided by primary care doctors," Lowell said.

Trans Broken Arm Syndrome

Bocinec and Stembridge referenced the idea of the broken arm joke to illustrate their experiences accessing healthcare completely unrelated to their transitions.

"If you go to the doctor with a broken arm, they're like, 'Okay, I can help you,'" Bocinec recounted the joke. However, the person then discloses that they are transgender. The doctor responds: "Oh, well, I don't know how to help your broken arm anymore. It's a trans broken arm. I'm not certified in hormone treatment."

Stembridge recently suffered a blood clot from a knee brace that was sized too tightly. Instead of addressing the brace, she said that her doctor linked the clot to the estrogen she's been taking for years and did not consider loosening the brace.

"If I could avoid disclosing my transness, I would," Horne wrote. "It's shocking how many doctors think trans people need some special antibiotic that they don't know about – I guess the cis antibiotics are much simpler."

As a result, when trans people seek medical care unrelated to their transition, they don't necessarily disclose the fact that they are trans to their providers because they are afraid of discrimination.

Tim Brown, who teaches at the Augusta University and University of Georgia Medical School partnership and is an advocate for LGBTQ+ competent healthcare and education, says this is a problem.

He says doctors need to be aware of any conditions or concerns a patient might have, including if their gender doesn't match their birth sex, because this can change the likelihood of developing certain medical conditions.

"It doesn't change the way I feel about [someone's] gender identity and expression," Brown said, but disclosure allows doctors to more accurately diagnose their patients.

There's also a gap between the transgender patients who need care and the doctors who are able (and willing) to give it.

"I would love to say that every environment you go into is safe, but I would be lying," Brown said. "There are people that don't necessarily understand trans care. It scares them a bit because they haven't been educated about it."

When seeking an affirming provider, Brown advised LGBTQ+ patients to be mindful of their surroundings. In particular, he suggested paying attention to the language on patient intake forms and how they are treated on the phone before making an appointment.

As a healthcare advocate, McBride advised doctors to do harm reduction training and queer competency trainings taught by members of the LGBTQ+ community.

“Have a pride flag up, tell me that I am safe in your office, put on your website that you're queer-friendly,” McBride said. “But don't you dare do any of those things until you've done the damn training.”

"Now if only there were a good bar to go to, we’d be set."

When he's not teaching medical students, Brown organizes panels where members of the local LGBTQ+ community share their experiences and tell the audience what they think they should know about working with the community. He also hosts information sessions at local hospitals to educate working doctors about the trans community.

The Equality Clinic of Augusta is one such project. The practice is primarily run by medical students at Augusta University, and is centered around LGBTQ+ affirming care to uninsured members of the community.

“We're all working together. We're learning and we're creating the future of what care looks like for all people,” said Dannae Rammos, a second-year medical student who serves as the clinic’s community outreach and marketing coordinator.

Out in the Open is also in the process of launching the HEART program, a project that trains volunteers to be patient advocates who can attend doctors’ appointments at the request of patients who feel like they can’t effectively advocate for themselves.

The service is flexible. A patient might just need a comforting presence in the doctor's office, or they can request that the volunteer intervenes on their behalf if the doctor repeatedly misgenders or otherwise discriminates against a patient.

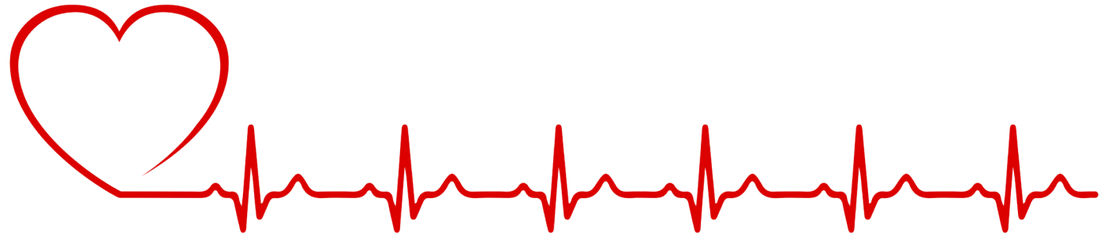
“There's this idea that rural spaces are not safe for queer people. In some ways, that can be very true, and in other ways, rural spaces can be a refuge,” McBride said.

For all the challenges that come with being rural, for Bocinec and Horne, the move was worth it and times are changing.
Horne described the joy and kinship of living in his childhood home. “Growing up in such a vast space, wrapped in nature and surrounded by folks who tended to the earth provided me with a perspective on life that I wouldn’t trade.” Horne wrote.

As he sits on his front porch, neighbors drive by to say hello and he watches calves grow up in the surrounding fields. His family helped build this community and he looks forward to carrying on their legacy.

“The opportunity to live where I grew up, to live in a rural area as a trans person, feels like a blessing. The possibility of getting to live here, and live here well, is almost overwhelming. There is discomfort, but there were discomforts in the city, too.”

As an aside, he adds: "Now if only there were a good bar to go to, we’d be set." ●



RHQ CONFERENCE CALENDAR

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.

47th Annual National Institute for Social Work and Human Services in Rural Areas Conference
July 11 - 12, Nacogdoches, TX
Stephen F. Austin State University

2022 Annual South Dakota Rural Health Leaders Conference
Jul 12 - 13, Pierre, SD

2022 Annual NRHA State Rural Health Association Leadership Conference
July 12 - 13, Washington, D.C.
NRHA Conference Space

2nd Annual Texas Nurse Practitioners Rural Health Conference *Virtual*
July 16, Austin, TX

14th Annual California Rural Health Conference
July 25 - 27, Folsom, CA
Lake Natoma Inn

National Conference on American Indian/Alaska Native Injury and Violence Prevention *Virtual*
July 26 - 28, Denver CO

2022 Annual Association of Clinicians for the Underserved
July 31 - Aug. 3, Washington, D.C.
Mandarin Oriental

2022 Annual National Rural ITS Conference & ITE Annual Meeting and Exhibition
July 31 - Aug. 3, New Orleans, LA
New Orleans Sheraton

2022 Ohio Rural Health Conference
Aug. 1 - 2, Cambridge, OH
Salt Fork Lodge and Conference Center

2022 Annual National Association of Local Boards of Health Conference
Aug. 1 - 3, Grand Rapids, MI
Amway Grand Plaza

5th Annual Minnesota Alliance of Rural Addiction Treatment Programs Late Summer Conference
Aug. 2 - 3, Willmar, MN
Willmar Conference Center

2022 Missouri Rural Health Association Conference
Aug. 9 - 10, Camdenton, MO
Lodge at Old Kinderhook

33rd Annual Illinois Rural Health Association Educational Conference
Aug. 10 - 11, Champaign, IL

2022 Rocky Mountain Tribal Leaders Council Public Health Conference
Aug. 17 - 18, Billings, MT
Billings Hotel and Convention Center

4th Annual Upper Midwest Telehealth Resource Center Conference
Sept. 13 - 14, South Bend, IN
Gillespie Conference Center

20th Rural Health Clinic Conference
Sept. 20 - 22, Kansas City, MO
Sheraton Kansas City Hotel at Crown Center

21st Annual Critical Access Hospital Conference
Sept. 21 - 23, Kansas City, MO
Sheraton Kansas City Hotel at Crown Center

2022 Annual Northwest Regional Telehealth Resource Center (NRTRC) Conference
Sept. 26 - 28, Salt Lake City, UT
University Guest House & Conference Center

2022 Annual National Indian Health Board Tribal Health Conference
Sept. 26 - 28, Washington, D.C.
Hyatt Regency Capitol Hill

International Conference on Rural Community and Public Health Systems Management
Sept. 27 - 28, San Francisco, CA

8th Annual Northeast Regional Telehealth Conference
Sept. 29 - 30, Southbridge, MA
Southbridge Hotel & Conference Center

2022 Annual Conference on Advancing School Mental Health *Virtual*
Oct. 13 - 14, Baltimore, MD

25th Annual South Carolina Rural Health Conference
Oct. 18 - 20, Greenville, SC
Greenville Hyatt Regency

2022 Annual Colorado Rural Health Conference
Oct. 19 - 21, Colorado Springs, CO
The Antlers, A Wyndham Hotel

Did we miss one? Let us know at RHQ@ttuhsc.edu

RHQ CONFERENCE CALENDAR

30th Annual West Virginia Rural Health Conference
Oct. 19 - 21, Lewisburg, WV
WV School of Osteopathic Medicine

2022 Annual Maryland Rural Health Conference
Oct. 24 - 25, Flintstone, MD
Rocky Gap Resort

2022 Annual New England Rural Health Conference
Nov. 1 - 2, Killington, VT
Killington Resort

47th Annual National Association for Rural Mental Health Conference
Nov. 2 - 4, Boulder, CO
Embassy Suites

2022 National Conference on EMS
Nov. 3 -5, Atlantic City, NJ
Harrah's Waterfront Conference Center

24th Annual Kentucky Rural Health Association Conference
Nov. 16 - 17, Somerset, KY
Center for Rural Development

2022 Annual Midwest Rural Agricultural Safety & Health Conference
Nov. 16 - 17, Cedar Rapids, IA
Hotel at Kirkwood Center

2022 Annual Kansas Rural Health Association Conference
Nov. 16 - 17, Kansas City, KS

2022 Rural Health Voice Conference
Nov. 16 - 17, Williamsburg, VA
Great Wolf Lodge

2022 Annual Tennessee Rural Health Association Conference
Nov. 16 - 18, Pigeon Forge, TN
Music Road Resort

2023

34th Rural Health Policy Institute
Feb. 7 - 9, 2023, Washington, D.C.
Hilton Washington D.C. National Mall

2023 Journal of Emergency Services (JEMS) Conference and Expo
April 24 - 29, 2023, Indianapolis, IN
Indiana Convention Center & Lucas Oil Stadium

Rural Medical Education Conference
May 16, 2023, San Diego, CA
Sheraton San Diego Hotel & Marina

8th Rural Hospital Innovation Summit
May 16 - 19, 2023, San Diego, CA
Sheraton San Diego Hotel & Marina

21st Rural Health Clinic Conference
Sept. 26 - 27, 2023, Kansas City, MO
Sheraton Kansas City Hotel at Crown Center

22nd Critical Access Hospital Conference
Sept. 27 - 29, 2023, Kansas City, MO
Sheraton Kansas City Hotel at Crown Center

TEXAS TECH UNIVERSITY
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