PANHANDLE HEALTH

A QUARTERLY PUBLICATION OF THE POTTER-RANDALL COUNTY MEDICAL SOCIETY

WINTER 2026 | VOL 36 | NO.1

You Take Care of Your Patients,

We'll Take Care of the Banking.

Professional & Executive Private Banking

at the ♥ of the Medical Community

Medical Branch ♥

1700 Coulter Street | Amarillo, Texas 79106

anb.com | (806) 356-5889

Member FDIC | Equal Housing Lender

Amarillo National Bank

Awesome Service

WHEN IT COMES TO HEART AND VASCULAR HEALTH, WE'RE ALL IN.

For more than 20 years, the Heart and Vascular Center has been exclusively dedicated to fighting America's No. 1 killer – heart disease.*

Conveniently located on the campus of Northwest Texas Healthcare System®, we have built a reputation for excellence and award-winning heart care, minutes from home.

HIGH-QUALITY AND COMPASSIONATE CARE

From prevention, diagnosis and management of heart and vascular diseases to advanced heart surgery, stroke care and rehabilitation, the experienced and dedicated physicians at the Heart and Vascular Center can help you or your loved one get back to the life you love!

SPECIALTY SERVICES

We offer a range of comprehensive services, including:

We're committed to taking a patient-centered approach to your health – listening, understanding and partnering with you every step of the way. **Because when it comes to your health, we're all in!**

NEED A DOCTOR? VISIT DOCTORS.NWTHS.COM

HIGH PERFORMING HOSPITALS U.S.News & WORLD REPORT 2025-2026 HEART ATTACK

LEARN MORE AT **NWTHS.COM/HEART**

Northwest Texas Healthcare System

Heart and Vascular Center

1501 South Coulter Street, Amarillo, TX 79106

*Source: heart.org

Physicians are independent practitioners who are not employees or agents of Northwest Texas Healthcare System. The hospital shall not be liable for actions or treatments provided by physicians. For language assistance, disability accommodations and the nondiscrimination notice, visit our website. 264391833-4436581 11/25

PANHANDLE HEALTH

A Publication of the Potter-Randall County Medical Society

WINTER 2026 | VOL 36 | NO. 1

CONTENTS – Ringing in the New Year! What's new in healthcare

PANHANDLE HEALTH is published quarterly by the Potter-Randall County Medical Society, (806) 355-6854. Subscription price is $12.00 per year.

POSTMAN: Send address changes to PANHANDLE HEALTH, 1721 Hagy, Amarillo, Texas 79106. ISSN 2162-7142

GRAPHIC DESIGN BY IVAN GUZMAN AND PRINTING BY PRISMA.

Executive Director's Message

by Katt Massey, Executive Director, Potter-Randall County Medical Society

SCAN HERE
A quick survey that will help us improve your PHM experience!
Call Katt @ 806-355-6854 with any questions.

Hello PRCMS members and beyond!

2025 came and went in what it felt like a blink of an eye. Ebbs, flows, joy, celebrations, chaos, and woes!

When I think of "What's new in medicine", I think about gadgets, gizmos, and doohickies, not really the "in-depth" perception of what's happening in the clinic and at the bedside. This issue is almost like a casual question physicians ask each other, maybe a "Hey, what's new with you?" to the "layman." Like everything in life, medicine is evolving. We're at the helm of breakthroughs in AI, interesting legislative agendas, accreditation questions, and all kinds of things that would seem to hinder direct patient care. One thing is certain, though: during my tenure of a little over a year in my position, I have learned that doctors in the Texas Panhandle are truly taking care of their patients by advocating for them and staying up on the latest trends.

I have been fascinated in not only the Panhandle Health editorial meetings, but the PRCMS Board meetings, Walk With A Doc, TexMed, and TMA calls. I have learned so much, and I am thankful to know that I am working with a group of physicians who love this area and want what's best for it when it comes to the health of the community and surrounding areas. The Texas Medical Association is a stable trunk supporting the growth of the tree of medicine in Texas. PRCMS is just a single branch of that tree, and the physicians its leaves - changing with the seasons, rustling in the wind, and weathering storms, all rooted in community.

One thing that remains constant in all of "what's new in medicine." is that our local physicians strive to keep this area cared for, healthy, and happy!

Cheers to 2026!

Katt Massey

About The Artist
on the cover

Amy Thoennes Art - Alcohol Ink on Glass

As a life-long creative in West Texas, I found my personal expression through art in my early 40's. This discovery has developed into a career creating pieces that have made their way into homes across the nation, in particular, the Panhandle of Texas. In 2018, I began selling art and have since been featured in several galleries and exhibitions in Amarillo and Dallas, TX.

My process involves INK, GLASS, and sometimes FIRE (for effect). Each piece is a combination of vibrant, saturated inks on glass. I believe that art is an experience. It has the power to touch us to our core and remind us who we are, what we have overcome, and where we are going. It is my deepest hope to stir body, soul, and spirit.

President's Message
Looking Forward to 2026: What's New, and What's on the Horizon

by Tetyana Vasylyeva, MD, PhD, FAAP
Professor, Department of Pediatrics, TTUHSC Amarillo

The field of medicine has seen remarkable advancements over the past few decades, significantly improving healthcare quality and extending human lifespan. From the discovery of microbial treatments to the rise of modern precision medicine, these innovations continue to transform how diseases are diagnosed, treated, and prevented. Such changes have, in turn, reshaped the way care is delivered and experienced, presenting both opportunities and challenges. Modern healthcare trends aim to create a future where healthcare practitioners have more time to focus on patient care.

A central goal for the future of medicine is personalization, moving away from a "one-size-fits-all" approach. Precision medicine will leverage genetic, molecular, and lifestyle information to design tailored interventions. Advances in fields such as genomics, proteomics, and metabolomics will enable physicians to predict an individual's risk of disease long before symptoms appear, allowing for the prescription of therapies that are most effective for that specific patient. For instance, cancer treatment increasingly relies on targeted therapies customized to the unique characteristics of individual tumors, aiming to minimize side effects while maximizing therapeutic efficacy (1).

Artificial Intelligence (AI) plays a pivotal role in the future of medicine, impacting various aspects, including diagnostics, administrative workflows (such as Abridge, Medcorder, and DAX Copilot), patient monitoring, and decision support systems. The widespread interest in AI across multiple disciplines stems from its potential to enhance diagnostic accuracy, predict patient outcomes, and personalize treatment interventions.

Centralized remote patient monitoring (RPM), enabled by AI and wearable technologies, represents another rapidly growing area. Research shows that AI-enabled RPM systems can identify early signs of patient deterioration and tailor monitoring parameters accordingly. However, the implementation of these technologies presents several challenges, such as ethical considerations, the risk of bias in data and algorithms, the need for regulatory oversight, and integration into existing workflows.

Additionally, regenerative medicine is transforming healthcare paradigms by addressing symptoms and restoring structure and function through the use of stem cells, engineered tissues, biologics, and (potentially) 3D bioprinted organs. This field has the potential to shift healthcare focus from purely symptomatic treatments to curative interventions. Key advancements in cell manufacturing, biomanufacturing standards, and automation are essential to ensure that these therapies are both scalable and reliable.

Telemedicine and remote care are expanding access to healthcare, particularly in underserved and rural areas. The use of electronic health records (EHRs), digital communication tools, virtual consultations, and remote monitoring is reshaping workflows.

Technological and scientific advancements alone are insufficient without strategies that promote fairness, access, and ethical practices in healthcare. As the field of medicine continues to evolve, the education and training of clinicians and allied health professionals must also adapt. Integrating AI into medical education at both the undergraduate and postgraduate levels, as well as in continuing professional development, is becoming increasingly critical.

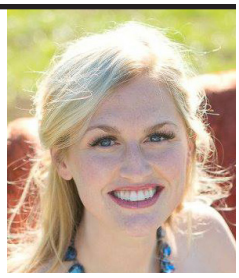
The Panhandle medical community and the PRCM Society hope to lead innovation in healthcare delivery, continually evolving and developing new methods to enhance patient care.

REFERENCES

1. Ishith S, Chang E, Rozen W, Ng S. Evaluating the clinical utility of robotic systems in plastic and reconstructive surgery: A Systematic Review. Sensors. 2025.25(10), 3238.

Our Next Issue Of
Panhandle Health
Features:
Obesity

Message from the Potter-Randall County Medical Alliance



by Alena Martin & Madeline Lennard, Co-Presidents

The Alliance just finished our signature charitable event, fitting new bicycle helmets for Panhandle kids at the NorthSide Toy Drive. At the event we were able to help over 300 children safely play and exercise using their new bikes, scooters, and roller skates. A major win, win for health all the way around. Thank you to the members who came to Palo Duro High School to help.

Following the fall Couples Social, the Alliance stocked the nurses offices at 5 area schools with hygiene supplies. We are glad to have partnered with the medical society to collect more items at the holiday party. Thank you to everyone who donated, we will make sure the items are put to good use!

We have lots of fun things happening on the horizon. Firstly, be on the lookout for an Evite to attend our private screening of Pride and Prejudice (2005), January 13th at 6 pm at Cinemark. We have a 100 seat theatre to fill so feel free to bring a friend, alliance member or not! Tickets will be $20 per person. Scan the movie QR code to purchase your tickets. Proceeds will benefit our programs and events.

It's almost Wine Dinner time again! Save the date for another incredible evening March 6, 2026 at Amarillo Club. Thanks to your generous donations and support of our dinner, we contributed $5000 to our scholarship funds in 2025. Deposits had not been made to those accounts in over 10 years! Thank you for supporting allied health, nursing, and medical students in Potter and Randall Counties. This is the best way to ensure we continue to have excellent healthcare for Panhandle residents.

Finally, it's membership renewal season. If you haven't already, please renew with TMAA online. Be sure to sign up for auto renew! To make things even easier, you can join or renew with PRCMA directly—just scan the membership QR code and pay your dues. We can't wait for another year of doing good on behalf of the Amarillo medical community.

Membership QR Code

Movie QR Code

Current Challenges for Public Health

by Scott Milton, MD, FACP

In the fall of 2021, after 25 years of practicing infectious diseases in the Texas Panhandle, I accepted the position of Region 1 Medical Director for the Texas Department of State Health Services. In my position, I function as the public health physician for our region. It is both administrative and clinical in nature and involves many activities that I've previously had very little experience with. This includes involvement in natural disasters such as tornadoes, floods, and wildfires. It also involves activities that aim to improve the health of our communities. So that's the real difference between public health and practicing infectious diseases or any other clinical practice. Public health attempts to address the health of the community and the factors that affect the overall health of our region. Since I've held this position, our region has been challenged by many unusual events including tornadoes, floods, wildfires, avian influenza--not to mention the largest measles outbreak in decades in our country! It's been a very challenging job at times. I've been able to learn about the relationships between local, state and federal health agencies. I'll attempt to describe these relationships and the current forces that are causing significant changes therein.

UNCERTAINTIES IN PUBLIC HEALTH FUNDING

The typical relationship and predictability of funding from Washington to the state and local public health entities has been essentially lost over the last nine months. As such, the final impact on public health funding from federal grants remains murky. Several of my colleagues have worked in public health for many years and tell me that, over the past decades, funding from federal grants has replaced funding previously provided by the state of Texas. From my understanding, over 50% of the Department of State Health Services budget is derived through federal grants. Events such as 9/11 and bioterrorism events such as the anthrax poisonings that occurred 25 years ago generated funding through Congress that created public health positions in preparedness and response, for example.

As a result of the current political climate (including the shutdown of the federal government), however, future funding for these aspects of public health, once provided by the state using federal dollars, remains in question. That being said, as the year 2025 has unfolded, the funding received by the state has continued and the impact to the state public health system, in terms of federal grants, has been small. It is impossible to have any insight pertaining to this previously established system of federal funding in the current political landscape.

RECENT OUTBREAKS OF COMMUNICABLE DISEASES

As mentioned in my opening paragraph, there have been many events in our region that have called upon the resources of the Texas Department of State Health Services. Two of these, the recent measles outbreak and avian flu, are communicable diseases and represent the most important mission of public health--to ensure the health of the community. There are other emerging public health threats as well, like the screwworm, Ebola and Mpox. These public health threats have not affected our region to this point, but the potential exists, in varying degrees, for all of these problems.

The recent **measles** outbreak, which was primarily located in West Texas, is the most recent and significant public health event that has affected our region and state. The outbreak was declared to be over in August 2025. A total of 762 cases of measles was confirmed in our state. There were 99 hospitalizations with 12 ICU admissions. Two children died of measles, and there has been one case of encephalitis that has led to a devastating outcome. The vast majority of the cases were in unvaccinated individuals, which is in line with the 97% efficacy of the MMR vaccine. In addition to the loss of life and misery caused by this preventable event, the cost in dollars is truly astounding. Millions of dollars were spent in response to the measles outbreak. Some studies estimate that each case of measles costs from $30,000 to $50,000, all things considered. It's astounding that, in this day of runaway medical costs, this event happened, and happened in our region and state. To compound the problem, vaccination rates in many communities in our area have fallen to levels that could lead to further outbreaks.

The first human case of **Avian flu** was diagnosed in our region as well. Avian flu, being a zoonotic infection, presents a different set of challenges for our public health resources. The dairy industry, a huge player of the Panhandle agriculture industry, was significantly impacted by this virus. A drop in milk production was one of the first signs of infection in affected dairy herds. Shortly thereafter, avian flu was detected in milk analyzed from sick animals. The response to this involved public health aspects in both animal and human health. The animal health component of this response was influenced by the potential and real economic impact of this outbreak. Much effort was made to ensure the public that dairy products were safe. The sharing of data between agricultural entities and

human health entities was often delayed, as the data were housed in different bureaucracies. Our ability to gain access to worksites was usually stymied for similar reasons. Workers were afraid of being fired, and employers at these farms were more at ease working with the USDA and Animal Health. In fact, we never knew the identity of the dairy worker we saw in our field office with conjunctivitis caused by avian flu. Much more could have been learned about worker safety if access to the victims had not been so limited.

New World screwworm is another emerging public health threat, most commonly affecting livestock, but human cases can also occur. The New World screwworm was a large problem in the U.S. in the mid-twentieth century, but eradication efforts were eventually successful in the United States. This disease has been confined to Central America until recently when it began marching north into Mexico. Currently cases of New World screwworm have been found less than 100 miles from the Texas border. Surveillance efforts have been increased and eradication efforts, which involve releasing sterile flies into outbreak zones, have continued.

The rise in vaccine preventable infections, such as previously-discussed measles and pertussis, is probably the most disheartening trend that we in public health are confronted with. This has led to more cases of all of these diseases, with children being the most impacted. At the same time, we have seen a large increase in cases of **congenital syphilis.** These women and children are often the most vulnerable in our communities. Homelessness, drug abuse, mental illness, prostitution, and human trafficking are strongly associated with congenital syphilis, and it is the innocent babies who suffer the potentially devastating consequences.

RESPONSE BY THE STATE TO THESE PUBLIC HEALTH ISSUES

Our Texas legislature, in response to this crisis, has funded a new position to our nursing staff to combat congenital syphilis. Each region has received funding to hire a nurse who will be coordinated at both the central and regional levels. In addition, a syphilis hotline is being planned to offer providers more support at the local level. The Texas Department of State Health Services hopes to have this hotline available by January 2026.

In addition to funding for congenital syphilis, new funding has also been provided to hire more sanitarians in each region, in order to address two important issues. The first is summer camp inspection regarding flood preparation. Also, the state sanitarian teams appear to be shouldering more responsibility concerning the inspection of food trucks. Therefore, plans are being made to address these issues, although these plans are in their infancy at the time of this writing.

In summary, the very concept of public health, and the expertise and science that we rely on to make evidence-based decisions, has been under assault in 2025. Federal funding is uncertain going forward, although to date the funding already allocated has been largely distributed. Many challenges will need to be addressed in the months ahead; I've mentioned a few of them. Certainly, the rise in vaccine hesitancy will tax already-limited public health resources. Let us all hope that this trend reverses and that our communities can be spared the preventable costs to society and the misery that is often borne by our most vulnerable citizens.

Dr. Scott Milton attended the University of Texas Medical School at Houston. He completed his internship and residency at the Medical College of Georgia. Dr. Milton did a Fellowship in Infectious Diseases at Vanderbilt University. He is Board Certified in Internal Medicine and Infectious Diseases and is a member of PRCMS.

State-of-the-art Stroke Management is Available in the Panhandle

by Rance Boren, MD

IV thrombolytic "clot-busting" therapy for stroke has been the standard of care for almost 30 years, but only a small fraction (5-10%) of stroke patients receive this treatment. Many patients still present outside the time window for therapy, while others have contraindications that prohibit its use. Others, however, are let down when the medical system is not sufficiently focused on providing timely care to this group. Over the last several years, Baptist-Saint Anthony (BSA) has been working to build an in-house multidisciplinary stroke response team, as well as an outreach network involving both outlying hospitals and first responders. Now, residents of the Panhandle, as well as parts of New Mexico, Oklahoma, and Kansas, are fortunate to have access to state-of-the-art care for acute ischemic stroke close to home.

When I began my neurology residency in 1993, we had nothing to offer stroke patients but sympathy and IV heparin, only the first of which was helpful. I remember the excitement when tissue plasminogen activator (tPA) was approved in 1996. Unfortunately, this met resistance from some quarters due to perceived risks, the lack of a convenient confirmatory test for acute stroke, increased demands on physician time, and years of therapeutic nihilism. Subsequent technical advances in endovascular treatments for stroke have been impressive but for years were restricted to urban specialty centers, until the number of trained interventionalists was sufficient to allow for broader geographic coverage. Hospitals have gradually recognized that coordination across multiple services and departments is necessary, following the model of acute cardiac care and trauma management. Telemedicine has helped fill in gaps where there was a shortage of providers. Now, appropriate patients should expect to receive definitive treatment within about an hour of arrival at the ER.

Notable changes in the past year include a "new" IV medication, new recommendations regarding patient selection for thrombolytic therapy, and endorsement of its use in combination with mechanical thrombectomy. Over time, there has also been continued refinement of triage systems to expedite patient access to treatment. Telemedicine, functional imaging, and artificial intelligence screening tools for radiology are all more widely available. These have the potential to lighten the burden on smaller hospitals. These changes, discussed below, have significant implications for primary care and ER physicians and their patients.

NEW CONSIDERATIONS REGARDING THROMBOLYTIC THERAPY

First, the FDA finally approved Tenecteplase (TNK) for acute ischemic stroke, after several years of widespread off-label use. Efficacy and indications/contraindications are essentially equivalent to tPA. However, this medicine is given as a brief IV push instead of an hour-long drip. This markedly eases ER workloads and allows for quicker patient disposition, including transfer if needed.

Around the same time, a meta-analysis involving almost 14,000 patients confirmed that those with mild/non-disabling strokes do not benefit statistically from IV thrombolytic therapy (1). While this population is broadly defined as having a National Institute of Health (NIH) stroke score <5, remember that an isolated language or visual disturbance, pure sensory stroke, or brainstem/cerebellar symptoms can yield a low score while still causing significant disability. Therefore, the NIH score cannot be considered in isolation but should instead be viewed in the context of the patient's pre-morbid functioning, social circumstances, occupation, hobbies, etc. The decision to treat should be driven by the anticipated degree of disability, not the NIH score. Overall, though, this information allows the focus to shift to more severely affected patients, in whom the diagnosis is often more obvious, and in whom the possible benefits seem more tangible.

On a related note, there is reasonable concern regarding mis-labeling a patient with stroke and giving thrombolytic therapy unnecessarily. TNK must be given within 4.5 hours of the onset of symptoms, and the benefit of therapy falls by roughly 10-15% with each successive 30-minute period, so rapid decisions are necessary. Fortunately, patients with stroke mimics (such as migraine, conversion disorder, or Saturday night palsy) have an extraordinarily low rate of hemorrhagic complications when treated. When there is uncertainty, many experts prefer to err the side of potential benefit rather than potential harm. This is analogous to the accepted rate for normal appendectomies (still somewhere above 10% in most centers) needed to avoid missing a necessary surgery.

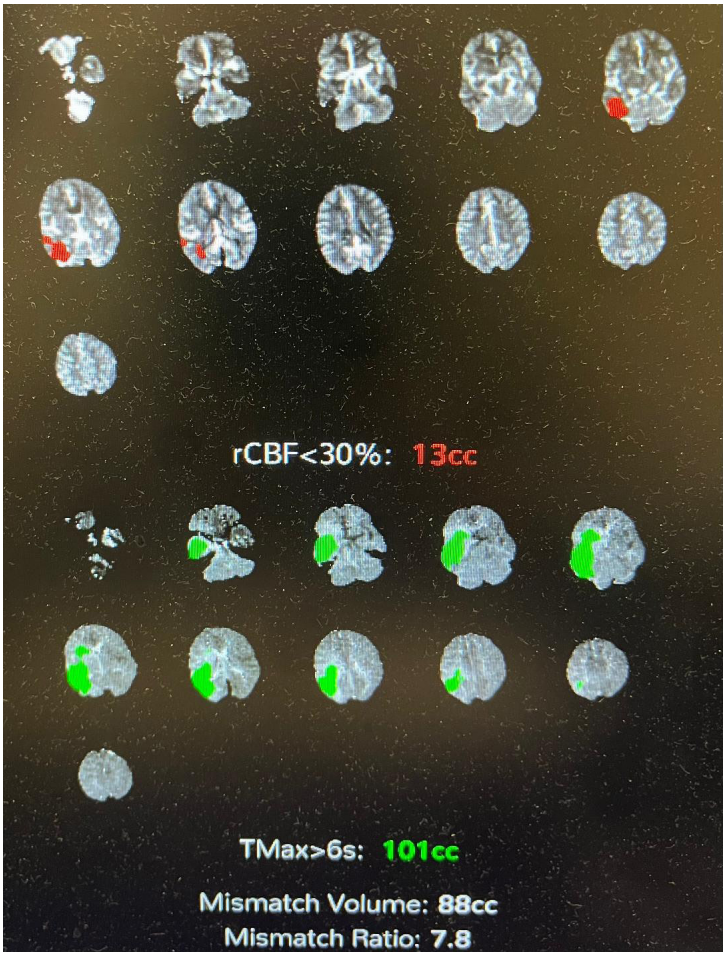
MECHANICAL THROMBECTOMY AND INTRA-ARTERIAL THROMBOLYSIS

Indications for mechanical thrombectomy have been continuously refined. Invasive interventions have gained further indications with longer pre-treatment windows, offering greater hope to the most severely affected patients (2). At first glance, this might appear to create a con-

flict between the two treatment options: Patients with large artery occlusions who present within the IV thrombolytic window may not receive it, even though they might not get thrombectomy for several hours, if at all. We have learned, however, that patients who receive both have better overall outcomes (3). This is especially relevant for patients shipped substantial distances for possible intervention, who should now receive a quick bolus of TNK before departure if they meet the criteria. This will not preclude them from getting thrombectomy a few hours later if indicated.

Any article discussing acute stroke therapy requires a discussion of liability. While TNK has risks--and concerns regarding brain hemorrhage are legitimate--there has been no doubt from the beginning that the greatest legal risk lies with withholding treatment from appropriate candidates. The key, as always, is diligence in applying selection criteria, efficient use of the time to avoid missing treatment windows, an open dialog regarding the expected risks and benefits, and good documentation. The same considerations apply to mechanical thrombectomy.

Unfortunately, many patients still present outside the 4.5-hour time window for IV thrombolysis, and still others have a contraindication related to bleeding risk. These patients remain candidates for mechanical thrombectomy and/or intra-arterial thrombolysis for up to 24 hours, depending on the clinical picture, site of obstruction, and the results of functional imaging (see below). Some local hospitals have the imaging capacity to determine the presence or absence of a large vessel occlusion (LVO) and can identify appropriate candidates for transfer. Hospitals that don't always have the option of sending the patients on for further evaluation (but not at the expense of skipping IV therapy if appropriate.)



At BSA (and some outlying hospitals) CT perfusion imaging can be performed to further assess stroke patients. This is essentially the brain version of a ventilation/perfusion lung scan or nuclear cardiac stress test. If it shows substantial tissue at risk, this can be used to justify treatment for patients who wake up with deficits or whose last known "well time" is unclear for other reasons. It is possible that the window for mechanical thrombectomy can be pushed out to 48 hours for carefully selected patients. Conversely, physiologic data from functional imaging can identify patients whose infarct is complete and who therefore are not likely to benefit from further therapy. The image below shows a typical study, with the likely infarcted brain tissue shown in red and the still-viable, but vulnerable, brain tissue with moderately reduced blood flow shown in green. The volume of the salvageable area (the ischemic penumbra) is 7.8 times that of the ischemic core infarct.

PREVENTING SECONDARY STROKES

Whether or not the patient receives some form of acute intervention, the next question (setting aside all the important rehabilitation issues) is prevention of future strokes. The three main categories of prevention are: medical therapy with antiplatelet agents or anticoagulants, consideration of carotid revascularization or cardiac procedures, and control of cardiovascular risk factors.

Thirty years ago, the accepted indications for anticoagulation were broader, with coumadin routinely used for intracranial atheromatous disease, especially in the posterior fossa, and even for cases of "aspirin failure." Now, anticoagulation is essentially restricted to clear cardioembolic indications (atrial fibrillation, mechanical heart valves, paradoxical embolism) and hypercoagulable states. The improved safety profile of direct oral anticoagulants (DOACs) allows for quicker initiation of anticoagulation after cardioembolic strokes.

Shortly after clopidogrel was released, it was studied for long term use in combination with aspirin, and the two together failed to confer additional benefit over aspirin alone. After many years, the lessons learned from acute coronary syndromes and stenting were applied to stroke: It is now evident that there is a

high-risk period in the first few weeks after a stroke during which dual antiplatelet therapy confers benefit, but after which bleeding risk predominates. Aspirin with 3-4 weeks of clopidogrel (usually with a 300 mg loading dose) is considered standard therapy following a non-cardioembolic stroke or TIA, followed by a return to aspirin monotherapy in most cases.

Carotid endarterectomy or stenting remains a mainstay of stroke prevention. Appropriate patient selection requires an accurate understanding of the benefits of revascularization. First, relatively few patients should have an endarterectomy for asymptomatic disease. For years, the Academy of Family Medicine and others have issued statements that carotid dopplers should not be obtained for syncope, "dizziness," dementia, or other non-focal symptoms, but this still occurs frequently. Moreover, traveling vascular screening companies will often include carotid dopplers in their package of services. Positive results then trigger consideration of surgery. However, in the pivotal trial of asymptomatic endarterectomy, the number-needed-to-treat (NNT) was 20 to prevent one major stroke over 5 years, when compared to a medical treatment arm that is essentially obsolete (see below.) By comparison, in the 70-99% arm of the symptomatic NASCET trial, the NNT for endarterectomy was six to prevent one event over 2 years. Most of this benefit for surgery in symptomatic patients accrues if the procedure is done within the first two weeks following a TIA or minor stroke, during the period of high risk for recurrence. Stenting is generally equivalent to surgery, but should be primarily used in patients who are poor candidates for surgery, either due to anatomic factors or anesthesia risk, though this continues to be a focus of debate (4).

Endovascular PFO closure is also an option for appropriately selected candidates with cardioembolic strokes and either large defects, recurrent strokes despite adequate medical therapy, or contraindications to medical therapy. Similarly, a number of procedures to obliterate the left atrial appendage are available to patients with atrial fibrillation who are poor candidates for anticoagulation. Another advance in management has been in the area of long-term ambulatory cardiac monitoring for detection of paroxysmal atrial fibrillation in patients with otherwise cryptogenic large-artery strokes. However, it is also unclear whether patients with relatively infrequent arrhythmia derive much benefit from anticoagulation.

The most powerful risk-reduction strategy is control of high blood pressure. Unfortunately, overall adherence with medications for the common cardiovascular risk factors of hypertension, diabetes, and hypercholesterolemia, as well as with recommendations for lifestyle modification, hovers in the 50% range or lower. Reasons for this include medication expense, side effects, lack of effective education, sociocultural barriers, and therapeutic nihilism. We should strive to do better. That said, for compliant patients, there is a striking difference between "best medical therapy" now and during the heyday of the carotid endarterectomy trials in the 80s and 90s. This has led to legitimate questions regarding the usefulness of the older studies and the need to reconsider recommendations regarding the benefits of revascularization procedures (5).

In summary, a combination of technological advances and process improvements has led to improved access to stroke care in our region. We are now able to offer the vast majority of patients the same treatments that are available at the major academic centers. In addition, the framework is in place to allow new treatments to be introduced as they become available.

REFERENCES

1. Braksick S, Rabinstein A. Thrombolysis is not indicated for minor strokes if they are truly nondisabling. Stroke. 2024 Apr;55(4):893-894. doi: 10.1161/STROKEAHA.124.046549. Epub 2024 Mar 11. PMID: 38465619.
2. Ospel JM, Holodinsky JK, Goyal M. Management of acute ischemic stroke due to large-vessel occlusion: JACC Focus Seminar. J Am Coll Cardiol. 2020 Apr 21;75(15):1832-1843. doi: 10.1016/j.jacc.2019.10.034. PMID: 32299595.
3. Qiu Z, Li F, Sang H, Yuan G, et al; BRIDGE-TNK Trial Investigators. Intravenous tenecteplase before thrombectomy in stroke. N Engl J Med. 2025 Jul 10;393(2):139-150. doi: 10.1056/NEJMoa2503867. Epub 2025 May 21. PMID: 40396577.
4. Gorey S, de Borst GJ, Nguyen TN. Carotid-Artery Stenting or Carotid Endarterectomy for Symptomatic Carotid-Artery Stenosis? N Engl J Med. 2025 Nov 6;393(18):1856-1858. doi: 10.1056/NEJMclde2505067. PMID: 41191947.
5. Donners SJA, et al. for ECST-2 investigators. Optimised medical therapy alone versus optimised medical therapy plus revascularisation for asymptomatic or low-to-intermediate risk symptomatic carotid stenosis (ECST-2): 2-year interim results of a multicentre randomised trial. Lancet Neurol. 2025 May;24(5):389-399. doi: 10.1016/S1474-4422(25)00107-3. PMID: 40252662.

Dr. Rance Boren's undergraduate degree is from Texas A&M and his MD from UT Health Sciences Center in San Antonio. He completed his neurology residency at UT Southwestern, where he was a founding member of their acute stroke team. He practiced general neurology for 26 years in Brownwood TX before retiring this summer. He now works as a neurohospitalist at BSA.

Ringing in the New Year with Maternal-Fetal Medicine in the Panhandle: Keeping families close to home with advanced pregnancy care at Texas Tech

by Shaun Wesley, MD

When I left Amarillo years ago to begin Maternal-Fetal Medicine fellowship training, I hoped that someday I would return. Amarillo is where I learned how to be a physician. It is where mentors challenged me, encouraged me, and trusted me to care for patients during vulnerable moments. Those early experiences shaped how I communicate and how I show up for people. I did not return because it was familiar; I returned because I believed something meaningful could be built here. Families in the Panhandle deserve access to high-level pregnancy care without leaving the support systems that hold them up.

MY PATH TO MATERNAL-FETAL MEDICINE

My path to Maternal-Fetal Medicine was not obvious in the beginning. I entered medical school expecting to become a hospitalist. I enjoyed the pace of inpatient medicine and the problem solving it demanded. Everything changed when I cared for my first obstetric patient during training. I followed her throughout pregnancy and delivery, and the depth of that relationship felt different from any other type of patient care I had experienced. Birth is a medical event, but it is also a transformative emotional and personal event. Later, early in residency, I counseled a mother whose fetus had severe growth restriction and a low chance of survival. She entered the room overwhelmed with fear. During counseling she began to understand what the diagnosis meant and how we would care for her. Even though the outcome was uncertain, she left the room with a plan she felt ready to face. Seeing fear replaced with determination changed me. Maternal-Fetal Medicine offered a way to practice medicine that blends expertise with empathy. From then on, I knew that this was the work I wanted to do.

When I returned to Amarillo this year as Maternal-Fetal Medicine faculty at Texas Tech, I stepped into a community already providing strong obstetric care. Many families in our region have longstanding relationships with their primary OB, and those physicians do exceptional work. Maternal-Fetal Medicine has been available here before, but the service was limited and did not function as a true referral and coordination hub. Many primary OBs shared that, when they referred patients, communication was limited, and they did not feel like they remained part of the care team. Instead of enhancing care, the referral created distance. When I returned, my focus was to rebuild trust and to design a model where Maternal-Fetal Medicine supports both the patient and the primary OB. Families deserved something better, and so did the physicians caring for them.

WHAT DOES A MATERNAL-FETAL MEDICINE SPECIALIST DO?

At Texas Tech we now have a dedicated Maternal-Fetal Medicine clinic designed specifically for complex pregnancy care. This clinic focuses on time, conversation, and clarity. Families receive detailed ultrasound with three-dimensional and four-dimensional imaging, Doppler studies, and comprehensive counseling. Diagnostic procedures such as amniocentesis and chorionic villus sampling can now be performed here in Amarillo. Patients leave with answers, not more referrals. What once required an overnight trip or flight now happens here at home.

Technology matters, but time matters more. Information is powerful only when patients understand it. Complex diagnoses generate fear and countless questions. In Maternal-Fetal Medicine, the most important thing I offer is time. I want families to slow down, ask what is on their mind, and leave with a plan that matches their values. When a patient leaves my office, she should feel like someone is walking with her through whatever comes next.

One of the changes that has transformed care this year is the collaboration between Maternal-Fetal Medicine and the neonatologists here in town. When a fetus has a condition that may require neonatal surgery or intensive care at delivery, families meet the neonatologist early. Seeing the person who will care for their baby changes the emotional experience of a difficult diagnosis. The first time a parent meets the neonatal team should not be in an operating room. It should happen during a conversation.

Another essential partnership exists between Maternal-Fetal Medicine and the patient's primary obstetrician. I view that relationship as a bridge, not a handoff. The patient does not leave her OB to become "my" patient. Instead, we build a plan together and share the responsibility of care. Some patients remain primarily with their OB, with periodic visits to Maternal-Fetal Medicine. Others see us more frequently, especially when complex monitoring or procedures are required. In every situation, the goal is the same. The patient should feel supported by both teams.

COORDINATING CARE WITH OUT-OF-TOWN CENTERS OR SUBSPECIALISTS

There are times when families need care that cannot be provided in Amarillo. Our region has strong pediatric care, but we are light on pediatric subspecialists. Some babies require evaluation or surgery

by pediatric specialists in Fort Worth, Dallas, or Houston. While my deepest hope is always that families can remain close to home, part of my role is to make the transition seamless when travel is necessary. We coordinate directly with those pediatric subspecialists, ensuring that referrals are purposeful and timed appropriately. My team sends records, facilitates communication between the outside specialists and the patient's primary OB, and helps families understand what parts of care can be completed here before travel is needed. This prevents unnecessary trips and keeps families home as long as safely possible. When the moment arrives that transfer is necessary, the handoff is organized, intentional, and clear.

Complex medical conditions frequently intersect with pregnancy in the Panhandle. We work closely with adult cardiology, nephrology, rheumatology, endocrinology, and other specialists to ensure that maternal health conditions remain well-managed during pregnancy. Coordinated care does not mean sending a patient from clinic to clinic and hoping communication happens later. It means that the right people are already talking. High risk pregnancy care should not increase confusion; it should reduce it.

Education is also part of our mission. As an academic center, we train OB GYN residents, medical students, and sonographers. We are developing an ultrasound simulation bootcamp for incoming OB GYN interns so they can learn hands-on scanning and interpretation before stepping into patient care. Many people here at TTUSOM shaped my training and invested their time in me. I feel a responsibility to do the same for the next generation. Teaching residents to practice with technical excellence and genuine empathy will have an impact long after I am no longer here.

Recently, I cared for a mother whose fetus had a significant abnormality that needed ongoing evaluation. In previous years, she would have been sent several hours away for imaging, counseling, and delivery planning. Instead, she saw Maternal-Fetal Medicine here, met the neonatologists, and had her primary OB included in the plan. At the end of the visit she said, "Thank you for letting us stay home." That moment captured exactly why returning to Amarillo mattered to me. We did not change the diagnosis, but we changed the experience of receiving that diagnosis.

Maternal-Fetal Medicine cannot eliminate uncertainty, but it can give families clarity and support. It can bring complex care closer to home. We are building a program that works in partnership with primary obstetricians, neonatologists, and pediatric specialists so families can receive the care they need with as little disruption to their lives as possible. The future of high-risk pregnancy care in the Panhandle should not depend on distance. It should grow here, where families live and where they want to stay.

Dr. Shaun Wesley is a Maternal-Fetal Medicine specialist with a passion for high-risk obstetrics, ultrasonography, and medical education. He completed his OB/GYN residency and Maternal-Fetal Medicine fellowship at the University of Rochester and is dedicated to advancing resident education and research mentorship. Outside of medicine, he enjoys spending time with his wife and four sons, playing guitar, and exploring new technologies in education.

Happy New Year

Potter-Randall County Medical Society

Physician Members

Gage Agers, DO
Anthony Joseph Agostini, DO
Kalil I. AL-Nassir, MD
Brendan C. Albracht, DO
Douglas Anthony Albracht, DO
Muhammed Farhan Ali, MD
James M. Allman, MD
Julie R. Allman, MD
Jade Garrett Anderson, MD
John Lee Andrew, MD
Carin C. Appel, MD
Antonio Venceslado Aragon, II, MD
Estelle Archer, MD
Richard K. Archer, Jr., MD
Lova T. Arenivas, MD
Alexander Woolf Armour, DO
Brent Loyd Artho, MD
Assadour K. Assadourian, MD
Donna Ayala, MD
April Alexander Bailey, MD
Christi Anne Baker, MD
Teresa E. Baker, MD
William M. Banister, MD
Kuldip Singh Banwait, MD
Luis C. Barboza, MD
George T. Barnett, MD
Perry Eugene Bassett, MD
Omar Bazzaz, MD
Sarah Emily Biggs, MD
William Curtis Biggs, MD
Kathryn Nicole Bonds, MD
Emily A. Bowen, MD
Trey C. Bowen, MD
David Brabham, DO
Ako D. Bradford, MD
Todd W. Bradshaw, MD
Kenny Maurice Brantley, MD
Victor L. Bravo, MD
Walter Joseph Bridges, MD
David Ernest Brister, MD
Bartholomew A. Britten, MD
Charles D. Brooks, MD
Anna Christella Burson, MD
Agustin Cabrera-Santamaria, MD
Maria Cristina Espera Caga-Anan, MD
Cesar Cardenas, Jr., MD
Londa Leigh Carrasco, MD
Roberto Bejarano Carrasco, MD
Debora Esther Carrizo, MD
Ricardo J. Carrizo, MD
Kade D. Carthel, MD
John R. Chandler, MD
Ashwin Chandra, DO
David Lyman Chastain, MD
David Childress, MD
Tadeusz Ciszak, MD
Abby S. Clark, MD
Crandon F. Clark, MD
Kathleen Anne Clark, MD
Summer Clark, MD
David Bruce Clarke, MD
Kelly Eileen Clements, MD
Elaine Remmers Cook, MD
Stanley D. Cook, MD
Dena L. Cornelius, MD
Dhana Ruth Cox, MD
Eric Charles Cox, MD
Sammy Lane Cox, MD
Robert Norwood Crabtree, MD
Reagan Lee Crossnoe, MD
Samuel James Cunningham, MD
Tully J. Currie, MD
Michael E. Daniel, MD
Nicole Lee Davey-Ranasinghe, MD
William Wilder Davis, III, MD
Johannes De Riese, MD
Prakash K. Desai, MD
Javier Fernando Dieguez, MD
Nam Huu Do, MD
Amber A. Dobler-Dixon, MD
Cathryn Anne Doughtie, MD
Keith Elliott Dyer, MD
John Phillip Dzik, DO
Mary Edith Anne Elhardt, MD
Aaron M. Elliott, MD
Tyler H. Enos, MD
Bret D. Errington, MD
Nolan Farmer, DO
Thahir Farzan, MD
Craig E. Fichandler, MD
Rex Albert Fletcher, MD
Ronald Wayne Ford, MD
Leonardo Forero, MD
Jeffrey L. Foster, DO
Dudley Earl Freeman, III, MD
Natalie Pardue Gaines, MD
Jonathan Paul Galassi, MD
Jennifer R. Gallagher, MD
Neetha Gandikota, MD
Jonathon Brett Gentry, MD
Mariada George, MD
Robert Evans Gerald, MD
Steven Edward Goettsche, DO
Adan Gonzalez, MD
Anuradha Srinivasa Gopalachar, MD
Ruth E. Grant, MD
Jill A. Gulizia, MD
Christopher O. Gulley, MD, JD
Tao Guo, MD
Jon Luigi Haddad, MD
Samir Hadi, MD
Paul Fereidon Hakim, MD
Michael Jay Hall, MD
Victor Vern Hands, MD
Jason Hemmerich, MD
Daniel J. Hendrick, MD
Hillary L. Hendrick, MD
Harry Marc Henson, MD
Pedro R. Hernandez-Lattuf, MD
Shannon Laissle Herrick, MD
Thomas R. Hines, MD
Shane Eugene Holloway, MD
Andrew Carl Hoot, MD
Richard C. Hopkins, MD
Debbie Pamela Hoving, MD
Genkai J. Huang, MD
Melburn Kenton Huebner, MD
James Matthew Hurly, MD
Christina Min Huseman, MD
Esther Orieaku Iheukwumere, MD
Chance Loomis Irwin, MD
Marc David Irwin, MD
Mouin Mahmoud Jaber, MD
Michael Dewayne Jenkins, MD
Paul Jew, MD
Jason K. Jones, MD
Jeff Josma, MD
Madhava Rao Kanakamedala, MD
Robert P. Kauffman, MD
Alan Wade Keister, MD
Chad M. Kennedy, MD
Mohamedaouf A. Khaznadar, MD
Richard Corvera Khu, MD
Joshua Edson Kilgore, MD
S. Caleb Kim, DO
Samuel Elam Kirkendall, MD
John Wilfert Klein, MD
Lauren Knight, MD
Christopher T. Kolze, MD
Rouzbeh Khosrovi Kordestani, MD
Megha Minesh Kureti, MD
Michael Odell LaGrone, MD, PA
Angela Beth Lampkin, MD
Jenna K. Lane, MD
David Clayton Langley, MD
Jay J. Lee, DO
Benjamin J. Leeah, MD
James R. Lemert, MD
Luke A. Lennard, MD
Anders Leverton, MD
Lisa K. Longhofer, MD
Nicole D. Lopez, MD
Angus M. Lowry, MD
James E. Lusby, MD
Lyudmyla Mykolayivna Lysenko, MD
Taghreed Nayef Maaytah, MD
Andrew Wei Chong Mak, MD
George Mekhael Maliha, MD
Gerald W. Malkuch, MD
James Brian Malone, DO
Cameron L. Manchester, MD
Michael S. Manderson, MD
Lance Steven Martin, MD
Reg C. Martin, MD
Joaquin Martinez-Arraras, MD
Sambasiva Rao Marupudi, MD
Raphael J. Mattamal, MD
Elise M. May, MD
Gregory A. May, MD
Farley Esigfei Mba, MD
Lawrence Rush McAfee, MD
Edward McCarthy, MD
Rebecca McCarthy, MD
C. Alan McCarty, MD
Deborah Burge McCollum, MD
Allan James McCorkle, MD
James Scott McCown, MD
Ryan F. McKenna, MD
Dianne Sharon McKenzie, MD
Kathryn E. McNeil, MD
David Glen McNeir, MD
Shari Orlicek Medford, MD
Nilay V. Mehta, MD
Thomas M. Mercado, MD
Thomas Edward Merriman, MD
Scott Duncan Miller, MD
John Scott Milton, MD
Sayyidda Mohammed, MD
Timothy S. Mooring, MD
Marc Moreau, MD

R. Thane Morgan, MD
Sergio E. Muniz, MD
Amanda Dawn Murdock, MD
Richard G. Murray, MD
Brian Scott Murrell, MD
Walter John Murrell, MD
Tarek H. Naguib, MD
Rajesh Nambiar, MD
Susan Lynn Neese, MD
Bo Tanner Neichoy, MD
Anastacia J. Nix, MD
Lyle J. Noordhoek, MD
Steven Kyle Norris, MD
Joshua D. North, MD
Montana J. O'Dell, MD
James T. Osteen, MD
Paul Paolung Pan, MD
Creed L. Paris, MD
James R. Parker, MD
William Andrew Parker, MD
Michael J. Paston, MD
Tanay M. Patel, MD
Patrick E. Paullus, MD
Wayne C. Paullus, III, MD
Adrian P. Pay, MD
David M. Pearson, MD
Joshua C. Penniman, MD
Robert Louis Pinkston, MD
Robert Thomas Pinson, DO
Carlos Andres Plata, MD
Frederick Dean Poage, DO
Gorden David Potter, III, MD
Liana Herrera Proffer, MD
Patrick J. Proffer, MD
Paul Lyndon Proffer, MD
Spencer A. Pruitt, MD
Nandkishore B. Raghuram, MD
Ron K. Rankin, MD
Paresh Anantray Rawal, MD
Arunava D. Ray, MD
Srini B. Reddy, MD
James Franklin Reid, MD
Mark Wayne Richardson, MD
Kevin James Rickwartz, MD
Timothy M. Risko, MD
Robert Houston Ritter, MD
Larry Clarke Roberts, MD
Donald Jack Robertson, MD
Jeri K. Rose, DO
Ryan Bradford Rush, MD
Sloan W. Rush, MD
Constantine Khalil Saadeh, MD
Armando Salcido, Jr., MD
Ruby D. Saulog, MD
Lawrence Anthony Schaeffer, MD
Daniel Lewis Schneider, MD
Joseph P. Schniederjan, MD
Matthew Bleu Schniederjan, MD
Jason Schocker, MD
Janet Maurine Schwartzenberg, MD
Rebecca J. Scott, MD
Robert James Searles, DO
Michael Dean Sennett, MD
Kaylee Jane Shepherd, MD
Isaac Siew, MD
John Brian Sims, MD
Monte Lynn Slatton, MD
Aubrey L. Smith, MD
Ryan Batson Smithee, MD
D. Gary Soya, MD
Chiyyarath V. Sreenivasan, MD
James Harry Stafford, MD
Amy Leigh Stark, MD
David S. Stevener, MD
Mark E. Stevens, MD
Randy Lee Stewart, MD
Grace Lea Stringfellow, MD
Robert Houston Stroud, MD
Anthony Leonard Stuart, MD
Sherida Suarez Dinzey, MD
Sivaram Sudhakar, MD
Janet Kay Swan, MD
Andrew Bamnjo Tatah, MD
Victor Marcus Taylor, MD
Charles Sloan Teeple, MD
Abdul Salam Thannoun, MD
David Thetford, DO
Ira L. Thomas, MD
Stephen Taylor Tidwell, DO
Lance L. Trahern, MD
Salil Kumar Trehan, MD
Keelie R. Tucker, MD
Praveen Kumar Tumula, MD
David Lindsey Tyson, MD
Lauren F. Underwood, MD
Martin Uszynski, MD
Julito Pujalte Uy, MD
Tetyana L. Vasylyeva, MD
Bradley B. Veazey, MD
Lisa Edelmon Veggeberg, MD
Neil Roger Veggeberg, MD
David D. Vineyard, MD
Travis J. Vowels, MD
Rachel Walker, MD
Kent T. Weinheimer, MD
Rachel Andrew Weinheimer, MD
Wyatt Weinheimer, MD
Cody Jim Welch, MD
Carmen Marie Werner, MD
Erica K. Wheat, MD
Jeffery Terrill Whelchel, MD
David Michael Wilhelm, MD
Seth F. Wilhelm, MD
Jamie L. Wilkerson, MD
Jacob N. Williams, MD
Sheryl Louise Williams, MD
Anwar C. Wilson, MD
Joanna D. Wilson, DO
Susan T. Wingo, MD
Thomas Sanford Winston, MD
Bindu Bhargavi Yalamanchili, MD
Chandana Yalamanchili, MD
Kishan Yalamanchili, MD
James Peter A Yhip, MD
John Martin Young, MD
Rodney B. Young, MD
Jason E. Ysasaga, MD
Lawrence Peter Zarian, MD

Physician Members (First Year In Practice)

Katie M. Alex, MD
Matthew Bigelow, MD
Chen Chao, MD
Shivani Dalal, MD
Sarah Grace Day, MD
Brooke K. Estes, MD
Ashton H. Hierholzer, MD
Colton Hoffmans, DO
Julia Magness, DO
Kaitlyn Moseley, MD
Karla Patricia Querales Nava, MD
Amar Suwal, MD
Brock W. Walker, MD

Physician Members (Life)

Masoud A. Alzeerah, MD
Leora Pate Andrew, MD
Robert Merrill Ball, MD
Bill Scott Barnhill, MD
Richard Harris Bechtol, MD
Howard Lysle Berg, MD
Gayle Holberg Bickers, MD
Bill Frank Byrd, MD
Turner M. Caldwell, III, MD
Dennis Lane Canon, MD
G. Arturo Carrillo, MD
David G. Carruth, MD
Rhodesia A. Castillo, MD
Harry J. Cazzola, MD
Ronald Lowell Chaffin, MD
Pamela Ann Chandler, MD
Jeffrey Donald Cone, MD
John L. Coscia, Jr., MD
R. H. Cox, Jr., MD
John Lewis David, Jr., MD
Lon Miles Davis, MD
Pablo Rafael Diaz-Esquivel, MD
Leonard Edwin Dodson, MD
Thomas D. Easley, MD
William Robert East, MD
William Vance Esler, MD
Richard Harold Franklin, MD
Rolf W O Habersang, MD
James Edward Hamous, MD
J. Franklin Howell, Jr., MD
Douglass Young Hyde, MD
Robert Earl Jackson, III, MD
Richard Lee Jennings, MD
Thomas L. Johnson, MD
John C. Kelleher, Jr., MD
Richard Glenn Kibbey, III, MD
Michael Alan Lary, MD
Jake Crabtree Lennard, MD
Nazre Mawla, MD
Richard F. McKay, MD
John Perry McKinley, MD
Clyde Allen Meeks, MD
Rod M. Nugent, Jr., MD
Joel Craig Osborn, MD
Robert W. Paige, MD
Virgil A. Pate, III, MD
Mahendra J. Patel, MD
Vinodkumar Somabhai Patel, MD
Phillip Q. Periman, MD
Gary Robert Polk, MD
Randal Earl Posey, MD
Brian Thomas Pruitt, MD
Harvey Mac Richey, III, DO
Miguel A. Rios, MD
Pablo S. Rodriguez-Vinas, MD
Matthew C. Scalapino, MD
Martin L. Schneider, MD
Shu Shum, MD
Earl Clifton Smith, MD
Howard Wayne Smith, MD
Rush Alexander Snyder, Jr., MD
Kent K. Sorajja, MD
James S. Spurlock, MD
Hagos Tekeste, MD
Margaret E. Thurmond-Anderle, MD
Paul E. Tullar, Jr., MD
Robert Steven Urban, MD, MACP
Aniceta Veloso Velky, MD
Bruce L. Weinberger, MD
Michael D. Williams, MD
Geoffrey Lee Wright, MD

Top 10 Takeaways from the New 2025 ACC/AHA High Blood Pressure Guideline

by Eric J. MacLaughlin, Pharm.D. and Grace Onaiwu, Pharm.D. Student

INTRODUCTION

Cardiovascular disease remains the number one killer in the U.S. High blood pressure (BP), often referred to as the "silent killer," (since many people are unaware that they have it) is the most common form. According to the 2025 AHA Heart Disease and Stroke Statistics, an estimated 122.4 million adults in the United States age 20 and older have hypertension, and 38.0% do not know they have it (1). In 2022, 131,454 deaths were attributable primarily to hypertension, and it is the number one modifiable risk factor for the development of cardiovascular diseases, including stroke, coronary artery disease, atrial fibrillation, dementia, chronic kidney disease, heart failure, and all-cause mortality (1,2).

In 2017, the American College of Cardiology (ACC) and American Heart Association (AHA) released the first comprehensive hypertension guideline not developed by the federal government. The 2017 guideline made significant changes in blood pressure classification, thresholds for drug therapy, blood pressure goals, and initial management (3). On August 14, 2025, the ACC/AHA released a new evidence-based guideline with updated recommendations.

The following list is the top 10 takeaways from the 2025 ACC/AHA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults.

1. CLASSIFICATION OF BLOOD PRESSURE STAYS THE SAME.

In the 2025 ACC/AHA guideline, BP staging and classification remains unchanged, with four main categories: normal (systolic BP <120 mm Hg and diastolic BP <80 mm Hg), elevated (systolic BP 120-129 and diastolic BP <80 mm Hg), stage 1 hypertension (systolic BP 130-139 mm Hg or diastolic BP 80-89 mm Hg), and stage 2 hypertension (systolic BP >140 mm Hg or diastolic BP >90 mm Hg) (2). These classifications are based on an average of two or more readings obtained on two or more separate occasions.

While BP classification has remained the same, there have been some changes in the terminology for hypertensive crises. Hypersensitive urgency has been replaced with "severe hypertension" and is defined as a systolic BP >180 mm Hg or a diastolic BP >120 mm Hg without evidence of target organ damage (2). "Hypertensive emergency" remains defined as severe elevations in BP (i.e., >180 mm Hg/120 mm Hg) with evidence of target organ damage.

2. BLOOD PRESSURE GOALS REMAIN <130/80 MM HG FOR MOST PATIENTS.

The 2025 guideline continues to recommend a BP goal of < 130/80 mm Hg for most patients (2). However, the new guideline adds an "encouragement" to achieve a systolic BP <120 mm Hg in order to reduce the risk of CV events and total mortality in patients with elevated CVD risk and to reduce the risk of further BP elevations.

3. NEW CARDIOVASCULAR RISK CALCULATOR.

The 2017 guidelines recommended the use of the Pooled Cohort Equation (PCE) to estimate the 10-year risk of atherosclerotic cardiovascular disease (ASCVD) in order to establish the BP threshold for treatment in primary prevention patients (3). Based on more recent data, the new guideline recommends using the Predicting Risk of CVD EVENTs (PREVENT) equation, which was derived from a larger and more diverse patient population (2). The PREVENT equation stratifies ASCVD risk into high risk (≥7.5%) and low risk (<7.5%) categories. Studies have shown that it is superior to the PCE, as it integrates measures of kidney function, a social deprivation index, hemoglobin A1c, and statin therapy as predictors, and applies to a broader population.

The 2017 guideline recommended initiating nonpharmacological therapy for adults with elevated BP or stage 1 hypertension and a 10-year ASCVD risk of <10% unless BP rose to stage 2 or additional risk factors developed for initiating drug therapy (i.e., if the 10-year risk increased to >10%, if DM or chronic kidney disease developed) (3). The 2025 guideline recommends initiating antihypertensive medications in addition to lifestyle changes in low-risk patients (i.e., no diabetes, chronic kidney disease, or PREVENT score >7.5%) if BP remains elevated after a 3-to-6-month trial of lifestyle interventions (2). This recommendation is based on studies that have demonstrated lower rates of progression to stage 2 hypertension and end-organ damage in patients with elevated BP who were randomized to diuretic treatment or placebo following a 3-month period of lifestyle intervention.

4. GET OUT-OF-OFFICE BP READINGS.

The new guideline continues to recommend using out-of-office readings for the diagnosis of hypertension and the longitudinal titration of antihypertensive medications. This recommendation was based on evidence supporting the reliability of home BP monitoring in making treatment decisions (2). However, the out-of-office BP measurement device must be

validated or verified as accurate, and the appropriate size cuff should be used. This is because a standard-sized cuff can give falsely high readings in patients with large arms. When wrapped around the patient's arm, the far end of the cuff should be "within range" as indicated by markings on the cuff. Furthermore, based on available studies, the use of cuffless BP devices is not generally recommended at this time for the diagnosis or management of hypertension.

5. REMOVAL OF RACE-BASED RECOMMENDATIONS.

The 2017 guideline recommended that initial antihypertensive treatment in black adults with hypertension but without heart failure or chronic kidney disease should include a thiazide-type diuretic or calcium channel blocker when used as monotherapy (3). This recommendation was based on the ALLHAT trial, which was a randomized, double blind, active-control trial in 33,357 patients that found a significant differential effect for combined CVD, stroke, and BP control in black versus nonblack patients when treated with lisinopril compared to chlorthalidone or amlodipine (4). Subsequent trials have shown that, when more than one agent is used together, any differences go away, and that most patients require two or more antihypertensive medications to achieve BP control. The 2025 guidelines removed the race-based treatment recommendation. That is to say, when used in combination with another agent, ACE inhibitors or ARBs are acceptable choices in black patients.

6. OBESITY AND USE OF GLP-1S.

Obesity is a major modifiable risk factor for hypertension, with greater degrees of adiposity associated with higher BP levels (2). Evidence consistently demonstrates that BP reduction correlates with the amount of weight loss, with a reduction of approximately 1/1 mm Hg for each kilogram of weight loss. The new guideline proposes that, in adults with hypertension who are overweight or obese, the use of incretin mimetics or bariatric surgery for weight management may be effective as an adjunct to lower BP in certain situations, as studies have demonstrated significant BP reductions with their use.

7. IDEALLY, NO ALCOHOL.

While some alcohol (in particular, wine) use has long been thought not to increase CV risk or even to be cardio-protective, more recent evidence has shown that there is a linear, positive association between baseline alcohol intake and changes in BP over time (1). The previous guideline recommended a reduction to <2 drinks per day for men or <1 drink per day in women in patients who consume alcohol. (3). While that suggested limit remains in the new guideline, abstinence is now encouraged, based on studies that have shown that the risk for incident hypertension is lowest for those who abstain from alcohol use and that BP reduction correlates with the percent reduction in alcohol intake (2).

8. IF YOU USE SALT, MAKE IT A SALT SUBSTITUTE.

Sodium intake is positively associated with BP, and increased salt sensitivity disproportionately increases BP (2,3). The new guideline recommends sodium reduction to an optimal goal of <1,500 mg per day for adults with elevated BP or hypertension, which is consistent with the prior guideline (3). In addition to sodium restriction, the new guideline proposes that potassium-based salt substitutes can be useful for blood pressure control, particularly in patients whose salt intake primarily comes from home food preparation or flavoring (2). There is a linear dose response of BP to sodium intake manipulation, and potassium intake is inversely related to BP (2,3).

9. SCREENING FOR HYPERALDOSTERONISM.

Hyperaldosteronism is a common form of secondary hypertension with a prevalence of 5% to 25% (2). The 2017 guideline recommended screening for primary aldosteronism in patients with resistant hypertension or hypokalemia. However, recent studies have shown that hypokalemia is not an adequate way to detect hyperaldosteronism. The 2025 guideline recommends screening (usually with plasma aldosterone/renin ratio) in these additional groups: patients with diuretic-induced hypokalemia, obstructive sleep apnea, known adrenal mass, positive family history of early-onset hypertension, or early-age stroke. The guideline also recommends that screening be "considered" for all patients with stage 2 hypertension. Patients with correctly diagnosed and treated secondary hypertension may experience marked improvements in BP control and a reduction in the risk of cardiovascular disease (2).

10. NEW OPTIONS FOR RESISTANT HYPERTENSION.

The 2017 guideline recommended the use of spironolactone for resistant hypertension based on data that demonstrated its advantage compared with other second-line drug classes (3). The 2025 guideline provides additional treatment options for resistant hypertension. In adults with uncontrolled resistant hypertension who cannot tolerate or have contraindications to mineralocorticoid antagonists, the addition of amiloride or a dual endothelin receptor antagonist (aprocitentan) is considered reasonable to control BP (2). In selected patients with resistant hypertension despite optimal treatment, the new guideline proposes that renal denervation may be considered as an adjunct to pharmacotherapy and lifestyle modification to reduce BP, as trials have shown a small but significant reduction in 24-hour ambulatory systolic BP (2).

CONCLUSION

Hypertension is the most prevalent modifiable CVD risk factor and remains a leading cause of death (2). The recently published 2025 ACC/AHA High Blood Pressure guideline includes several changes based on evolving science and understanding of hypertension management, particularly in risk-assessment and the management of secondary and

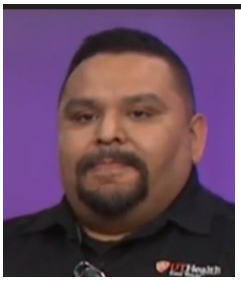
resistant hypertension. The new guideline continues to emphasize approaches for improving BP control through monitoring, assessment, improved adherence, and a team-based approach to hypertension management. Additional research is needed for more effective implementation strategies within and outside the health care system to control BP and reduce CVD risk (2).

REFERENCES

1. Martin SS, Aday AW, Allen NB, et al. 2025 Heart disease and stroke statistics: a report of US and global data from the American Heart Association. Circulation. 2025;151(8):e41-e660. doi:10.1161/CIR.0000000000001303
2. Writing Committee M, Jones DW, Ferdinand KC, et al. 2025 AHA/ACC/AANP/AAPA/ABC/ACCP/ACPM/AGS/AMA/ASPC/NMA/PCNA/SGIM guideline for the prevention, detection, evaluation and management of high blood pressure in adults: a report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. Hypertension. 2025;82(10):e212-e316. doi:10.1161/HYP.0000000000000249
3. Whelton PK, Carey RM, Aronow WS, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Hypertension. 2018;71(6):e13-e115. doi:10.1161/HYP.0000000000000065
4. Officers A, Coordinators for the ACRGTA, Lipid-Lowering Treatment to Prevent Heart Attack T. Major outcomes in high-risk hypertensive patients randomized to angiotensin-converting enzyme inhibitor or calcium channel blocker vs diuretic: the antihypertensive and lipid-lowering treatment to prevent heart attack trial (ALLHAT). JAMA. 2002;288(23):2981-97. doi:10.1001/jama.288.23.2981

Dr. Eric MacLaughlin is a University Distinguished Professor and Chair of the Department of Pharmacy Practice at the TTUHSC Jerry H. Hodge School of Pharmacy. Dr. MacLaughlin practices with the TTUHSC Department of Family and Community Medicine, providing team-based comprehensive medication management services for patients with high blood pressure, diabetes, and other chronic diseases. His teaching, practice, and research focus on chronic cardiovascular diseases, particularly high blood pressure, and team-based care. He has published extensively on the management of hypertension and was the pharmacist member of the 2017 ACC/AHA Guideline Writing Committee for the Prevention, Detection, and Management of High Blood Pressure in Adults.

Grace Onaiwu is a fourth-year pharmacy student at TTUHSC Jerry H. Hodge School of Pharmacy, Amarillo, TX. She is originally from Nigeria and grew up in Frisco, Texas, where she obtained an undergraduate degree in biochemistry from the University of Texas at Dallas. As a pharmacy student, her roles include academic tutor and student ambassador; in addition, she is a part of the Honors in Research Program.



The Texas Panhandle Welcomes ECMO

by Mario A Padilla, MSN, APRN, AGACNP-BC, CCRN, FCCS
ECMO Program Director at UT Health East Texas, Tyler

MY FIRST ENCOUNTER WITH ECMO

I vividly recall my first encounter with a patient on ECMO (extracorporeal membrane oxygenation). The new Chief of Cardiac Surgery had emergently initiated therapy with plans for surgical intervention and recovery. The nursing staff was uncertain of what to expect—this was our hospital's first ECMO experience. We sought advice from other ECMO services for management, guidance, and troubleshooting. Just weeks later, the patient made a remarkable recovery and was discharged home—a testament to ECMO's potential.

As a cardiovascular nurse in a high-volume academic transplant center, I believed we offered patients every possible advanced therapy. That perspective shifted dramatically after our first ECMO case. From that day forward, I recognized ECMO as a transformative approach for patients in extremis. It became my personal goal to learn all I could about ECMO and to become an ECMO Advanced Practice Provider.

WHAT IS ECMO?

Extracorporeal membrane oxygenation or ECMO (pronounced "EK-moh") circulates blood outside the body through an artificial gas-exchange membrane. Depending on the configuration, ECMO supports either lung function alone (veno-venous, or V-V) or both heart and lung function (veno-arterial, or V-A). Each mode aims to meet the patient's metabolic needs in order to sustain physiologic homeostasis.

ECMO requires inserting two large-bore cannulas into major blood vessels, depending on the selected mode. The venous cannula drains blood from the patient, directing it to a pump, often referred to as an "artificial heart." This pump propels blood through an oxygenator at flows of 2.5 to 7.0 liters per minute. Within the oxygenator, carbon dioxide is removed and oxygen is added, transforming dark venous blood into bright red, oxygen-rich arterial blood before it returns to the patient.

WHO IS ECMO FOR?

V-V ECMO is indicated for patients with severe respiratory failure unresponsive to conventional therapies, such as those with viral or bacterial pneumonia or traumatic lung injury leading to acute respiratory distress syndrome (ARDS). V-V ECMO is offered to patients who fail to respond to conventional management.

V-A ECMO supports patients requiring both cardiac and pulmonary assistance, such as those with cardiac arrest, extensive myocardial infarction, viral cardiomyopathy, or massive pulmonary embolism, conditions collectively classified as cardiogenic shock. V-A ECMO most commonly offered to patients in SCAI cardiogenic shock stages D (deteriorating) or E (extremis) who fail to respond to conventional management (1).

ECMO is not solely a salvage therapy; it can serve as a bridge to recovery, offering time for healing. ECMO provides the critical time needed for recovery during hospitalization. Rossong et al. reported 5-year survival rates of 73% for V-A ECMO and 71% for V-V ECMO, demonstrating its long-term efficacy (2).

In 2023, the American Heart Association reclassified ECMO as a Class of Recommendation 2a, Level of Evidence B-R, aligning it with epinephrine administration for cardiac arrest (3). Extracorporeal CPR (ECPR), used for refractory cardiac arrest, has demonstrated survival-to-discharge rates reaching 31% (4).

SCREENING OF ECMO CANDIDATES

ECMO is not appropriate for every patient. Optimal outcomes require careful patient selection. It is important to take into consideration patient selection and to have a plan set before implementing. The following four questions are proposed when evaluating a patient for ECMO.

1. What is the underlying pathology and is it reversible?

Identifying the underlying pathology is necessary for establishing a treatment plan. ECMO can provide the time required to complete treatment and return the patient to baseline prior to their illness, if the disease process is potentially reversible

2. What type of support mode is indicated, V-V or V-A?

Establishing an initiation strategy is just as important. Implementing the incorrect support mode exposes the patient to compounded risks and unfavorable outcomes.

3. What is the exit strategy?

Identifying an exit strategy prior to initiation of ECMO provides the care team with an end-target to liberation from support. The patient may recover from ECMO, use it as a bridge to surgery or to transplant, or be a candidate for long-term mechanical device support.

4. What are the exclusion criteria?

This may seem like rhetorical question, but high-stress situations can cloud the providers judgement. Should a patient meet exclusion criteria it's because they have irreversible pathology, are DNR, or are experiencing multiorgan failure with no options for recovery.

All potential ECMO candidates should be screened prior to initiating support. The outlined questions can guide both newly established programs and high-volume ECMO centers.

ECMO REINTRODUCED

Although ECMO is decades-old therapy, modern technological advances have revitalized its use. Proven successful in neonatal and pediatric populations, adult ECMO once carried a poor reputation. Earlier issues, including limited durability and high complication rates, have improved with new pumps, oxygenators, and circuits designed for prolonged support.

Pandemics such as H1N1 and COVID-19 accelerated the innovation of more sophisticated pumps. Manufacturers focused on patient outcomes, introducing sensor-integrated pumps that provide precision medicine and better patient management. ECMO consoles were made to be more compact, user friendly, and portable. Some pumps are now smaller than an airplane carry-on luggage and ideal for transport. The surge in demand also expanded domestic production and increased competition among manufacturers. According to the ELSO Center Directory (2025), there are approximately 236 registered ECMO centers in the United States—double the number of a decade ago. This growth reflects technological progress, successful clinical outcomes, and greater access to implementation resources. However, national demand still exceeds the availability of ECMO beds, trained providers, and regional centers, particularly during surge events.

WHAT DOES ECMO MEAN FOR THE PANHANDLE?

ECMO is no longer confined to large academic transplant centers. Regional hospitals can now deliver ECMO locally, ensuring timely access to life-saving support. For patients in extremis, ECMO provides critical time for patients to heal and for clinicians to treat underlying causes. ECMO also enables safe transfer of a critically-ill patient to tertiary or quaternary centers when advanced care is required.

For the Panhandle, ECMO can change outcomes for conditions such as massive myocardial infarction, catastrophic obstructive pulmonary embolism, or severe pneumonia requiring prolonged ventilatory support. It can sustain patients suffering cardiac arrest, hypothermia, or other reversible causes of circulatory collapse. ECMO may also bridge patients to heart or lung transplantation.

For the Panhandle, ECMO represents both a second chance and the ability to keep patients close to home. When every minute matters, ECMO can provide early stability needed for survival and recovery. It also enhances access to advanced healthcare resources and complements existing high-risk procedural services.

THE HALO EFFECT

ECMO implementation brings new challenges and opportunities across disciplines—from first responders to nurses, physicians, and administrators. It enhances skills, knowledge, and confidence, elevating the overall quality of care. Institutional leadership acknowledges the recommendations for developing a successful ECMO program by recruiting trained ECMO providers, investing in equipment for management, and expanding of current infrastructure. This "halo effect" extends beyond ECMO patients, improving outcomes for other critically ill populations through shared expertise, continuing education, and team development.

THE NEED

Baptist St. Anthony's Hospital (BSA) has answered the need for ECMO in the Panhandle. BSA now provides ECMO services for the region, equipped with the latest technology and the capacity to support up to eight patients during surge events. BSA has invested in advanced training and has partnered with reputable ECMO experts for ongoing education.

As part of the Ardent Health network, BSA now collaborates with three surrounding regional ECMO centers, including UT Health East Texas Tyler within the Lone Star Region. Through these partnerships, BSA now connects its community to a broader network of quaternary and transplant centers across Texas, bringing a higher level of care closer to home.

REFERENCES

1. Naidu SS, Morrow DA, Hoover L, et al. SCAI SHOCK stage classification expert consensus update. J Am Coll Cardiol. 2022;79(9):933-946.
2. Rossong H, Debreuil S, Yan W, Hiebert BM, Singal RK, Arora RC, et al. Long-term survival and quality of life after extracorporeal membrane oxygenation. J Thorac Cardiovasc Surg. 2023;166:555–66.
3. Perman SM, Elmer J, Maciel CB, Uzendu A, May T, Mumma BE, et al. 2023 American Heart Association focused update on adult advanced cardiovascular life support. Circulation. 2024;149:e254–e273.
4. Extracorporeal Life Support Organization (ELSO). ELSO Live Registry Dashboard of ECMO Patient Data. 2025. Available from: https://www.elso.org/registry/elsoliveregistrydashboard.aspx.

Mario Padilla is an Acute Care Nurse Practitioner and the Director of the ECMO Program at UT Health East Texas, bringing more than 20 years of experience in cardiovascular critical care. A native of East Texas, Mario began his nursing career in the early 2000s, before advancing his career path at Angelo State University and Texas Tech University. His expertise in ECMO and mechanical circulatory support was cultivated at Baylor University Medical Center in Dallas, where he contributed to a nationally recognized Platinum Center of Excellence. Mario has led and supported multiple initiatives to improve ECMO quality, research, and accessibility across Texas and internationally. Mario is dedicated to expanding lifesaving ECMO therapy, strengthening multidisciplinary collaboration, and elevating care for the most critically ill patients in the community he proudly calls home.

Advances in Pediatric Intensive Care

by Spencer Pruitt, MD

Last week while watching *Only Murders in the Building*, I noticed that Téa pulled out a digital camera in a pivotal scene. Remarking on this to my children, one replied, "Yeah, dad. It's the new thing. Teens want the old look of photos that a separate camera can do." The succeeding conversation allowed me to highlight how cameras were once ubiquitous, yet after the advent of the first iPhone are now a passing curiosity. Technology in the world of pediatric critical care has similarly changed the landscape greatly over the last decade and continues to do so.

Technological innovation in pediatric critical care largely follows similar paths as modern society and often lags behind adult critical care by five to ten years. Nonetheless, some exciting things are happening in the realm of vaccines, cardiopulmonary resuscitation, and traumatic brain injury care.

ADVANCES IN THE CARE OF CHILDREN WITH RSV

As a first-year fellow at Texas Children's Hospital, I vividly remember walking into the Pediatric Intensive Care Unit (PICU) one winter morning and seeing cribs in the hallway, filled with young infants on high-flow oxygen. The famous phrase "Winter is coming" had turned into "Winter is here." I realized I was in for a long day, as Respiratory Syncytial Virus (RSV) had hit in earnest, and we had more patients in the PICU than beds. RSV is one of the leading causes of morbidity in children under 1 year of age (as well as in the elderly). It is the most common cause of hospitalization for respiratory illness in the first year of life and is a main reason for admission to the PICU. Its effects can be life-long, as RSV infection in the first year of life increases the rate of asthma later.

Winter of 2024 was the first season that Beyfortus (nirsevimab), a new RSV "vaccine", became available for widespread use. RSV vaccines have been a focus of research for over a decade but have remained elusive. Prior to this, Synagis (palivizumab) had been the mainstay of protection for young infants against RSV. Although both of these products are called "vaccines" in the mainstream literature, they are not really vaccines (1). They are monoclonal antibodies that provide passive immunization against the virus. Whereas a vaccine provides "active" immunization--training your immune system to recognize and fight off infection in the future--"passive" immunization provides extra antibodies to protect against the next infection, but then go away, without conferring lasting protection. Think of them as hiring one-time mercenaries versus training your own standing army.

The problem with palivizumab was two-fold. First, palivizumab only lasts for approximately one month. In order to protect an infant or young child, a physician needs to administer five or six shots over the course of the RSV season. Secondly, the cost of each dose ranges from $1500-$2750. This can be incredibly cost-prohibitive, as insurance companies balk at a $7500-$15000 price tag for protecting infants (even though one hospitalization would be far costlier). If not covered by insurance, this cost is too high for most families in the United States.

Nirsevimab tackled both of these problems. It is a more palatable option to parents and physicians because it lasts approximately five months. It is far easier to get one shot in October or November and have it last through the winter than it is to get a patient back in your clinic monthly for follow-up shots. In addition, each dose of nirsevimab costs $500-$600, 15-30x more cost effective. Insurance companies are far more likely to cover it, and, if not, parents are better able to pay out of pocket for the dose.

Nirsevimab is approved for all children less than 8 months of age with few exceptions, the main one being if the child's mother received maternal RSV vaccine in pregnancy in a specific window of time. It is also approved for medically complex children aged 8 - 19 months, defined as those with chronic lung disease of prematurity, a severe immunocompromised state, cystic fibrosis, or American Indian or Alaskan Native ancestry. Most importantly, nirsevimab has been highly effective. Data from the first winter in 2024 showed almost 80% reduction in hospitalization due to RSV! Obviously, this is a game-changer for the overflowing PICUs around the country, and we hope to see dividends in decreasing asthma incidence over the next 10-20 years.

NEW CPR GUIDELINES

When people think of the pediatric intensive care unit, they think of ventilators and cardiopulmonary resuscitation (CPR). CPR in children is guided by standards for Pediatric Basic Life Support (PBLS) for bystanders outside the hospital, and Pediatric Advanced Life Support (PALS) for healthcare providers in the hospital. Over 7,000 out-of-hospital cardiac arrests and 20,000 in-hospital cardiac arrests occur in children each year. Survival to hospital discharge from pulseless in-hospital cardiac arrest has increased from 19% to 44% over the last 20 years or so, but has plateaued since 2010 (2). Recent advancements have changed how we deliver lifesaving care to children.

The American Heart Association (AHA) and the American Academy of Pediatrics (AAP) recently updated pediatric CPR guidelines for the first time in five years. A few notable changes impact the critical care of children outside and inside the hospital. Bystander CPR has not appreciably changed except that the new algorithms highlight the fact that pediatric BLS is for infants until puberty (3). After puberty, a young man or woman should be resuscitated following adult BLS guidelines, even if under 18 years of age. This is different from in the hospital resuscitation efforts with PALS. PALS applies to all patients less than 18 years of age who aren't newborns (whose care is governed by Neonatal Resuscitation guidelines).

In-hospital resuscitation efforts should continue to focus on early defibrillation for shockable rhythms and early epinephrine for non-shockable rhythms. Improved post-cardiac arrest outcomes are associated with higher blood pressures, so blood pressure goals for the post-cardiac arrest period have increased from 5th percentile to 10th percentile (2). Targeted temperature management is another cornerstone of cardiac arrest resuscitation and is highlighted in the new guidelines with the specific goal of maintaining body temperature less than 37.5°C. The landmark Therapeutic Hypothermia after In-Hospital Cardiac Arrest in Children (THAPCA) trial, published in the New England Journal of Medicine in 2017, strongly suggested that preventing hyperthermia was more important for comatose pediatric patients than intentionally cooling them (4). This was updated in the 2020 PALS guidelines with a suggestion to avoid hyperthermia. The 2025 guidelines provide a stronger recommendation with a specific temperature target. Finally, new PALS guidelines on resuscitation of Supraventricular Tachycardia (SVT) suggest that SVT refractory to vagal maneuvers, IV adenosine, and electrical synchronized cardioversion should be treated with IV Sotalol when expert consultation is not available (2).

NEW CLARITY ABOUT END-OF-LIFE DECISIONS IN THE PICU

One of the most solemn duties of a pediatric critical care physician is to guide a family through end-of-life decisions for their child, especially when issues of brain death and possible organ donation are involved. For many years, the criteria guiding the declaration of brain death had not changed. Recently, the American Academy of Neurology (AAN), AAP, Child Neurology Society (CNS), and Society of Critical Care Medicine (SCCM) published updated guidelines for the determination of brain death and care of adults and children (5).

Care of the neurologically injured child focuses on timing from injury, avoiding of confounding situations, delineating the parameters for performing a brain death exam, and informing the family and care team of the outcomes of that exam. The brain death process requires two exams done by two different physicians. Previously, timing was separated based on the age of the child. Infants less than one month of age needed to wait at least 24 hours from injury before brain death procedures were initiated. These exams were then to be separated by 24 hours. For any child older than one month of age, after waiting 24 hours from injury, each exam could be separated by 12 hours (6).

The new consensus guidelines build on data arguing for greater time to delineate if a child's brain will heal. Because a child's brains is more plastic and has some ability to "rewire" after injury, we wait for 48 hours from time of injury for any child under 2 years of age and 24 hours for any child over 2 years old. Regardless of age, the two exams for brain death declaration should now be separated by 12 hours.

Brain death exams include examination of cranial nerves as well as apnea testing, where the physician disconnects the patient from mechanical ventilation and watches to see if the patient has spon-

taneous breathing. Any breathing aborts the test, and the patient is not brain dead. Previously, apnea testing only had to be done by one of the two examiners. The new guidelines are more strict. Apnea testing should now be done by each examiner, and there are specific criteria for total pCO2, rise of pCO2, and pH that must be met for the apnea test to be valid, in addition to no breathing witnessed.

Sometimes ancillary tests are used to help delineate brain death in a pediatric patient. Historically, those tests have included electroencephalography (EEG), radionuclide cerebral scintigraphy (colloquially often called the "brain death scan"), and 4-vessel catheter angiography. An ancillary test can provide some peace of mind to parents and other family members who see their child lying peacefully in the PICU and cannot understand how the brain could have no activity. These studies can show the absence of blood flow to the brain in a visual way that can help provide closure, and, more importantly, should be used if the patient is too unstable to successfully undergo apnea testing. The new guidelines eliminate EEG as a possible option, and say that other commonly used tests in adults, such as transcranial doppler ultrasonography, are not validated in children and should not be used. In practicality, the radionuclide scan, which is simple and easy to perform, has become the "go-to" ancillary test. These consensus guidelines now put that into writing (5).

The last two years have seen dramatic change in the world of pediatric critical care. It has been a great honor to represent Texas Tech University and to work with the amazing and dedicated people at BSA Hospital and Northwest Texas Hospital to update protocols and ensure that the children of the Panhandle receive the most modern, data-driven, compassionate care possible. It truly allows us to merge our West Texas hospitality and Panhandle ingenuity with cutting-edge academic medicine. Perhaps next time I speak with my children about the passing curiosity of digital cameras, I can tell them about amazing things in pediatric critical care medicine as evidence that some changes are more than just passing fancies.

REFERENCES

1. RSV Immunization Frequently Asked Questions [Internet]. American Academy of Pediatrics. [cited 2025 Nov 01]. Available from: https://www.aap.org/en/patient-care/respiratory-syncytial-virus-rsv-prevention/rsv-frequently-asked-questions/?srsltid=AfmBOoqC-1pfFsiPBpClQsy8Wc6kJ_8C1WEIfUnpc0zYzMcMBEzv6UWi

2. Lasa JJ, Dhillon GS, Duff JP, Hayes J, Kamath-Rayne BD, Levy A, et al. Part 8: Pediatric Advanced Life Support: 2025 American Heart Association and American Academy of Pediatrics guidelines for cardiopulmonary resuscitation and emergency cardiovascular care. Pediatrics. 2025. https://doi.org/10.1542/peds.2025-074351

3. Topjian AA, Raymond TT, Atkins D, Chan M, Duff JP, Joyner BL, et al. Pediatric Basic and Advanced Life Support Collaborators. Part 4: Pediatric Basic and Advanced Life Support 2020 American Heart Association guidelines for cardiopulmonary resuscitation and emergency cardiovascular care. Pediatrics. 2021 Jan;147(Suppl 1):e2020038505D. doi: 10.1542/peds.2020-038505D. Epub 2020 Oct 21. PMID: 33087552.

4. Moler FW, Silverstein FS, Holubkov R, Slomine BS, Christensen JR, Nadkarni VM, et al. Therapeutic hypothermia after in-hospital cardiac arrest in children. N Engl J Med. 2017 Jan 26;376(4):318-329. doi: 10.1056/NEJMoa1610493. Epub 2017 Jan 24. PMID: 28118559; PMCID: PMC5310766.

5. Greer DM, Kirschen MP, Lewis A, Gronseth GS, Rae-Grant A, Ashwal S, et al. Pediatric and Adult Brain Death/Death by Neurologic Criteria Consensus Guideline. Neurology. 2023 Dec 12;101(24):1112-1132. doi: 10.1212/WNL.0000000000207740. Epub 2023 Oct 11. Erratum in: Neurology. 2024 Feb 13;102(3):e208108. doi: 10.1212/WNL.0000000000208108. PMID: 37821233; PMCID: PMC10791061.

6. Kochanek PM, Carney N, Adelson PD, Ashwal S, Bell MJ, Bratton S, et al. Guidelines for the acute medical management of severe traumatic brain injury in infants, children, and adolescents--second edition. Pediatr Crit Care Med. 2012 Jan;13 Suppl 1:S1-82. doi: 10.1097/PCC.0b013e31823f435c. Erratum in: Pediatr Crit Care Med. 2012 Mar;13(2):252. PMID: 22217782.

Dr. Spencer Pruitt is Chief of Pediatrics and Medical Director of the Pediatric Intensive Care Unit at Northwest Texas Hospital. He is also Associate Program Director for the Pediatric Residency Program and Assistant Professor of Pediatrics at Texas Tech University Health Sciences Center - Amarillo. As president of Pediatric Critical Care Specialists, LLC, he provides ICU services around the country for major children's hospitals such as Children's Nebraska. Dr. Pruitt has extensive experience creating hospital and public policy, and is actively involved in medical education, organized medicine, and high-fidelity simulation training. Outside of medicine, he and his wife enjoy traveling to new destinations and watching their children run cross country, play softball, and figure skate.

On the Current State of HIV and AIDS

by Flint Smith, MD

Few microbes have seized and held the cultural consciousness the way HIV has since the emergence of the AIDS epidemic in 1981, when a group of otherwise healthy males who were sexually active with other males were found to have opportunistic infections with *Pneumocystis jirovecii*. Researchers and physicians have made significant strides in the treatment of HIV/AIDS, and the field remains ever-evolving. Any practicing clinician is likely to encounter the infection on a regular basis; so a working knowledge of HIV basics is important for optimal patient care. Here, we will briefly explore some topics in HIV care that I expect will serve the general practitioner well in patient care.

NEW CASES OF HIV STILL OCCUR

Perhaps the most important things to remember with regard to HIV in daily practice are an awareness that new cases are still occurring and the understanding of how social determinants of health play a role in the incidence of HIV and in the stigma that continues to surround the disease. In 2024, the CDC released information regarding new HIV infections in the United States in 2022. In that year, 37,981 new diagnoses of HIV were made, representing approximately 31,800 completely new HIV infections. Men who reported male-to-male sexual contact were by far the most affected group, accounting for 67% of new infections. Heterosexual contact was associated with 22% of new infections, and injection drug use was reported in 7%. The demographic with the highest incidence of new HIV diagnoses was Hispanic/Latino males with male-to-male sexual contact (9,374 diagnoses), followed by Black/African-American males with male-to-male sexual contact (8,831 diagnoses), then white males with male-to-male sexual contact (5,737). In cases with reported heterosexual contact, 55% of new diagnoses were made in Black/African-American patients. These figures demonstrate the continued disproportionate prevalence of HIV within minority groups. However, the most common ethnic group in patients with reported IV drug use was whites, accounting for 47%.

When separated by region, the South (which includes Texas) accounted for the largest percentage share of new diagnoses (49%) as well as the highest incidence of new diagnoses (15.4 per 100,000 people). The South was also tied with the Midwest for lowest knowledge of HIV status at 84%. This illustrates that the ongoing HIV epidemic is not some distant concern for other parts of the country but is here at our doorstep, affecting our friends, family, and neighbors.

THE IMPORTANCE OF EARLY DIAGNOSIS AND AVOIDING STIGMATIZATION

An important hurdle to managing and preventing the spread of HIV is for patients to actually get the diagnosis of HIV when infected. The CDC's figures show an inverse trend in knowledge of HIV status among transmission groups when compared to rates of infection. Eighty-four percent of patients with infections attributed male-to-male sexual contact had knowledge of their HIV status, which lagged behind heterosexual contact (87%) and injection drug use (92%).

From the very beginning of the AIDS epidemic when the syndrome was initially referred to as "gay-related immune deficiency" or GRID, HIV's predominance within minority groups has afforded it a level of taboo that persists to this day, though with some considerable improvement over time. The CDC released figures outlining a median "stigma score" experienced by people diagnosed with HIV in 2020. The score was determined by a ten-item scale wherein responses ranged from zero (no stigma) to 100 (high stigma) experienced in the preceding 12 months. The median value of all people with HIV was 28. It is notable that many of the pages on the CDC website regarding HIV were taken down earlier this year because of their mention of gender ideology, only to be restored following a court order.

MODERN SIMPLIFIED TREATMENT REGIMENS

Gone are the days of large handfuls of pills with questionable efficacy and unquestionable side effects in the hopes of some level of viral suppression. Most HIV patients can be adequately treated with a one-pill daily regimen. Modern antiretroviral therapy (ART) regimens are anchored with a class of drug called integrase strand transfer inhibitors, also abbreviated as integrase inhibitors or INSTIs. Modern integrase inhibitors have a high barrier to developing resistance and are generally well tolerated by most patients. You may recognize integrase inhibitors by the suffix -tegravir. Like any antiretroviral regimen, integrase inhibitor are never used as a monotherapy but are combined with other drug classes, such as nucleoside/nucleotide reverse transcriptase inhibitors (NRTIs) and non-nucleoside reverse transcriptase inhibitors (NNRTIs).

The most commonly prescribed antiretroviral medication is a 3-drug single pill containing bictegravir, emtricitabine, and tenofovir alafenamide, known by its brand name Biktarvy. Through the efforts of several individuals, including pharmacy staff and myself, BSA recently approved putting Biktarvy on the hospi-

tal formulary. This will streamline the care of our patients with HIV admitted to the hospital. Current guidelines recommend initiation of antiretroviral treatment as soon as possible following the confirmation of a diagnosis of HIV, and we can achieve this more easily with the addition of Biktarvy, given its fewer medication interactions and better renal tolerability than previously available ART. Biktarvy is also more cost effective for the hospital.

In the pursuit of decreasing side effects and simplifying treatment, 2-drug regimens are increasing in popularity. The most commonly prescribed 2-drug regimen is another single pill containing dolutegravir and lamivudine, available under the brand name Dovato. These 2-drug regimens are often selected with the intention of minimizing side effects. Dovato is notably similar to the 3-drug medication Triumeq, which consists of the same two components plus abacavir. Abacavir is well known to be contraindicated in patients who have the HLA-B*5701 allele, so its elimination has simplified and allowed for the expansion of the use of dolutegravir and lamivudine.

One of the most exciting developments in HIV care over the last several years has been the emergence of a long-acting injectable medications. Cabenuva, consisting of cabotegravir and rilpivirine, is the only long-acting injectable ART currently on the market, but others are expected to follow. Cabenuva is currently only approved as a switch therapy, which means a patient must show sustained viral suppression on other ART before being transitioned to Carbenuva. It is given at an infusion center with the first two doses separated by one month, then every two months thereafter. The strategy of using long-acting medications is useful for many patients who struggle to remember to take a daily pill or have issues with GI absorption.

AVOIDING DRUG RESISTANCE

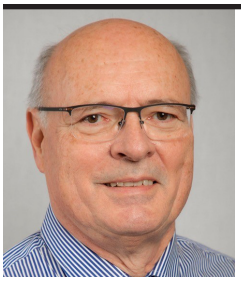
Now that we have a baseline for effective antiretroviral drugs, what can our patients do to optimize the efficacy of their treatment? The simple answer is compliance. As I mentioned before, INSTIs have a high barrier to development of resistance but not an insurmountable one. Resistance to ART most often arises in the setting of poor medication compliance, wherein the patient alternates between taking and not taking their pill. When I am counseling patients on the appropriate use of their ART, I advise them that, if they should run low on their medication and will not be able to get a refill promptly, they should finish out their pills and not take them intermittently to try to make them last longer. This will decrease the pressure to develop resistance.

PRE-EXPOSURE PROPHYLAXIS

If we are ever going to meet our goals in controlling the HIV epidemic, prevention of the spread of infection is going to be central. Achieving virologic control in our patients living with the infection is a major goal of treatment. "Undetectable = untransmittable" or "U=U" is concept which states that, if a patient achieves a sustained undetectable HIV viral load via good medication compliance, they will not transmit HIV via sexual contact. This allows patients the possibility of engaging in safe sexual contact without barrier protection, especially in cases of long-term, monogamous relationships. Patients without HIV can also take action to help prevent contracting the disease. Pre-exposure prophylaxis or PrEP uses many of the same medications as antiretroviral treatment, though usually as a single agent rather than combination therapy. PrEP is appropriate to give to any adult patient who wants it and has no contraindications. Most forms of PrEP come as a one pill daily regimen. Cabotegravir (the same INSTI used in Cabenuva) is available as a long-acting injectable form of PrEP and carries the same benefits for medication compliance as Cabenuva.

Though significant hurdles remain, the prognosis for patients living with HIV and our hopes of controlling the epidemic continue to improve. Advances in knowledge of viral mechanisms, antiretroviral medications, and prevention of viral transmission all have helped bring this about. Healthcare professionals can further this pursuit by keeping up with the basics in HIV care and promoting appropriate compliance with treatment. The general public can help by fighting against the persistent social stigma of being HIV-positive. Through the years, HIV has stood testament to both he triumphs and failures of our healthcare system. Of course, your friendly local infectious disease physician can help you to manage the infection in both its most simple and complex manifestations.

Flint Smith is a physician specializing in infectious diseases. He practices through BSA and the Amarillo Diagnostic Clinic. Dr. Smith was born and raised in Amarillo. He graduated from medical school at Texas Tech University Health Sciences Center in Lubbock in 2019 and completed residency in internal medicine and fellowship in infectious diseases at the same institution. He acts as the chair of the Antimicrobial Stewardship Committee at BSA.



An Update on Research at the Jerry H. Hodge School of Pharmacy, 2022–2025

by Ulrich Bickel, MD Professor, Department of Pharmaceutical Sciences, Jerry H. Hodge School of Pharmacy Texas Tech University Health Sciences Center at Amarillo

Since the last account of the history of research on the Amarillo campus in Panhandle Health (Vol 32 No.1, 2021), the Jerry H. Hodge School of Pharmacy (SOP) has shown remarkable resilience in sustaining and expanding strong, impactful research programs, despite challenging headwinds affecting academic pharmacy schools nationally. Faculty across the Amarillo main campus and our campuses in Abilene and Dallas have secured major external funding, published in high-impact journals, and built out cutting-edge research infrastructure. We are driving pioneering projects in cancer, metabolism, neuroscience, and real-world evidence-based medicine. With an output of almost 300 papers, over 180 submitted grant proposals, multiple active grants from NIH, CPRIT and private foundations and a 5-year average of $4.5 million in extramural funding, the SOP is making a difference. Although it is beyond the scope of this piece to provide a detailed description of all ongoing research, we offer a hopefully engaging tour of select achievements that matter for clinicians and the communities they serve.

INSTITUTIONAL RESILIENCE

The period from 2022 to 2025 was defined by strong institutional leadership and strategic adaptation. In May 2022, the School welcomed Dr. Grace Kuo, a nationally recognized expert in primary care pharmacy practice and research in implementation science, as Dean and successor to Dr. Quentin Smith. With support from TTUHSC leadership, Dr. Kuo steered the SOP through turbulent waters caused by the aftermath of the COVID pandemic and a national overcapacity in Pharm.D. programs, which had resulted in a drop of enrollment in the Pharm. D. program by over one third.

The recruitment in 2021 of Dr. Lance McMahon as TTUHSC Executive VP for Research and Innovation brought transformative changes to the quality of research administration at TTUHSC. He has secured a NIH STRONG grant, geared towards enhancing competitiveness at institutions with (comparatively) limited research resources like ours. In addition, Dr. McMahon's Office of Research and Innovation supports startups for faculty recruits and equipment purchases (e.g., an upgrade to the NMR instrument in Amarillo, and a new confocal microscope in Abilene). He has made multi-year support available to launch two new Research Centers (the Center for Real-World Evidence and the Brain Drug Discovery Center), thus elevating research productivity. Finally, Dr. McMahon has brought his own internationally-renowned research team in behavioral neuroscience and addiction research to our Department of Pharmaceutical Sciences.

RESEARCH CENTER HIGHLIGHTS

While the administrative organization at the SOP is by departments (Pharmacy Practice, Pharmaceutical Sciences, and Immunotherapy and Biotechnology), research is driven by Principal Investigators (PIs), who are members in one or more of the four currently active TTUHSC-designated Centers. A common mission of these Centers is to foster collaborative projects and boost competitiveness for extramural funding. Some key achievements are highlighted below.

CENTER FOR REAL-WORLD EVIDENCE (CRWE)

Founded in 2022 under Dr. Carlos Alvarez, CRWE has quickly become a nationally visible player in pharmacy-driven outcomes research. CRWE leverages large datasets—real-world clinical records, claims, and patient-reported outcomes—to address key questions about medication safety and effectiveness. Faculty members from the CRWE have led or collaborated on more than 30 peer-reviewed publications since inception, spanning cardiovascular risk management, medication safety for underrepresented groups, and adherence in chronic diseases. Notably, the center has attracted major industry collaborations (Pfizer, Merck, Bristol Myers Squibb), as well as NIH and VA grant support, sustaining a team of data analysts and biostatisticians to work across the SOP and its collaborators. A recent publication on the interaction of thiazide diuretics and statins in patients with diabetes regarding renal and cardiovascular outcomes showcases the type of studies pursued by the CRWE (1). Current projects include evaluating the real-world effectiveness of SGLT2 inhibitors and GLP-1 receptor agonists in diabetes management—key topics for front-line clinicians.

The CRWE also partners with other SOP departments for pilot grants and is developing collaborations to investigate off-label drug uses (such as Dr. Abbruscato's repurposing of metformin for stroke prevention), further bridging pharmaceutical science and clinical practice.

BRAIN DRUG DISCOVERY CENTER (BDDC)

Established in August 2024 and directed by Dr. Tom Abbruscato, the BDDC builds on two decades of TTUHSC leadership in blood-brain barrier (BBB) science and drug delivery. The projects from the previous BBB and Cancer Biology Centers blended into this new center, which boasts a current mem-

bership of 17 PIs. Notable recent research publications include a seminal paper describing solutes that can increase the permeability of the BBB to CNS-active drugs by 10 or more orders of magnitude, based on experiments with 125 solutes conducted over several decades in the group of Dr. Quentin Smith (2). The lab of Dr. Abbruscato has also described novel peptidomimetic neurolysin activators as promising future therapeutics for ischemic stroke (3). This project, a collaboration with previous SOP faculty members Drs. Trippier and Karamyan (now at the University of Nebraska and Oakland University, respectively), just received renewed funding support with a 5-year, Multi-PI NIH R01 grant and has spawned a patent application. In another translational neuroscience project, Dr. Bickel's group employed a widely-used transgenic mouse model of Alzheimer's Disease to show that the BBB of these animals is not leaky (despite the presence of amyloid plaques) (4), underlining the need for new brain drug delivery strategies to treat AD patients efficiently.

The labs of Drs. Jenny Wilkerson, Samuel Obeng and Lance McMahon have conducted neurobehavioral studies on breathing in rats to investigate the effects of mitragynine and 7-hydroxymitragynine (5). These alkaloids are constituents of Kratom, a freely-available supplement derived from a Southeast Asian tree; Kratom has a rapidly growing market in the US. 7-hydroxymitragynine is a potent agonist of μ-opioid receptors and is therefore under scrutiny, with the FDA recommending its classification as a Schedule I Controlled Substance in July 2025. A total ban on Kratom was discussed in the 2025 Texas legislative session. These developments prompted initiation of a scientific study on Kratom use across the State of Texas by a national non-profit organization which promotes access to the plant. Thanks to expertise in clinical studies and drug assays at Texas Tech, that study is slated to be conducted here. Up to 2,000 participants across Texas will submit an anonymized questionnaire (designed and evaluated by the TTUHSC Clinical Research Institute) and will send in the products they consume. A thorough quantitative analysis of the alkaloid content of these products will then be performed in our LC-MS Core Facility in Amarillo.

Dr. Al-Ahmad's and Dr. Das's labs are pursuing exciting projects based on human stem cells. The Al-Ahmad group is leveraging human induced pluripotent stem cells (iPSC) to differentiate into human brain-derived endothelial cells, astrocytes and neurons. These experiments should create in vitro models of the human BBB for studies of normal physiology and various diseases (e.g., ischemic stroke, Alzheimer's Disease, Glut-1 deficiency) (6). Dr. Das's diverse research portfolio includes his pioneering work on the therapeutic potential of immunomodulation mediated by the secretory products from dental pulp-derived stem cells (7). For his innovative work and multiple patents, Dr. Das has recently been named a Fellow of the National Academy of Inventors (NAI). The NAI also honored another SOP faculty member, Dr. Nadezhda German, bestowing her the title of Senior Member. Her research in

Medicinal Chemistry covers the synthesis of novel small molecule therapeutics for treatment of opioid addiction and breast cancer, resulting in several patents and patent applications for biphenyl-urea based drug candidates (8). The SOP is fortunate that another Medicinal Chemist, Dr. Mahmoud Ahmed, joined the Department of Pharmaceutical Sciences from UT Southwestern in 2021. He established a highly innovative research program focused on development of small molecule drugs in the fields of metabolic reprogramming and peripheral neuropathic pain (9). The latter project led to the recent award of a collaborative NIH R01 grant with Dr. Wilkerson to identify novel EphB1/2 tyrosine kinase inhibitors as a target to treat peripheral neuropathic pain.

Center members Dr. Ming-hai Wang and Kalkunte Srivenugopal have focused on collaborative, cutting-edge drug development and translational cancer biology--directly involving clinicians in and beyond Texas. They have published key studies on receptor tyrosine kinases in malignancy, next-generation drug conjugates for breast and epithelial cancers, and innovative imaging agents for live cancer cell and xenograft tumor imaging (10,11). Cancer research on the Amarillo campus has received a boost with the opening of the Veterinary School and the launch of the Texas Center for Comparative Cancer Research.

CENTER FOR TUMOR IMMUNOLOGY & TARGETED CANCER THERAPY (TITCT)

Seven members of the Department of Biotechnology and Immunotherapeutics in Abilene are members of the Center for Tumor Immunology and Targeted Cancer Therapy, which is led by Dr. Maciej Markiewski. Center investigator Dr. Magda Karbowniczek and collaborators conduct groundbreaking research on the role of extracellular vesicles in rare lung tumors (lymphangioleiomyomatosis) (12). Dr. Irene La-Beck's studies into immunomodulatory mechanisms caused by lipid nanoparticles, which are widely used as carriers of chemotherapeutics, have broad clinical relevance (13). Among other cancer-related projects in the Center are the development of bispecific antibodies against PD-L1/CD3 in Dr. Devin Lowe's lab (14), the use of *Listeria*-based immunotherapy for colon cancer originating in Dr. Laurence Woods' group (15), and the repurposing of various approved drugs as cancer therapeutics, e.g., the antiparasitic milbemycine oxime for pancreatic ductal carcinoma by the lab of Dr. Sanjay Srivastava (16), who has just been elected as a Fellow of the Royal Society of Biology.

CENTER FOR CLINICAL PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS (CPET)

Based on the Dallas campus and led by Dr. Ron Hall, the mission of CPET is to provide pharmaceutical expertise to conduct and support preclinical and clinical/translational studies, as well as post-approval assessments, of therapeutic agents. The Center runs a CPRIT-funded LC-MS Core Facility for the analysis of samples from pharmacokinetic studies. The CPET collaborates with PIs on the Abilene and Amarillo campuses, as well as clinician-scientists at UT Southwestern (17).

INFRASTRUCTURE, FUNDING, AND OUTREACH

Despite limited internal funding, as well as faculty and staff turnover in recent years, the SOP has expanded its collaborative interactions, both internally and with outside institutions. In spring 2024, the Vet School hosted all schools on the Amarillo campus (Medicine, Pharmacy, Nursing, Health Professions, Veterinary Medicine) for a well-received common Research Day, bringing together clinicians and scientists from across TTUHSC and partner institutions. The Amarillo Brain Drug Discovery Research Center hosted its first annual research symposium in August of 2025, with Dr. Quentin Smith as keynote speaker. He presented his ground-breaking work from decades of brain drug research into highly permeable drugs. The Abilene Research Symposium. with a mission of building collaborations with local universities and colleges, has just held its 8th annual event in October 2025.

The outstanding technical infrastructure currently deployed across the SOP campuses rivals much larger research institutions and attracts new collaborative projects. A prime example is the use of an advanced small animal imager operating in the near infrared range, which had been acquired under the current CPRIT Core Facility Support Award in Amarillo. That instrument is unique in West Texas and is now heavily used by two research groups from TTU in Lubbock (Drs. Indrajit Srivastava and Joshua Tropp). Both are developing innovative fluorescent dyes for in vivo imaging (e.g., for fluorescence guided surgical interventions) as superior alternatives to Indocyanin Green, the only currently clinically approved dye (18, 19). Our super-resolution confocal microscope, also supported by the CPRIT grant and still one of only a handful such instruments around the country, has provided a competitive edge in a collaborative USDA-funded grant with a PI from the Veterinary School (Dr. Fernanda Rosa), who studies immunomodulation transferred to newborn calves by the colostrum. The system has even been used by a microscopy specialist from California to image meteorite samples for a NASA project investigating organic molecules from outer space

LOOKING FORWARD

TTUHSC School of Pharmacy's commitment to foundational discovery, clinical translation, and meaningful collaborations is undimmed. With a supportive institutional environment and recent successes in securing major grant awards, despite the turbulences currently shaking federal research agencies, we can look towards the future with the confidence that high-level research will thrive across the diverse facets of interests pursued our SOP faculty.

CONTACT AND COLLABORATION

Clinicians interested in collaborating, leveraging SOP's expertise for clinical trials or data analysis, or mentoring students in research should contact the Office of Sciences or the respective Center directors. The brief list of references of this article may serve as an inspiration to learn more about the ongoing projects. For more information, visit the SOP Office of Sciences or SOP departmental web pages.

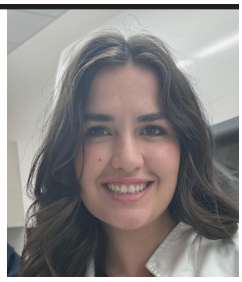
REFERENCES

1. Afify H, Gonzalez-Morales U, Asmar A, Alvarez CA, Mansi IA. Association of thiazide diuretics with diabetes progression, kidney disease progression, cardiovascular outcomes, and death among patients with diabetes who initiate statins. Am J Cardiol. 2023;203:274-284. DOI: 10.1016/j.amjcard.2023.07.057.
2. Smith QR, Mandula H, Parepally JMR, et al. Brain endothelial permeability, transport, and flow assessed over 10 orders of magnitude using the in situ brain perfusion technique. Fluids Barriers CNS. 2024;21(1):100. DOI: 10.1186/s12987-024-00584-y.
3. Zhang Y, Sharma S, Jonnalagadda S, et al. Discovery of the next generation of non-peptidomimetic neurolysin activators with high blood-brain barrier permeability: a pharmacokinetics study in healthy and stroke animals. Pharm Res. 2023;40(11):2747-2758. DOI: 10.1007/s11095-023-03619-5.
4. Nozohouri E, Noorani B, Patel D, Ahn Y, Zoubi S, Bickel U. Assessing blood-brain barrier (BBB) integrity in an Alzheimer's disease mouse model: is the BBB globally or locally disrupted? Fluids Barriers CNS. 2025;22(1):79. DOI: 10.1186/s12987-025-00685-2.
5. Zuarth Gonzalez JD, Ragsdale AK, Mukhopadhyay S, et al. Mitragynine and 7-hydroxymitragynine: bidirectional effects on breathing in rats. J Pharmacol Exp Ther. 2025;392(11):103720. DOI: 10.1016/j.jpet.2025.103720.
6. Syeara N, Mehta Y, Karamyan VT, Al-Ahmad A. Human iPSC-derived astrocyte-endothelial cell and neuron-endothelial cell co-culture models of the blood-brain barrier to study the impact of ischemic stroke in vitro. Methods Mol Biol. 2025;2956:53-64. DOI: 10.1007/978-1-0716-4706-6_5.
7. Howlader MSI, Prateeksha P, Hansda S, et al. Secretory products of DPSC mitigate inflammatory effects in microglial cells by targeting MAPK pathway. Biomed Pharmacother. 2024;170:115971. DOI: 10.1016/j.biopha.2023.115971.
8. Bandy R, Shahi S, Quagraine N, et al. Mechanistic aspects of biphenyl urea-based analogues in triple-negative breast cancer cell lines. ACS Pharmacol Transl Sci. 2024;7(1):120-136. DOI: 10.1021/acsptsci.3c00193.
9. Tareq S, Ewida HA, Zoubi S, et al. Discovery of pan-EphB tyrosine kinase inhibitor for metabolic syndrome sparing EphB3 signaling in mice. Pharmacol Res. 2025;219:107900. DOI: 10.1016/j.phrs.2025.107900.
10. Suthe SR, Yao HP, Weng TH, Wang MH. RON receptor Tyrosine Kinase in tumorigenic stemness as a therapeutic target of antibody-drug conjugates for eradication of triple-negative breast cancer stem cells. Curr Cancer Drug Targets. 2023;23(2):103-117. DOI: 10.2174/1568009622666220825115528.
11. Srivenugopal KS, Arutla V, Punganuru SR, Khan A. Application of a specific and sensitive NQO1 Turn-On Near-Infrared Fluorescence Probe for live cancer cell and xenografted tumor Imaging in nude mice. Methods Mol Biol. 2024;2755:63-74. DOI: 10.1007/978-1-0716-3633-6_4.
12. Karbowniczek M, Kalvala A, Silwal A, et al. Extracellular vesicles modulate integrin signaling and subcellular energetics to promote pulmonary lymphangioleiomyomatosis metastasis. Res Sq. 2025. DOI: 10.21203/rs.3.rs-5390547/v1.
13. Back PI, Yu M, Modaresahmadi S, et al. Immune implications of cholesterol-containing lipid nanoparticles. ACS Nano. 2024;18(42):28480-28501. DOI: 10.1021/acsnano.4c06369.
14. Okpalanwaka IF, Daugherity EA, McCormick AL, et al. A PD-L1/CD3 bispecific antibody enhances the antitumor effects of regorafenib against colon cancer. Mol Cancer Ther. 2025;24(8):1240-1251. DOI: 10.1158/1535-7163.MCT-24-1015.
15. Anderson TS, McCormick AL, Daugherity EA, et al. Listeria-based vaccination against the pericyte antigen RGS5 elicits anti-vascular effects and colon cancer protection. Oncoimmunology. 2023;12(1):2260620. DOI: 10.1080/2162402X.2023.2260620.
16. Gaikwad S, Srivastava SK. Reprogramming tumor immune microenvironment by milbemycin oxime results in pancreatic tumor growth suppression and enhanced anti-PD-1 efficacy. Mol Ther. 2024;32(9):3145-3162. DOI: 10.1016/j.ymthe.2024.07.029.
17. Hall RG, 2nd, Liu S, Pai MP, et al. Impact of obesity on doxorubicin pharmacokinetics in women with breast cancer. J Oncol Pharm Pract. 2025:10781552251326045. DOI: 10.1177/10781552251326045.
18. Harun A, Bendele N, Khalil MI, et al. 3D tumor-mimicking phantom models for assessing NIR I/II nanoparticles in fluorescence-guided surgical interventions. ACS Nano. 2025;19(21):19757-19776. DOI: 10.1021/acsnano.5c01919.
19. Posey R, Gill N, Fernandez D, et al. Tuning the structure of thienoisoindigo (TIG) copolymers to afford bright near-infrared emission for bioimaging through aggregation-enhanced emission. J Mater Chem B. 2025;13(40):12918-12925. DOI: 10.1039/d5tb01093d.

Dr. Uli Bickel is a Professor of Pharmaceutical Sciences and the Associate Dean of Sciences in the Jerry H. Hodge School of Pharmacy. With a background in Clinical Pharmacology, his translational research is focused on pharmacokinetics and physiological transport mechanisms at the blood-brain barrier. His brain uptake studies apply both in vitro models and animal models of disease (e.g., transgenic mouse models of Alzheimer's Disease, experimental stroke models) and utilize analysis by mass spectrometry and state of the art imaging techniques. Dr. Bickel's lab has been supported by the National Institute of Neurological Disorders and Stroke, the National Multiple Sclerosis Society, the American Heart Association, the DoD Breast Cancer Research Program, and the Cancer Prevention and Research Institute of Texas (CPRIT). He enjoys traveling with his family and nature photography as a hobby.

Cow Embryos at Texas Tech University - School of Veterinary Medicine are Talking, But What are they Saying?

by John Gibbons PhD and J. Looman PhD
Texas Tech University - School of Veterinary Medicine, Amarillo, TX



There are a few things that all mammals have in common, and one of those is that they all begin their life's journey as an embryo. Our research at the Texas Tech University-School of Veterinary Medicine uses cattle embryos as a model to study developmental events in embryos and to understand the optimal culture conditions for embryos after fertilization.

THE IMPORTANCE OF IN VITRO FERTILIZATION TO THE DAIRY INDUSTRY

These are issues of great relevance to the cattle industry in the Panhandle. Some of the largest dairies in the country are located in the Panhandle; it is home to approximately 675,000 dairy cows (13% of the US inventory), which produce about 1.5 million pounds of milk per month (1). In the last decade, the vast majority of the embryos produced by dairy cows have been produced via in vitro fertilization (IVF) in the laboratory (Figure 1), as opposed to the in vivo derived (IVD; i.e., old-fashioned / conventional) method (2). This process involves removing the oocytes or eggs from the females using a type of ultrasound-guided transvaginal approach, in vitro maturation of those oocytes, combination of those mature oocytes with sperm cells, and in vitro culture for several days to produce a viable embryo. The in vitro (or "in glass") method is a process in which all of the laboratory processes (maturation, fertilization and culture) occur in the incubator under controlled temperature and gas environments that mimic the systems in the body. The IVF process has become more popular than in vivo derived embryo production, especially in dairy cattle, because the process is more efficient and multiple different sires can be used, thus contributing to the genetic progress of the herd. Then, once blastocyst embryos are produced (a blastocyst is a ball of a hundred to a few hundred cells), they must be transferred one at a time to surrogate recipients to carry to term.

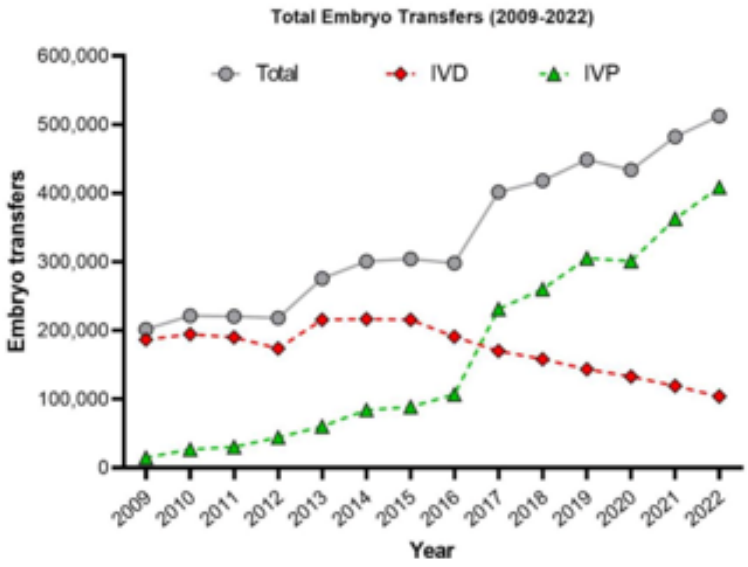


Figure 1: Embryo transfer activity in the US.

THE CRUCIAL EARLY STAGES OF IN VITRO EMBRYO DEVELOPMENT

The research at the Texas Tech University-School of Veterinary Medicine focuses on the in vitro culture period when the communication among embryos and embryo cells becomes very important – yet poorly understood. This is the most critical step in the in vitro embryo development process, and several specific and specialized events must occur in the proper order for efficient and effective embryo development to occur.

One of the challenges is that presumptive zygotes (newly fertilized embryos) cultured individually do not perform very well compared to zygotes cultured in groups (Figure 2). In fact, although the first cell division of the embryo (cleavage) does not seem to be impacted by the culture population density, the development to the blastocysts stage is 2-3 times higher when zygotes are cultured with at least a few "companion" zygotes. There may be several reasons for this finding. One of the most important steps in mammalian embryo development is the transition from maternal to embryonic control of the DNA in the nucleus. During fertilization and for the first few days of embryo development, the oocyte/egg provides all of the cytoplasmic machinery necessary for the cells to grow and divide. Protein and energy production, cellular waste export, and cell-to-cell communication are all controlled by the maternal gamete – which is one reason that the oocyte/egg is more than 20 times larger than the sperm cell (3).

After a few divisions--when the embryos are about 8-16 cells—the embryo starts to take over managing its own activities. This is a very sensitive

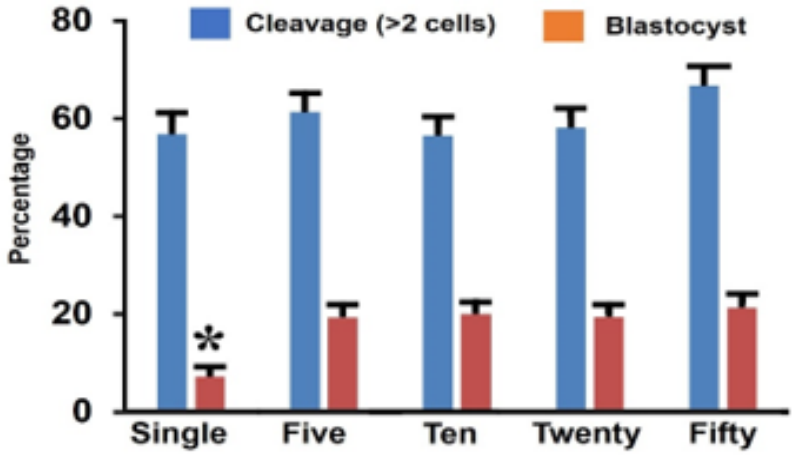


Figure 2: Number of IVF embryos in culture and their success in developing into blastocysts.

time, and many embryos stop developing at this time because the events in the process are out of sequence or poorly timed. In fact, it is difficult to know how often this happens in in vivo embryos in the female, since, when this "block" to development occurs, the embryo dies, and the female never even sensed that she was pregnant. This "block" also occurs in vitro when embryos are cultured in a petri dish (3). Although the percentage of embryos that divide at least once is similar among groups, the percentage that reach the blastocyst stage of development is lower when embryos are cultured individually compared to embryos cultured in groups (Figure 2) (4). This "helper effect" from other embryos may be important in overcoming the developmental block, thus allowing the embryos to develop into viable fetuses.

APPROACHES TO UNDERSTANDING THE "HELPER EFFECT"

It does not seem to matter how many embryos are in the culture groups, as long as it is more than 1 (Figure 2). Thus, embryos need at least 1 companion to share information. It is not known if the "companion" takes on a sacrificial role and removes toxins, waste, and free radicals from the culture environment, or if the embryos directly assist each other through the in vitro culture media during the development process.

A specific scientific approach to understand this phenomenon is to reuse the "conditioned" media that has already proven to produce successful embryo development. This would allow the identification of beneficial extracellular factors. This can be done by taking media from one culture and adding it to another embryo in another petri dish. Although there are certainly factors that pass from one culture to another using this method, the particular factor that assists in removing the developmental "block" is either diluted using this approach or it is only functional for a brief time period. As a result, timing becomes critical in exploiting these factors to assist in embryo development (3). Furthermore, the source of oocytes/eggs may also be critical, as eggs from different cows produce different effects on development, suggesting that genetic factors may also regulate embryo development (3). This would not be surprising, as some breeds of cattle (as well as other species) are more prolific than others.

DECIPHERING THE "LANGUAGE" OF INTER-EMBRYO COMMUNICATION

One of the biggest challenges in understanding the language that embryos use to communicate during culture is how to successfully transfer embryos into surrogate recipients, which would then carry them to term. The difficulty is technical, embryo / recipient specific, and financial in nature, as there are many factors that contribute to producing a successful pregnancy from embryo transfer, and not all of those factors are related to embryo physiology. The recipient plays an important role in this relationship, so that a high-quality embryo may not produce an offspring if the surrogate recipient is not also of high-quality. Finally, for research, the oocyte (and sperm) providers usually have no real genetic value, so the pregnancies produced by their combination are of little financial value--and yet the surrogate recipients must be maintained throughout the 285 days of gestation, thus contributing to the feed and maintenance costs.

Perhaps the most practical method of understanding what the embryos are saying to each other is to try and decipher their language. The laboratories at the TTU-SVM are using their genetic codes as a dictionary to understand this language (5). Hopefully, by using this approach, we will better understand what the embryos are saying, not saying, or screaming to each other by the up, down, or overexpression of their specific genetic profiles!

REFERENCES

1. USDA - National Agricultural Statistics Service. January 2025 milk production report. www.nass.usda.gov
2. IETS Data Retrieval Committee. 2023 Statistics of embryo production and transfer in domestic farm animals. In: Embryo Technology Newsletter. 2024. 42 (4).
3. Looman J, Gibbons J. In vitro embryo production and development in livestock and human: a One Health model for human assisted reproductive technology. West Texas Journal of Medicine, 2025;2(3). 1-28.
4. Gibbons J. Rodriquez Z, Waugh L, Looman J. Effects of the number of presumptive embryos in the culture environment on cleavage and blastocysts development rates for bovine in vitro embryos. Presented to the International

Embryo Technology Society, January 2023, Lima, Peru.

5. Bayat T, Looman J, Sanchez M, Fon Tacer K, Gibbons J. Comparative transcriptomic analysis of bovine embryos developed in vivo and in vitro under group and individual culture. Accepted for presentations to the International Embryo Technology Society, January, 2026; Panama City, Panama.

Dr. John Gibbons received his BS in Animal Science from Texas A&M University, his MS from Virginia Tech University, and his PhD from the University of Wisconsin-Madison. He has 25+ years of experience in the area of embryo physiology in clinical and academic settings in a variety of species. During his PhD, Dr. Gibbons worked with Dr. OJ Ginther evaluating the interrelationships between Follicle Stimulating Hormone Profiles and follicular development in sheep and cattle. While serving as the principal scientist at a start-up biotechnology company, he led the team that cloned the first cow from a carcass. He has served on the Faculty at Clemson University, Lincoln Memorial University, and currently at the Texas Tech University - School of Veterinary Medicine. Additionally, Dr. Gibbons serves on the Research, Certification, Program, and Promotion Committees and chairs the Education Committee for the American Embryo Transfer Association. Dr. Gibbons and his wife (a food animal internist and the much smarter Dr. Gibbons) have two children and raise goats, chickens, horses and pigs.

Dr. Jessica Looman earned her Bachelor's degree from West Texas A&M University, where she developed a strong interest in equine and bovine reproductive physiology. She remained at West Texas A&M to complete her Master's degree, conducting research on a drug protocol designed to stimulate anestrous mares to cycle. Jessica went on to earn her PhD from the Texas Tech University School of Veterinary Medicine, where her research focused on optimizing culture conditions for in vitro–produced bovine embryos. Her work centers on improving assisted reproductive technologies across livestock species, with a One Health perspective that connects advancements in animal reproduction to human fertility and sustainable food production.

A History of Inpatient Hospice Care in Amarillo: From Sister Olivia & Dr. Gerry Holman to the New Inpatient Unit at BSA

by Brittany Taute, MD and Randy Stewart, MD, FACP
Medical Directors, BSA Hospice of the Southwest

Who would have predicted that a city in the Texas Panhandle, more known for its nuclear weapons assembly and sprawling feed yards, would become an early leader of end-of-life care, not only in Texas but in the US? Dame Cicely Sauders founded the modern hospice (end-of-life care in the last 6 months of life) by creating St. Christopher's Hospice in London in 1967. Her vision was end-of-life care addressing physical, emotional, social and spiritual suffering. The hospice movement (referring to a type of end-of-life care rather than a specific place or location) began in the US with the founding of the Connecticut Hospice in 1974.

Through much foresight by the administration and board of the former St. Anthony's Hospital in Amarillo, and only six short years after the beginning of the hospice movement in the US, Sister Olivia Prendergast was hired as the Director of Life Enrichment at St. Anthony's Hospital in 1980. Sister Olivia was a Registered Nurse who, after witnessing the suffering of patients with end-of-life illnesses, developed an interest in hospice care. Sister Olivia spent a semester studying hospice care at St. Joseph's Hospital in Albuquerque and made trips to London, Scotland, and Ireland to observe hospice care, before taking the role as Director of Life Enrichment at St. Anthonys. Hospice care officially began in Amarillo in October of 1980 when Dr. Gary Rose wrote the first order to "refer to Sister Olivia for hospice care," a short 2 weeks after her arrival in Amarillo.

Referrals for hospice care came in rapidly from many sources: hospitals, medical offices, and nursing homes. Sister Olivia made education and recruitment a point of emphasis. She shared her "Hospice 101" talk with any staff who would listen, hoping she could "borrow" them to help with hospice care. The first hospice medical director was a volunteer physician, Dr. Dan Epley, a radiation oncologist, along with significant help from pulmonologist Dr. Gary Rose. It was apparent early on that most patients referred to hospice had a high symptom burden and were in the last few days of life. These high acuity patients were best cared for in dedicated in-patient hospice beds with trained staff.

Inpatient hospice started with so-called "scattered" beds in the basement of St. Anthony's Hospital, but Sister Olivia's dream was to have a dedicated inpatient unit. With the backing of the St. Anthony's board, a committee was established to explore the idea and make recommendations for construction of an inpatient unit. After receiving the blessing of the board and the support of the Amarillo Area Foundation, fundraising began in earnest. Dr. Winfred Moore of First Baptist Church of Amarillo and Monsignor Joseph Tash of St. Thomas of the Apostle Catholic Church graciously took the lead in reaching the 5.5 million-dollar fundraising goal. Through the generosity of the Amarillo community and the dedication and foresight of many community leaders, the St. Anthony's Life and Enrichment Center opened in March of 1985, becoming the first dedicated freestanding hospice unit west of the Mississippi.

Although it is impossible to mention all those who played a role in making St. Anthony's Hospice and Life Enrichment a reality, no history of hospice in Amarillo would be complete without the guidance and dedication of Dr. Gerald "Gerry" Holman, a pioneer in hospice care, the Medical Director from 1996-2004, and, subsequently, the President of the American Academy of Hospice Physicians. Under the direction of Dr. Holman, in 1990 the first-ever hospice physician training course of the American Academy of Hospice Physicians was held in Amarillo, attracting attendees from all over the world.

With the establishment in 1982 of the Hospice Medicare benefit, which established a payor source for both inpatient, outpatient and respite care, there was a gradual shift from hospital to primarily a home or nursing home setting. The hospice Medicare benefit requires that all hospices have the ability to provide general inpatient care and respite care in a Medicare-certified hospice inpatient unit, Medicare-certified hospital or a Medicare-certified skilled nursing unit.

In 1991, a competing hospice, started by previous employees of St. Anthohy's Hospice, began operation in the Amarillo area. Crown of Texas Hospice provided hospice home care along with scattered in-patient beds at what was then High Plains Baptist Hospital and at Northwest Texas Hospital, eventually opening a dedicated inpatient unit within the Pavilion at Northwest Texas Hospital. Crown of Texas was acquired by Odyssey Healthcare in 2004, which in turn was purchased by Gentiva Company in 2010. The dedicated hospice inpatient unit associated with Gentiva was closed shortly after the 2010 purchase.

After the merger of High Plains Baptist Hospital and St. Anthony's Hospital in 1996, the Baptist St. Anthony's Hospice was formed. Hospital services were gradually moved to the medical center, resulting in the closure of the Hospice

Life Enrichment Center on the old St. Anthony's campus in 2001. The Life Enrichment Center is currently the new home of Faith City Mission, a faith-based homeless shelter. Despite an increased emphasis on acute care at home, the ongoing need for inpatient beds remained. The increased use of home hypodermoclysis (a subcutaneous infusion to deliver comfort medications) and Macy Catheters (a rectal catheter for delivery of comfort medications) helped bridge the gap until inpatient beds again became available. With the use of more sophisticated methods of comfort medications at home, inpatient hospice care has dropped to about 0.9% of all patients enrolled in hospice in the United States.

In 2016, Baptist St. Anthony's Hospice merged with Hospice of the Southwest, becoming BSA Hospice of the Southwest. Shortly thereafter BSA Hospice of the Southwest moved its inpatient hospice unit to Bivins Pointe, a long-term care facility. Bivins Pointe served as the only dedicated inpatient unit in Amarillo until closing its doors in 2021, when its inpatient beds were moved to The Arbors, another long-term care facility. The Arbors subsequently closed its doors in 2024.

It seems that history does repeat itself, as scattered inpatient hospice beds were again started at BSA Hospital in 2025, much like the early days in the basement of the old St. Anthony's Hospital. Patients can now receive state-of-the-art hospice inpatient care on three different floors on the main campus. Collaboration between the hospital nursing staff, hospice staff and hospice medical directors has allowed seamless transition of end-of-life care to all those in need who are not able be managed in an outpatient setting.

Hospice care offers comfort care with dignity in a loving and supportive environment, with a goal of relief of physical, spiritual and mental suffering. Hospice care has always concentrated on the whole person as well as their family and loved ones; it is designed to help patients and families navigate the most difficult journey of life.

The future of hospice in Amarillo is on sound footing, as many home hospices now serve the greater Amarillo area. The goal of inpatient care at BSA Hospice of the Southwest is eventually to establish a dedicated inpatient unit within the confines of BSA Hospital, and to continue looking for those interested in learning "Hospice 101". In this way, we hope to carry on the tradition of exceptional end-of-life care started by Sister Olivia, Dr. Holman, and the many dedicated providers who have followed the path that they first established.

Dr. Randy Stewart graduated with honors from Texas Tech University School of Medicine and completed an internal medicine residency at Baylor University Medical Center in Dallas. He has practiced general internal medicine with a focus on hospice and palliative care in Amarillo for over three decades and is currently Medical Director of BSA Hospice of the Southwest.

Dr. Brittany Taute MD is a Tascosa grad (Go Rebels!) who studied Business Management at WTAMU and then went on to medical school at UTMB in Galveston, from which she graduated in 2015. Dr. Taute completed her residency in Family Medicine at TTUSOM in Amarillo and joined the BSA Hospitalist group in 2018. In 2021 she joined BSA Hospice of the Southwest and now works on the hospice inpatient unit as well as the inpatient ward service at BSA

Developments in Legal Medicine

by William Biggs, JD

As I'm writing this article, healthcare is on the cusp of yet another monumental shakeup, with a Congressional fight over enormous cuts to funding for marketplace subsidies shutting down governmental services nationwide. It is a national blinking match over the price of healthcare for tens of millions of Americans, many of them poor or rural. As we all persist in the face of the uncertain, here instead are three of the more interesting developing ideas in legal medicine.

I. THE CHANGING FACE OF TELEMEDICINE IN TEXAS

Recent legislative and regulatory changes will likely change the practice and reimbursement landscape for telemedicine in Texas. The most significant reform is House Bill 1052 (89th Legislature, 2025). Effective September 1, 2025 and applying to health benefit plans issued or renewed on or after January 1, 2026, the statute amends Texas Insurance Code Chapter 1455 to require most health plans to cover telemedicine encounters when either the clinician or patient is physically outside Texas, provided the clinician is licensed in Texas and maintains a physical office within the state. This marks the first statutory recognition of cross-border telehealth encounters in Texas law and is expected to facilitate continuity of care for mobile patients and traveling clinicians, while testing the limits of interstate coverage and licensure reciprocity.

Earlier this year, the Texas Medical Board extensively reorganized Title 22, Part 9 of the Administrative Code, which governs the practice of medicine in Texas. The result was a significant overall reduction in the length of Part 9. Part of that reduction came from simplifying the existing telemedicine regulations and reducing duplication with Occupations Code Chapter 111, which also governed telemedicine. The TMB's revisions emphasize that the standard of care, informed consent, and recordkeeping requirements apply identically to telehealth encounters.

The revised rule adopts verbatim the statutory distinctions among telemedicine medical services, telehealth services, and teledentistry services in Tex. Occ. Code § 111.001, eliminating prior interpretive conflicts that had caused confusion over what activities required physician licensure. Consistent with § 111.007, the new rule explicitly reiterates that the standard of care for telemedicine is identical to that for in-person care, regardless of the technology used. It replaces older language that made compliance conditional on specific platforms or synchronous video use and confirmed Chapter 111's intent that audio-only encounters may meet the standard when clinically appropriate.

None of this is groundbreaking on its own, but does confirm the general trend toward expanding access to telemedicine and breaking down barriers to care.

II. RECONSIDERING CHAPTER 9 BANKRUPTCIES FOR PUBLIC HOSPITALS

Public hospitals—the keystones of rural and low-income care—operate on chronically thin margins and depend on exogenous revenue streams such as Medicare and Medicaid reimbursement rates, which are set far from local realities. When these institutions become insolvent or default, state law usually gives officials only a few emergency tools. The most common are receivership (appointing someone to take over management) or asset sale (selling the facility to another operator). Neither of these procedures can discharge debt or guarantee continuity of care.

A receivership puts a court-appointed manager in charge, but it doesn't erase old debts. The hospital still owes bondholders, vendors, and employees everything it did before. Because the receiver can't cancel those obligations, new revenue just pays yesterday's bills. Creditors line up in different courts, and the hospital keeps bleeding cash. Once the receiver leaves, the same debts—and often new lawsuits—remain.

An asset sale can move capital assets like real estate and equipment to a new owner, yet under most state laws the buyer inherits some of the hospital's legal baggage. Without bankruptcy protection, the sale can't be made "free and clear" of prior claims. That means the new operator could still be sued for the old hospital's unpaid bills, malpractice claims, or bond defaults. Few buyers want that risk, especially in small towns with low patient volumes.

One option for public health institutions that is receiving renewed attention is the option of a Chapter 9 bankruptcy filing (1). But Chapter 9 bankruptcy can be politically fraught. Unlike the more common Chapter 7 and 11 bankruptcies, Chapter 9 bankruptcy is only available to public entities. Under the Constitution, Congress can't force a state or its subdivisions into bankruptcy. States must authorize any local filing, but are often hesitant to do so in the face of stakeholders who worry that it will rattle bond markets and raise bond rates. Many states bar Chapter 9 filings outright or condition them on

gubernatorial consent, leaving distressed providers trapped in legal limbo. Texas, however, is among the minority of states that authorize their hospital districts to invoke Chapter 9.

In their review of filings between 1988 and 2021, Francus demonstrated that municipal bankruptcy for hospitals under Chapter 9 can in fact preserve access to essential services (id. at 528-29). Unlike city or county bankruptcies, which entangle taxation and governance, "government-business" filings—utilities and hospitals—resolve primarily operational liabilities while keeping doors open (id. at 529-30). Chapter 9's discharge authority and its ability to authorize "free-and-clear" transfers of assets can shield successor entities from tort or bondholder claims, a feature impossible under most state receivership laws (id. at 545-47). This mechanism enabled successful reorganizations in cases such as In re Valley Health System (Bankr. C.D. Cal. 2008) and In re Lower Oconee Community Hospital (Bankr. M.D. Ga. 2014), where federal bankruptcy jurisdiction prevented outright liquidation of essential rural facilities (id. at 551-55).

Properly structured Chapter 9 proceedings can maintain clinical operations, renegotiate labor and vendor contracts, and discharge unsustainable bond debt while preserving the hospital's statutory mission to serve the indigent. In regions already hollowed out by declining public grants and infrastructure decay, the ability to reorganize (rather than dissolve) may determine whether any emergency room remains within driving distance.

III. ASSIGNMENT OF BENEFITS AND THE OUT-OF-NETWORK PROVIDER

Rural healthcare is significantly more likely to be delivered out-of-network. Many health insurance plans now offer some level of reimbursement for out-of-network costs. These plans, known as point of service (POS) plans, provide access to care in areas where a provider might have fewer in-network options. For the provider, however, receiving reimbursement under these plans is often a headache.

In perhaps the preeminent case in health insurance law, Aetna Health Inc. v. Davila, the Supreme Court ruled that the Employee Retirement Income Security Act (ERISA) preempted ordinary negligence law regarding coverage decisions made by insurers administering employer-sponsored health plans (i.e., most plans) and most insured individuals. Consequently, a healthcare provider does not, by default, have a right to sue an insurer for failure to reimburse under a patient's POS plan.

The common solution to this is to have patients sign assignment of benefit (AOB) forms. Under these AOBs, a healthcare provider is treated as though they are standing in the shoes of the employee, who does have standing to sue for the missing benefits. Courts in Texas and elsewhere have upheld the validity of these AOBs, but with one important caveat: insurers are also given an effective countermove. The rights granted to a healthcare provider by an AOB are contractual. They arise under the terms of the employee's plan. Therefore, an insurer can include an anti-assignment clause that disallows any future assignment, effectively nullifying the provider's right to sue for negligent benefits decisions.

However, insurers rarely enforce their anti-assignment clauses immediately. Generally, insurers will take the view that an AOB has the effect of allowing them to pay the provider directly, or will allow them to submit appeals on behalf of the patient, all without ever notifying the provider that no effective assignment has occurred. The majority of benefits denials do not appeal, and the majority of appeals never result in a lawsuit. From the perspective of an insurer, it is simply more expedient to allow providers to persist under the belief that they have been assigned the patient's benefits, as a way of simplifying the administration of claims. Under new federal precedent, however, this system is likely about to be upended in Texas.

In Angelina Emergency Med. Assocs. PA v. Blue Cross & Blue Shield of Alabama, the 5th Circuit Court of Appeals has taken the surprising position that an insurer's failure to immediately invoke its anti-assignment rights promptly upon receiving a claim constitutes an unfair practice that should bar enforcement of the anti-assignment provision. (Full disclosure: My firm represents some of the defendants in Angelina.) The practice of barring a legal defense due to unfair practices is known as estoppel, and for many years has been strictly limited in ERISA cases. Federal courts previously held that estoppel could only apply to an ERISA plan under the most extraordinary circumstances. Now, however, it is likely to apply to a broad swath of ERISA anti-assignment clauses.

Under this new precedent, there may be more room for out-of-network providers to sue to enforce POS terms for plans that they feel should have offered superior reimbursement. However, the long-term results are unlikely to benefit either providers or patients. If these suits become common, we can expect insurers in Texas to end the practice of accepting AOB forms as direct-payment authorizations or authorizations to appeal on behalf of the patient. If insurers must assert their anti-assignment provisions promptly to keep them, they will. The 5th Circuit likely believed it was helping providers who discovered their assignments were invalid only after they sued, but the unintended result is likely to drive an even deeper wedge between out-of-network providers and insurers.

REFERENCES

1. Francus MA. Death, Bankruptcy, and the Public Hospital. Yale J Regul. 2024;41:524-71.

2. Angelina Emergency Med. Assocs. PA v. Blue Cross & Blue Shield of Alabama, No. 24-10306, 2025 WL 2984898 (5th Cir. Oct. 23, 2025)

William Biggs received his undergraduate degree from the University of Texas at Austin, where he was a member of the Psi Chi and Phi Beta Kappa honors fraternities. He attended law school at the University of Chicago, where he was a founding member of the University's Gendered Violence Clinic, assisting the victims of domestic violence with free legal aid.

In 2012, William came back to the Panhandle as a member of Mullin Hoard & Brown, LLP in Amarillo. In 2018, he established a solo practice, working on a wide range of small business and healthcare matters. Also in 2018, he joined the faculty in the Engler College of Business at West Texas A&M University, teaching business and health law courses, initially as an adjunct professor and, after 2021, as a full-time Clinical Assistant Professor. His courses cover a wide array of healthcare topics, ranging from medical malpractice, Medicare/Medicaid, employment law, and healthcare regulation.

POTTER-RANDALL COUNTY MEDICAL SOCIETY
FOUNDED 1903

2025 Re-cap!


1


2


4


5


6

7

8

1.Retired Physicians lunch. 2. Daughters of the American Revolution Luncheon, honoring past member: Dr. Evelyn Powers 3. Walk With A Doc 4. Alliance Wine Dinner 5. PRCMS BOD members at TexMed 6. Women's Physician Luncheon 7. PRCMS BOD at TexMed. 8. Walk With A Doc.

To find past Panhandle Health copies online – scan here:

Potter-Randall County Medical Society

Resident Members

Mohammed Abdelsalam, MD
Obaidah Adi, MD
Tanzina Afrooze, MD
Tayo Ahmed, MD
Olamide Ajayi, MD
Jamshaid Akhtar, MD
Aisha Al-Aadhami, MD
Heba Aldarawsha, MD
Asim Ali, MD
Muhammad Nabil Almas, MD
Jorge Adalberto Amador, MD
Aram Aslanian, MD
Lauren Baker, MD
Sheldon Baty, MD
Joshua K. Briggs, DO
Chandni Davi, MD
Noah De La Cruz, DO
Saanji Desai, DO
Jyottir Dittya Dharwal, MD
Sonya Emma Djikeng, DO
Brittany Egeh, MD
Mahmoud Elbadrawy, MD
Christopher Bryan Ellen, DO
Mahmoud Elmahi, MD
Alaa Mosad Elsaid ElZayat, MD
Sharmin Faizia, MD
Kawthar Faour, MD
Anum Farid, MD
Jessica Farlee, MD
James Faulkner, DO
Chinyere George, MD
Saima Hafiz, MD
Mai Hamaad, MD
Shereen Henin, MD
Brenden Herrod, MD
Naila Iqbal, MD
Samra Iqbal, MD
Susmitha Issac, MD
Farzina Jafar, MD
Sanmayi Jayaprakash, MD
Vaibhavi Jaywant, MD
Jebin Kaippallil Varghese, MD
Osama Karajeh, MD
Imtiaz Ahmed Khan, MD
Fatema Mahjabeen, MD
Pegah Malekazari, MD
Shreya Mallena, MD
Lois Mendez, MD
Letisha Mirembe, MD
Khondker Farhana Moin, MD
Mohamad H. Mosi, MD
Aishwarya Nair, MD
Thien Ngo, DO
Doan Ngoc Chau Nguyen, MD
Onyinyechi Victoria Okam, MD
Abiodun Okimi, MD
Kyrylo Olenych, MD
Adaugo Opiegbe, MD
Maria Ostorga Menjivar, MD
Kajal Parikh, DO
Joshua Sage Payne, DO
Paige E. Phillips, MD
Thabit Farrukh Pulak, DO
Aiman Rasheed, MD
Aizah Rauf, MD
Vidhya Ravichandran, MD
Ashley Kerstin Rook, MD
Praveen Sah, MD
Fida Saleem, MD
Fnu Sangeeta, MD
Laura Sexto Cintas, MD
Jairah Shaikh, MD
Sushil Sharma, MD
Bhamini Shekhawat, MD
Makena Renee Shields, DO
Jessica Lynn Sikora, MD
Sadia Siraj, MD
Mohamed Sleem, MD
Kirstie Smith, DO
Aisha Shukri Barkhatle Tahbib, MD
Nicholas S. Tahmassi, MD
Hassan Tariq, MD
Bailey Turbeville, MD
Onyinye Sylvia Ugoala, MD
Idoroeyin Una, MD
Sayma Yaqub, MD
Ali R. Yusuf, MD

Resident Member (Candidates)

Logaen A. Al Kubaisy, MD
Kala Baty, MD
Kai Christian Covin, DO
Mario Gamez, Jr., DO
Taha Fareukh Hassan, MD
Vivian Hoang, DO
Refat A. Jayyusi, MD
Sasha Belle Johnson, MD
Moinulhaq Pirmohammad Makrani, MD
Shaila Sharmin Saaki, MD
Syed Alishan Tirmizi, MD
Santhoshi Vaidhyula, MD

Potter-Randall County Medical Society

Retired Members

Ismaile Sherine Abdalla, MD
William Allen Anthony, MD
Branch T. Archer, MD
Grace Emily Archer, MD
Jack C. Arthur, MD
Beverly D. Axe-Lewis, DO
David F. Beggs, MD
Chand Bhasker, MD
William H. Bordelon, MD
Andrew F. Brooker, MD
Gary Lynn Brown, MD
Gary William Bryan, MD
James D. Bryan, MD
Bruce Alan Byrd, MD
Richard Bennett Clarke, MD
Dennis Bryan Dove, MD
John Robert Ellis, MD
Edgardo Trinidad Espiritu, MD
Roberto Estevez, MD
Don Leon Fong, MD
Bennie Ronald Fortner, MD
Nona Dale Fulton, MD
Milton A. Giron, MD
William A. Guynes, MD
Ann Elaine Harral, MD
George Havasi, MD
Thomas Jefferson Hickman, MD
Richard M. High, MD
Jaime Jaime Hull, MD
Dennis Alan Ice, MD
W. Mitchell Jones, MD
Milan Kalus, MD
Panpit P. Klug, MD
Sien Hwie Lie, MD
James K. Luce, MD
Lewis C. Lyons, MD
Robin Elaine Martinez, MD
James W. Mason, MD
Vicente F. Maza, MD
Rahul C. Mehta, MD
Ralph Paul Mennemeyer, MD
Daniel J. Merki, MD
Carl T. Nichols, MD
Suryakant Jashbhai Patel, MD
Steven Shofner Patton, MD
Mary Ann Dunn Piskun, MD
Dennis Patrick Plummer, MD
Loralu Raburn, MD
Leslie Evan Reese, MD
Joan Eleanor Riker, MD
Charles Winford Rimmer, MD
James Franklin Rogers, MD
Thomas August Sames, MD
Usha Sethi, MD
Vinod K. Sethi, MD
Robert Duncan Sutherland, MD
Robert Lee Taylor, MD
Victoria Jean Thompson, MD
Frank R. Vincenti, MD
Meganne Walsh, MD
Max E. Warren, MD
Michael Jay Westmoreland, MD
Sheri Richardson Williams, MD

Student Members

Jonathan Alejandro Chavira
Aliya Sophia Khan

HAPPY NEW YEAR

The Current Challenges Facing West Texas Pharmacies

by Staci L. Moss, PharmD , MS & Rebecca J. Mahan, PharmD, BCGP, BCACP, FASCP

BACKGROUND

Pharmacies are at a pivotal moment in our history, as payment for services has dwindled, pharmacy benefit managers (PBMs) are charging pharmacies more than the value of drugs to dispense them, and insurance companies are pushing patients to online or mail-order options. Brick-and-mortar stores are at risk. In response to this, pharmacy closures have occurred throughout the country. The American Association of Colleges of Pharmacy (AACP) has begun tracking closures on their website *https://www.aacp.org/article/pharmacy-closures-us.* This trend has affected both chains and independent pharmacies. In Texas, a pharmacy has closed every week for the last two years. The One Big Beautiful Bill (HB 1), signed earlier this year, will add additional hurdles for pharmacies to consider.

THE BATTLE WITH PHARMACY BENEFIT MANAGERS

Over time, the margin that pharmacies receive for filling a prescription has declined, as dispensing fees have been minimized or eliminated and payments from pharmacy benefit managers (PBMs) have declined to less than the cost of the medication. As a result, the losses are incurred by the pharmacy itself. This practice has reached a peak with the surge in prescriptions for expensive glucagon-like peptide-1 receptor agonists (GLP1s). With a cash price in the thousands, PBMs have been reimbursing pharmacies far less than the price it costs them to obtain it. Patient copays have not filled this gap. Some pharmacies were forced to not carry the product as they could not afford the losses. As a result, Texas SB1236 was signed in to law in May to hold PBMs accountable in the state and to correct these unfair practices.

THE HISTORICAL COST OF MEDICAID IN RELATION TO POPULATION (1)

In 1966, when Medicaid started, it was for low-income adults, parents and children receiving welfare, and the blind and disabled. At the time of implementation, there were 191 million Americans, and 4 million qualified for Medicaid (2%), with a budget of ten billion dollars. The expenditure was jointly funded by the state and federal governments. Within ten years (i.e., by 1976), there were 20 million Americans on Medicaid out of a total population of 216 million Americans (9%). In the late 1980's, Medicaid was expanded to cover pregnant women and babies, but total Medicaid recipients remained between 20-40 million until 2011 (forty-five years after the inception of Medicaid). In that year the Affordable Care Act (ACA) was enacted; it extended Medicaid to nine million more Americans, covering a total of 52.6 million patients

Today there are 317 million people in the United States, with 78,382,471 people on Medicaid. Almost 25% of Americans are now on Medicaid, and the its budget has expanded to $517.5 billion.

Chart 1 compares the number of Medicaid patients to the total population.

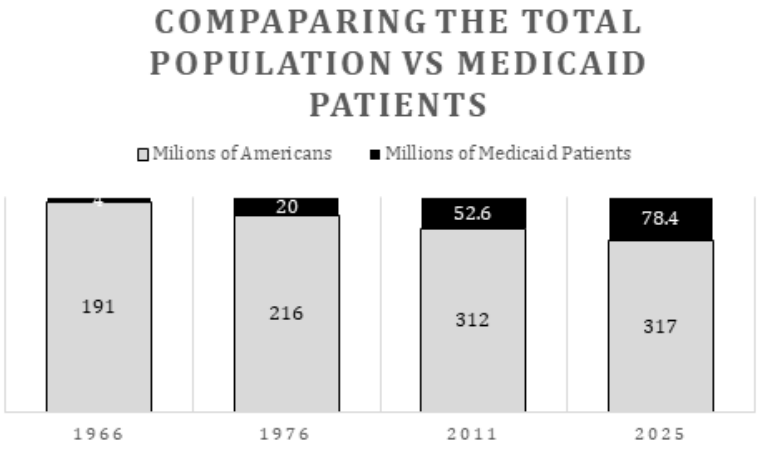
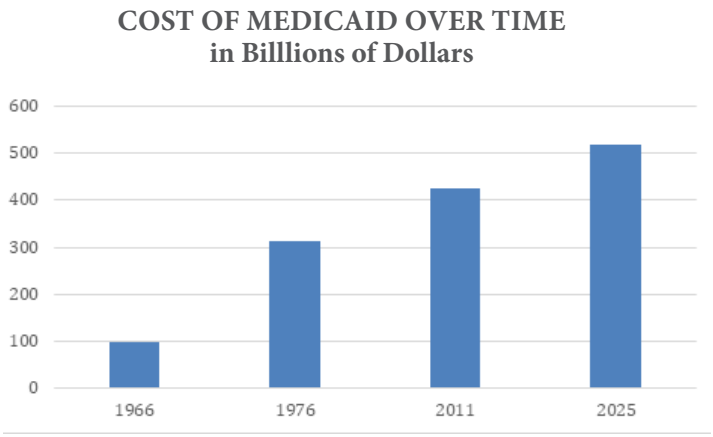


Chart 2 shows Medicaid Expenditures in 2025 dollars across time.



PHARMACY EXPANSION UNDER MEDICAID

Due to it's role in financing coverage to populations with high need but low incomes, Medicaid was designed to provide access to brand and generic prescription drugs at little or no cost to enrollees. The Medicaid Prescription Drug Rebate Program (MDRP) was created in 1990 under the Omnibus Reconciliation Act. It required manufacturers to provide partial rebates to the states, which then share them with the federal government. Federal agreements were then created to help the US government fund other programs serving other underserved populations. Medicaid prescription drug coverage was designed to expand access to prescriptions for patients at or below 150% of the poverty level. The ACA further expanded rebates to Medicaid managed care organizations (versus strictly Medicaid fee-for-service programs) (2).

HOW THE 119TH CONGRESS HB1 WILL CHANGE CMS

This year's HB 1 changes the eligibility, process, and access for Medicaid patients. Notably, by the beginning of 2027 all enrollees are required to have an address on record. Transient individuals, with no permanent residence, are at risk of losing coverage. West Texas has many contract laborers who, along with their families, move frequently and may reside in short-term stay or other locales not determined to qualify as a true address. As eligibility is reassessed more frequently, patients may lose coverage and regain it at random intervals.

Federal funding for alien immigrant women and children's healthcare has been discontinued. The implications of this change will be felt immediately by patients and providers. For women, a lack of access to prenatal care and the medication necessary to sustain a healthy pregnancy, may result in adverse outcomes and birth defects. Children born with such will have lifelong challenges and may need services which this bill has eliminated (2).

IMPACT OF HB 1 ON THE PANHANDLE

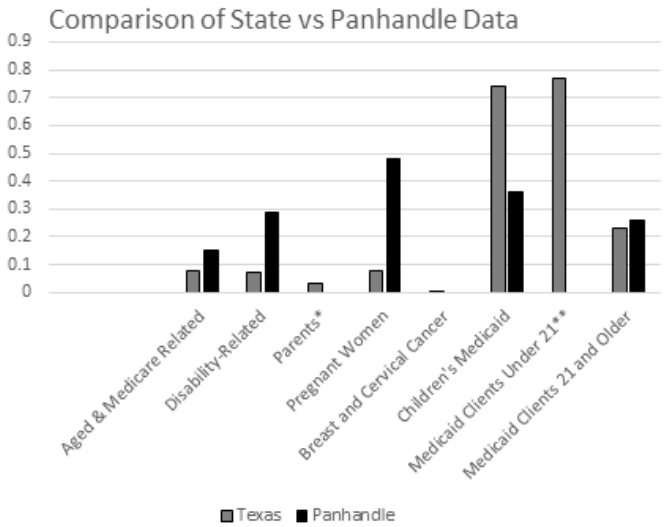
13.07% of Panhandle residents are on Medicaid, a number almost identical to the state average of 13% of rural Texans on Medicaid. Chart 3 shows the breakdown of the groups. Several features determine how HB 1 will affect the Panhandle. The first is a cap on federal spending per enrollee. From FY2025 to FY2034, federal spending on Medicaid will decrease by between $523 billion to nearly $1 trillion, shifting the responsibility to the states. If Texas decreases eligibility accordingly, as many as 15 million enrollees could lose Medicaid coverage; with the elimination of expansion match rate, this number could be as high as 30 million by 2034. With this per person cap, states will be faced with a tough choice: to use only federal funding or to make up the difference with state funds, which could be from $1500 to $2300 per enrollee by 2034. Texas is not an expansion state, so the Kaiser Family Foundation believes that the federal government will take $25.5 billion from our state (3). Again, the state of Texas will have either to match the federal government shortfall or else cut patients enrolled in Medicaid. The state of Texas is also discussing cutting the ACA expansion match rate. This allows people who have ACA and whose income is below a certain threshold to receive government assistance on their health care insurance. Some people who get dropped from both programs will choose to get health care insurance, but many will not. This will cause havoc in health care economics and on the health status of these individuals.

Another big change for community pharmacies is the reversal of Medicare Price Negotiations of 2022. HB 1 expanded the list of medications covered, but also slowed the new price control roll-out. The law decreases the number of drugs on which the government has to negotiate with Big Pharma. It also eliminates spread pricing and mandates Pharmacy Benefit Managers (PBM) to be more open on how they come up with the amount they pay pharmacies (4).

CONCLUSION

Time will tell how HB 1 will ultimately affect the people and pharmacists in the Panhandle. It could improve pharmacy reimbursement because of the PBM changes for the people who can stay on Medicaid. But, from a wider perspective,

Chart 3
***Panhandle data adjusted to fit state numbers: It is not clear whether Panhandle data relate to children and adults or just adults. Texas data relate topeople aged 65+ and people with disabilities. Some data omitted if comparable figures not available.**



federal Medicaid cuts will affect people of all ages, creeds, and religions; from immigrant women who are pregnant, to the working poor who can't afford coverage from the ACA without tax credits, to people with disabilities, to the dually-enrolled elderly. Every American will feel the changes in health care that HB 1 will have on society. For pharmacies, further changes will be needed to ensure that West Texans continue to have their local pharmacist as an accessible resource.

REFERENCES

1. https://www.statista.com/statistics/245348/total-medicaid-expenditure-since-1966/__;!!PZU9J6Y!bpaEJW-Goacb0quLtAYGvMjk8TvDLXxR4P-E_oowvKv2k3dDQlf522nXXfsLIxaejpNtdlX-hHyfHCW4QUIJBbnSlI1Q$.

2. Legislative Milestones in Medicaid and CHIP Coverage of Pregnant Women. MACPAC. 2023 Jan [cited 2025 Jul 24] Available from: https://www.macpac.gov/legislative-milestones-in-medicaid-and-chip-coverage-of-pregnant-women/

3. Williams E, Burns A, Euhs R, et al. A Medicaid Per Capita Cap: State by State Estimates. Kaiser Family Foundation. Feb.26, 2025. [cited 2025 Jul 24] Available from: https://www.kff.org/medicaid/a-medicaid-per-capita-cap-state-by-state-estimates/

4. April 2025 Medicaid & CHIP Enrollment Data Highlights. Medicaid.gov. Keeping America Healthy. Updated 2025 Jul. [cited 2025 Aug 25] Available from: https://www.medicaid.gov/medicaid/program-information/medicaid-and-chip-enrollment-data/report-highlights

A West Texas native, Staci Moss graduated from Andrews High School, and went to Sul Ross State University for her pre-pharmacy requirements. She graduated with the third class of the TTUHSC School of Pharmacy in 2002. Staci has worked at Covenant Health System and at Seton Medical Center Harker Heights. She became a Board Certified Pharmacotherapy Specialist and, in 2009, earned her Masters of Pharmacy from University of Florida. It was there that she developed a vancomycin and aminoglycoside program, and began the anticoagulation team. Staci has been with the Jerry H. Hodge School of Pharmacy for over 11 years. During this time, she has created working relationships with other departments, started giving flu shots to all credentialed employees, and has taught both third- and fourth-year pharmacy students. She works every other week at the Lubbock Impact Free Clinic Pharmacy. She has also worked in the two Class D Pharmacies that the TTUHSC has in Midland/Odessa. Her personal interests incude traveling, quilting, embroidering, and spending time with her family and friends.

Becky Mahan, PharmD, BCGP, BCACP, FASCP is an Assistant Professor of Pharmacy Practice in the Geriatrics Division at TTUHSC Jerry H. Hodge School of Pharmacy. An alumna of Butler University, she completed a community-practice residency with Penobscot Community Health Care and a Geriatric Pharmacotherapy Residency with TTUHSC/VA-North Texas. She maintains a clinical practice site at Hendrick Housecalls, a hospital-affiliated home health agency, focused on improving patient safety through the care transitions process and at home.

PROFESSIONAL CARDS

ALLERGY & RHEUMATOLOGY

Allergy Arts Amarillo
6842 Plum Creek Drive
Amarillo, Texas 79124
(806) 353-7000 | Fax: (806) 356-1124
Allergy and Rheumatology
Constantine Saddeh, MD
Rheumatology
William Brelsford, MD
Peter Shane, MD
Nilofar Syed, MD

DERMATOLOGY

High Plains Dermatology
4302 Wolflin Avenue
Near I-40 & Western
Amarillo, Texas 79106
(806) 355-9866 | Fax: (806) 355-4004
Scott D. Miller, MD
Jason K. Jones, MD
Christi A. Baker, MD
Tyler H. Enos, MD

Palo Duro Dermatology
2005 N. 2nd Avenue Ste. D
Canyon, Texas 79015
(806) 510-3376 | Fax: (806) 510-3379
Larry C. Roberts, MD, MA, FAAD
Diplomat of the American Board of Dermatology

NEPHROLOGY

Amarillo Nephrology Associates, PA
1805 Point West Ste. 100
Amarillo, Texas 79106
(806) 418-8621 | Fax: (806) 418-8606
Daniel Hendrick, MD
CV Sreenivasan, MD
Esther Ihuekwumere, MD
Adan Gonzalez, MD

NUEROSURGERY

Southwest Neuroscience & Spine Center
705 Quail Creek Drive
Amarillo, Texas 79124
(806) 353-6400
Cranial and Spinal Neurosurgery
Brett D. Errington, MD
Board Certified by:
The American Board of Neurological Surgery
Neurological & Spinal Surgery
J. Brett Gentry, MD
Board Certified by:
The American Board of Neurological Surgery
Wayne "CP" Paullus III, MD
Board Certified by:
The American Board of Neurological Surgery
Patrick Paullus, MD

OBSETRICS & GYNECOLOGY

Panhandle Obstetrics & Gynecology
7602 Wallace Blvd.
Amarillo, Texas 79124
(806)359-5468 | Fax: (806) 358-1162
Dudley E. Freeman, MD
Gregory A. May, MD
Cullen Hopkins, MD
Jamie Wilkerson, MD
Sara Bergeron, RNC, WHNP
Ashely Mullin, RN, FNF
Brenna Payne, RNC, WHNP

Texas Tech University Health Sciences Center
Department of Obstetrics and Gynecology
Canyon Campus
3404 4th Avenue, Suite D
Canyon, Texas 79015
Obstetrics & Gynecology
Tosha Brandon, APRN, FNOP-C
Brenna Melugin, APRIN, FNPC-BC

PROFESSIONAL CARDS

OBSTETRICS & GYNECOLOGY

Texas Tech University Health Sciences Center

Department of Obstetrics and Gynecology
1400 Coulter
Amarillo, Texas 79106
(806) 414-9650

Obstetrics & Gynecology
Teresa E. Baker, MD
Alexis Borden, MD
Stephen J. Griffin, MD
Brandon Haney, MD
Tanay Patel, MD
Renee Gray, MSN, WHNP-BC
Chad Winchester, MSN, WHNP-BC

Gynecologic Surgery
Teresa E. Baker, MD
Stephen J. Griffin, MD
Robert P. Kauffman, MD

Maternal Fetal Medicine
Obstetric Ultrasound
Thomas J. Byrne, MD FACOG
Shaun Wesley, MD

Genetic Counseling
Ramona Martinez, RN
Menopausal Managment
Reproductive Medicine & Infertility
Pediatric Gynecology
Gynecologic Ultrasound
Robert P. Kauffman

Women's Healthcare Associates, PLLC
1301 Coulter, Ste. 300
Amarillo, Texas 79106
(806) 355-6330 | Fax: (806) 351-0950
whaonline.com
Carin C. Appel, MD
Kathryn N. Bond, MD
Jill A. Gulizia, MD
Christina M. Huseman, MD
Amanda Murdock, MD
Keelie R. Tucker, MD
Jennifer Graham, APRN, NP-C
Maria Campbell, APRN, CNP

OPHTHALMOLOGY

Panhandle Eye Group, LLP
Specializing in the diseases & Surgery of the Eye
www.paneye.com

Glaucoma Laser & Surgery
Amber Dobler-Dixon, MD
7411 Wallace Blvd
Amarillo, Texas 79106
(806) 350-1100 | Fax: (866) 567-048

Comprehensive Ophthalmology
Robert E. Gerald, MD
7625 Fleming Avenue
Amarillo, Texas 79106
(806) 359-7603 | (800) 238-8018

Comprehensive Ophthalmology, Cataract Surgery
John W. Klein, MD
13 Care Circle
Amarillo, Texas 79124
(806) 353-2323 | Fax (806) 351-2323
(888) 393-7488

Comprehensive Ophthalmology, Cataract Surgery
C. Alan McCarty, MD
7411 Wallace Blvd
Amarillo, Texas 79106

Comprehensive Ophthalmology, Cataract Surgery, Oculoplastic Reconstructive Eyelid Surgery
W. John W. Murrell, MD
7411 Wallace Blvd
Amarillo, Texas 79106
(806) 351-1177 | Fax (800) 782-6393

PRCMS MEMBERS, IF YOU'D LIKE TO ADD YOUR PHYSICIAN/PRACTICE, CONTACT KATT.MASSEY@PRCMS.COM TO ADD YOURS!

PROFESSIONAL CARDS

PAIN MANAGEMENT

Advanced Pain Care
1901 Medi Park Dr. Ste. 2 Bldg. C
Amarillo, Texas 79106
(806) 350-7918 | Fax: (806)-418-8982
Neurosurgery
William Banister, MD
Pain Management
Luis Barboza, MD
Jenna Lane, MD
Angus Lowry, MD
Ryan McKenna, MD, MBA
Thomas Merriman, MD
Victor Taylor, MD, DABA

POTTER-RANDALL COUNTY MEDICAL SOCIETY
• FOUNDED 1903 •

SCAN HERE

A quick survey that will help us improve the Panhandle Health Magazine experience!
Call Katt @ 806-355-6854 with any questions.

RADIOLOGY

High Plains Radiological Association
1901 Medi Park, Suite 2050
Amarillo, Texas 79106
(806) 355-3352 | Fax: (806) 355-5367
Gage Agers, DO
John Andrew, MD
April Bailey, MD
Charles Brooks, MD
Crandon Clark, MD
Stanley Cook, MD
T. Jenks Currie, MD
Michael Daniel, MD
Aaron Elliott, MD
Samir Hadi, MD
Paul Hakim, MD
Michael Hall, MD
Richard Khu, MD
Megha Kureti, MD
Luke Lennard, MD
Cameron Manchester, MD
Nilay Metah, MD
Willam Parker, MD
Robert Pinkston, MD
Martin Uszynski, MD
Lawrence Zarian, MD

RHEUMATOLOGY

AMS Rheumatology
1215 S. Coulter St. Suite 302
Amarillo, Texas 79106
Janet Schwartzenberg, MD
Nicole Davey-Ranasinghe, MD

PRCMS MEMBERS, IF YOU'D LIKE TO ADD YOUR PHYSICIAN/PRACTICE, CONTACT KATT.MASSEY@PRCMS.COM TO ADD YOURS!

THE TMLT DIFFERENCE

As a physician-only carrier, TMLT is committed to safeguarding your career and peace of mind. Here's what makes TMLT the best choice for you and your practice.

- **Comprehensive coverage** — includes disciplinary/ regulatory proceedings, cyber liability, premises, locum tenens.
- **Support when it matters most** — Our claim professionals and attorneys focus exclusively on defending physicians against medical liability claims and regulatory actions. We have a deep understanding of how to defend physicians.

TMLT
Texas Medical Liability Trust

Ready to experience the TMLT difference?

- Email sales@tmlt.org
- Call us at 800-580-8658 ext. 5026
- Get a quote at https://www.tmlt.org/join#get-a-quote

Insurance made simple

Get it all with one call

- Professional Liability
- Property & Casualty
- Employee Benefits
- Home & Auto

Cliff Craig, CPCU, CIC
O: 806-376-6301 | **C:** 806-672-9534
15 Medical Drive, Amarillo, TX 79106
www.aleragroup.com

PANHANDLE HEALTH
A QUARTERLY PUBLICATION OF THE POTTER-RANDALL COUNTY MEDICAL SOCIETY

1721 HAGY
AMARILLO, TEXAS 79106

PRESORTED
STANDARD
US POSTAGE
PAID
AUSTIN, TX
PERMIT NO. 1