

2020

UAMS IDHI STROKE PROGRAM

Annual Report



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Tina Benton, R.N., BSN
Executive Director of IDHI



Tracie Hill
IDHI Administrative
Services Director

*On The Cover:
This report is
dedicated to the
healthcare heroes
across the state
caring for both
COVID-19 and
stroke patients.*

Writers: Ben Boulden, Baylee Field, Rachel Ott, Conelia Williamson, Marzella Backus, Erin Wells, Olivia Wilson, Lauren Elliott, Tim Vandiver and Robin Banks

Photographer: Sarah Eastham, Robin Banks

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Dear Supporters of the IDHI Stroke Program,

So many people strive to be number one at something, whether it's a sports team or a student in a graduating class. It truly is perceived as being the best – outranking all others. However, sometimes being number one is not all that great. In the case of Arkansas in 2010, we were number one at something none of us found pride in – Our state was number one in stroke mortality. The “best” in the nation for stroke deaths – not the badge of honor inherent to the idea of being “first” above all other states. Over 12 years ago, we decided to do something about that ranking. Alongside the Arkansas Department of Human Services Medicaid Division and a handful of pioneering hospitals in the state, University of Arkansas for Medical Sciences (UAMS) formed the Institute for Digital Health & Innovation (IDHI) Stroke Program to combat the daunting task of reducing stroke deaths and morbidities in our state through a simple idea – using interactive

video technology to transplant neurological expertise into rural hospitals without the capacity or budget to justify hiring neurologists 24/7 in their emergency departments. Nothing happens fast in health care, especially related to outcomes; however, something happened quickly in this case. This simple use of collaborative telemedicine was saving lives in rural places. We were beating that ranking of first. Now, although still lingering in the top 10 of 50 in the nation, we are proud to say we are number nine in the nation for stroke deaths, undoubtedly to the credit of the hard work of our partners, staff, and people of Arkansas. Let's all celebrate that the number 1 slot, along with ranks 2-8 are to the credit of someone else. We will drop out of the top ten, and we will continue to deliver door-to-needle times as fast as some of the biggest tele-stroke programs in the nation. In fact, we'll beat those times. Arkansas, we may be small, but we can do this.

I thank everyone for their continual fight toward being the “best.” We can be number one at lots of things, I won't complain, but let's vow to never be number one in stroke deaths again.

Respectfully,

Curtis L. Lowery, M.D.
*Director of the UAMS Institute for
Digital Health & Innovation*



Speedy Treatment Means Speedy Recovery from Stroke for Arkadelphia Woman



Kalin Gragg remembers the fear that gripped her the morning of December 8, 2019, when she found her mother on the floor of her Jonesboro townhouse displaying a different personality.

Lovanna Malone, 48, of Arkadelphia had been in town visiting her daughter for the weekend and planned to leave Jonesboro that morning. While getting up to use the bathroom and get a drink of water, Malone crashed to the floor as the left side of her body became paralyzed. Her head struck a glass coffee table as she collapsed to the concrete floor. Gragg and her boyfriend rushed downstairs to see what had happened. They assessed the situation and called 911.

They managed to help her back onto the couch in the living room. Malone spilled her water when falling and insisted on changing into dry pants. Gragg and her boyfriend tried to get her to stay put, but Malone resisted.

“I had never seen my mother so combative and defiant in my life” Gragg said. “She brought me to tears later when I got into the ambulance. She just wasn’t herself.”

The team of paramedics quickly transported Malone to St. Bernard’s Medical Center in Jonesboro, a participating hospital in the UAMS IDHI Stroke Program.

Devin Griffin, RN, B.S.N. was working in the emergency department that morning and recalls Malone’s arrival.

“You have to think about the family seeing their family member completely change.” Griffin said. “I can remember the look in Kalin’s eyes, she was terrified. I interpreted it as ‘This isn’t normal. Something is wrong. Do something.’”

Malone’s jaw and eye were fractured in the fall, and Griffin feared she might have bleeding in her brain.

Immediately, a CT scan was ordered and a live video consultation was set up through the UAMS IDHI Stroke

Program. Within moments, Margaret Tremwel, M.D., a vascular neurologist in Fayetteville, appeared on the screen. Working alongside Griffin and the team at St. Bernard’s, Tremwel determined that Malone should receive a powerful clot-busting blood thinner known as alteplase. Once the medication was administered, Griffin began preparing Malone to be transferred to UAMS Medical Center in Little Rock for an interventional surgical procedure to remove the clot.

Gragg works as a certified phlebotomist and has worked in long-term care facilities as well as physicians’ offices.

“The Digital Stroke Program was an awesome type of alternative,” Gragg said. “It was great to have a doctor on the screen and the St. Bernard’s doctor there, too. I felt good about it. It made it easier to sign the consent form for the alteplase.”

Griffin, likewise, said the IDHI Stroke Program was critical in getting the interventions necessary for the treatment of the patient in due time.

“Whenever we need intervention surgery, the Digital Health Stroke Program triples our speed in getting that.” Griffin said. “They set up the transfer and that frees up our physicians from trying to call all these other facilities.”

In transport, Malone recalls that initially she was disoriented and confused, but she started to recognize buildings and landmarks through the windows of the ambulance as they approached the Jacksonville area. She also began to regain control of her left arm and leg.

“The paramedic filled in the blanks for me as to where I was and why,” Malone said. “He told me he had never seen such a fast recovery with the blood thinner. My sisters were in Bible study and found out about my stroke. They started praying for me at that same time. In Little Rock, the CT showed showed no clots, and I didn’t need surgery.”

The care team determined Malone should spend the night in a critical care bed at UAMS for monitoring. On the second day, she was well enough to transfer to a patient room in a general ward.

“Once I got there and walked into her room, she was talking to me,” Gragg said. “I said to myself ‘Lord Jesus, thank you.’ I sure believe in a higher power and God and that’s who I gave credit to.”

Other than a slight weakness in her left side, a UAMS physician found no lasting effects from the stroke on the second day. She was discharged from the medical center the following day.

Malone still takes a prescribed blood thinner, and the injuries from her fall didn’t require surgery. Her everyday life has returned to the way it was before the stroke.

“I would advise anyone with a stroke like mine to take the alteplase because it does work,” Malone said. “The doctors kept saying they had never seen anybody recover so fast from such a severe stroke. They said I was a miracle.”

Timely Treatment Saves 27-Year-Old from Stroke

John Jansky



John Jansky was an unlikely candidate for a stroke. He does not smoke, have high blood pressure or any other contributing medical conditions. Jansky was also an unlikely stroke survivor because he lives in rural Pineville, Arkansas – several miles from the nearest hospital.

One Monday evening in December, Jansky got up from dinner with his mother to let his dog inside from the backyard. Suddenly, the left side of his body became weak, and his speech was slurred. His mother recognized his symptoms as the signs of a stroke and called 911. It is thanks to the UAMS IDHI Stroke Program, Vital Link EMS, and IZARD County Medical Center in Calico Rock that John Jansky not only survived his stroke, but he was also given a second chance at a normal life.

When Jansky arrived to IZARD County Medical Center by ambulance, he was greeted by a team of stroke-ready emergency room staff who immediately started his path to treatment and recovery. In only 35 minutes, a live

consultation had been arranged and a CT image had been received by UAMS Neurologist and the IDHI Stroke Program Medical Director, Sanjeeva Onteddu, M.D. Through collaboration with the nurses and physicians at the facility and the physician on camera, providers determined that they should administer alteplase to break up the clots and reduce the potential for permanent damage to Jansky's brain.

Feeling and function on the left side of his body as well as his speaking ability were almost completely restored 30 to 60 minutes after receiving alteplase. The care team at IZARD County Medical Center prepared Jansky to be transported to UAMS to receive further monitoring in the ICU and for follow-up testing to be performed. An MRI scan showed there had been an obstruction to the right medial thalamus and right cerebellum area of his brain. The cause of the stroke remains unknown. By Thursday afternoon, he was discharged home. By Monday, one week after his stroke, Jansky returned to work as a welder.

"Everyone at work was surprised to see me so soon and in such good shape," Jansky said. "The nurses and doctors at UAMS do care about their patients and willing to help them get better. I know also that as soon as I got in Calico Rock they took care of me right away."

He said the stroke came as a shock to him and his mother, and he gives credit for his timely treatment and rapid recovery to IZARD County Medical Center and the Vital Link ambulance crew. Jansky remains optimistic despite the unexpected health setback last winter.

"It was scary," he said "But as long as I have God on my side, I will keep truckin' forward."

Jansky's road to recovery began when Vital Link EMS responded to his mother's 911 call. Paramedics were able to quickly transport Jansky to IZARD County Medical Center for treatment



Nurse Facilitator Workshop

The day before the annual conference, facilitators and backup facilitators from each of the 54 spoke sites gathered for a day filled with hands-on educational activities. The Stroke Program team crafted the workshop to address common barriers of a successful telemedicine consult. Participants learned how they can improve care delivery through telemedicine use while increasing the satisfaction of patients and providers through improved inter-professional communication (IPC) and enhanced telemedicine etiquette. The workshop began with a humorous skit performed by the IDHI Stroke Program staff that demonstrated the wrong ways to conduct a telemedicine consult. After the skit, participants were engaged and showed their competitive side by taking part in an educational Stroke Program edition of a favorite family TV Game Show.



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In order to track each participant's learning, a pre-post self-assessment survey on IPC and telemedicine etiquette was conducted with providers. A presentation was followed by role play at skills stations, which also proved to be a successful engagement tool. Attendees took part in consultation scenarios by role playing a patient, provider, call center operator, physician or nurse with instruction to conduct a consult using ineffective IPC skills. After running through the ineffective way to practice IPC, the group joined together in a discussion of what was wrong and how it could have been a better consult. These stations were designed to mimic all aspects of a stroke telemedicine consult, emphasizing the importance of telemedicine etiquette.

Course evaluations were completed by 67 of the 97 participants (69.1%). These evaluations measured the impact of the training on

knowledge and skills. Before training, the average knowledge score for attendees was 3.2 compared to 3.9 after the training ($p < .0001$). There was a significant increase in the knowledge gained for each question in the post-survey ($p < .0001$).

Respondents also reported a significant increase in their self-assessment skill scores regarding the use of telemedicine. Before completing the skills stations, the average score was 5.9 compared to 6.7 after completion ($p < .0001$). There was a significant increase in the skills acquired for each skill metric that was measured ($p < .0001$).

By engaging with other stroke facilitators and practicing new skills, participants gave favorable feedback about the training and reported that they would be able to incorporate the new knowledge into their practice.

TOP: Olivia Wilson and Marzella Backus leading one of the several skills stations

BOTTOM: The crowd of Nurse Facilitators listen closely to a presentation addressing telemedicine etiquette





IDHI Stroke Program Conference 2019

Nearly 400 health professionals from across the state traveled to Hot Springs for the 11th Annual IDHI Stroke Program Conference. The first day kicked off with a workshop that brought together primary and back up nurse facilitators from 54 collaborating hospitals.

The next two days were packed with guest speakers and panels of experts in the fields of neurology and emergency medicine. This conference allows the IDHI Stroke Program to provide the latest evidence-based care recommendations for acute ischemic stroke. This statewide collaboration between all health professionals gives participants access to the state's experts on emergency care both before and after arrival to a hospital, as well as maintaining standards of care through quality assurance.

The conference also provides the opportunity to recognize the dedication each hospital has towards saving lives across Arkansas. The Stroke Survivor Panel is a powerful and treasured tradition at the conference. The survivors are able to recount their story from the onset of their symptoms, to their return to their home. The panel also provides the opportunity for caregivers and stroke survivors to come together and share their stories about their experiences.

Often, the healthcare providers who provided the initial care may be present in the audience and are able to share their perspectives as well. It is truly impactful to witness the many heartfelt moments when survivors are reunited with their caregivers.

Each year the conference wraps up with an awards presentation. Awards are given for excellence in stroke care.

Site Excellence Award: This award is presented to spoke sites that meet and exceed their contract deliverables, perform multiple mocks each month, carry perfect attendance at All-Sites meetings, organize impactful community outreach, meet deadlines for data submission and go above and beyond the requirements.

Door to Needle Award: This award is presented to the Spoke site with the fastest Door to Needle Time.

Director's Choice Award: This award is given to honor and recognize an individual dedicated to excellence and who has gone above and beyond to provide access to care.

Physician Champion Award: This award is presented to recognize the recipient's contributions through the use of modern technology and best practices of stroke care in Arkansas.

Certificate of Appreciation: This certificate is presented to individuals who go beyond their normal job duties to enhance and make our stroke program more effective.

Honorable Mention: This award is presented to spoke sites that meet all basic requirements of a site and made improvements to many of their internal processes, training and outreach.

IDHI Stroke Program Conference 2019

AWARDS



DIRECTOR'S CHOICE AWARD

Mandy Langston, Pharm.D.,
Stone County Medical Center,
Mountain View



PHYSICIAN CHAMPION AWARD

Bryan Shearer, MD accepted on
behalf of Raymond Griffith, DO
North Arkansas Regional Medical
Center, Harrison



PHYSICIAN CHAMPION AWARD

Scott Lewis, M.D., St. Bernards Five
Rivers Medical Center, Pocahtontas

HONORABLE MENTION AWARDS



Baxter Regional Medical Center,
Mountain Home



Helena Regional Medical Center, Helena



Lawrence Memorial Hospital, Walnut Ridge



North Arkansas Regional Medical Center,
Harrison



Ozark Health Medical Center, Clinton



White River Medical Center, Cherokee Village



Northwest Medical Center,
Springdale

More sites met
the awards
criteria this
year than any
other year!

SITE EXCELLENCE AWARDS



Ashley County Medical Center, Crossett



Conway Regional Health System, Conway



St. Mary's Regional Medical Center,
Russellville

IDHI Stroke Program Conference 2019

AWARDS

DOOR TO NEEDLE AWARD

Saline Memorial Hospital, Benton. Saline Memorial had the fastest Door to Needle Time at 27 minutes on May 8th, 2019.



CERTIFICATE OF APPRECIATION



Brian Lee, from Learn on Demand at UAMS, for his work on the production of the new training video for our spoke sites

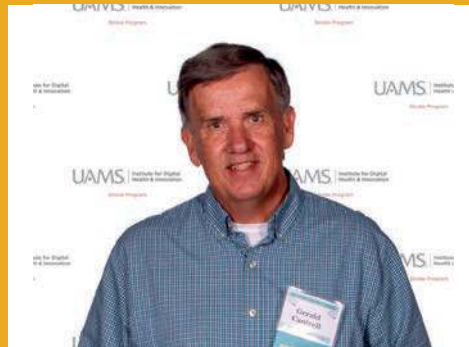


Holly Katayama, Pharmacy Tech at Baptist Springhill North Little Rock for providing BEFAST magnets to ED patients regardless of the reason for the visit, helping with active stroke consults in the ED, and assisting with community outreach



Morgan Hurst with LifeNet EMS Hot Springs for assisting with a stroke consult re-enactment at the Nurse Facilitator Retreat

EMS AWARDS



Gerald Cantrell accepting for Baxter Regional EMS, Mountain Home



Michael Henry, RN, from Conway Regional Health System accepting on behalf of MEMS Faulkner County



North Arkansas Regional EMS, Harrison



A Drill for the Real: Harrison Hospital Staff, Local Professionals Join for Mock Exercise

By Lauren Elliott, RN, *Emergency Department Stroke Coordinator for North Arkansas Regional Medical Center*

Along with other partners in and around Harrison, we on the North Arkansas Regional Medical Center stroke team recently created a mock drill related to a stroke case. The medical center's volunteer services assisted us by initiating the staging and providing us with a patient.

The story line was that our volunteer manager was driving one of the volunteers to the small airport in town to catch a plane. On the way there, his passenger began

to experience changes in his speech and weakness in his arms and legs. The driver pulled over at the local fire department and ran in for help. This allowed our Harrison Fire Department team to become involved, assess the patient and contact 911. From there, a NARMC ambulance was dispatched and arrived on scene. They contacted the ER with a Code Stroke, took the patient straight to CT and gave a patient report.

This drill was instructive and helpful because it included our local fire department, EMS, lab, radiology, house supervisors, ER and all of our newly hired graduate nurses.

It takes a team to make these processes run smoothly. Our goal is to do this large drill quarterly and involve different groups of first responders each time. We are very rural and our EMS serves three entire counties and parts of five other counties in the region.

“We are very excited to be working together with the ER, as a team, to better serve our community and improve stroke care,” said Jessica Jackson, Paramedic EMS stroke coordinator. “Seeing the long-term outcomes of the patients that we are treating is proving to motivate our crews, and help us to provide the best stroke care possible.”

This relationship with our hospital-based EMS has been extraordinary in providing quality stroke care. We have been

able to work together on educating staff and the community and in practicing drills and follow-up on patient care cases to identify areas of improvement. Having a buy-in from both sides of the care spectrum has made us a better team. The community gets to see it when we are out together providing community education, and even better, they get to see that partnership is there for them or a loved one who needs treatment for stroke.

“Our goal as healthcare providers is for each patient to have the best possible outcome, the simplest of facts is that every aspect of healthcare has to be coordinated by the team,” said Brian Unruh, EMS Paramedic manager. “To work effectively as a team, you have to practice as a team and that is what these drills accomplish. These drills will help save minutes and quality of life.”

COMMUNITY OUTREACH

Grassroots Effects on Arkansas Communities:

The UAMS IDHI Stroke Program's goal is to decrease the morbidity and mortality of stroke patients in Arkansas by improving access to care through a statewide collaboration between remote neurologists and hospitals that otherwise would not have this access.

An important component to meeting this goal is accomplished by raising stroke awareness through educating the public on the signs and symptoms of a stroke. Each hospital that participates in the IDHI Stroke Program is required to complete two stroke-related community events each month; that adds up to 108 events each month.

The Stroke Program expanded three initiatives in fiscal year 2020 including School Nurse Workshops, Mega Brain & Mini Brains, and Coloring Book Stroke Curriculum to reach more individuals throughout the state.



The Mega Brain at the River Valley Go Red Event

The Arkansas School Nurse Association holds annual statewide School Nurse Workshops. The IDHI Stroke Program team attended these workshops all over the state to brief school nurses on the impact of stroke in Arkansas and the need for increased community education. As a result, the IDHI Stroke Program team is now reaching students from kindergarten through

12th grade with stroke education in school through educational events coordinated by school nurses.

Another new tool developed to educate about stroke this year was a Stroke Activity book for students. These activity books were developed for two age ranges including more of a coloring book style for kindergarten through second grade and a version that focuses more on lifestyle and behavior changes for third through sixth grades.

Although the Mega Brain is not a new initiative for the Stroke Program or its 54 sites throughout Arkansas, the addition of Mini Mega Brains will allow for more stroke-related events with a capacity of three per day. The Mega Brain and Mini Mega Brains are inflatable brain models with images that help a person visualize their brain and what a stroke can do if a person does not seek treatment immediately after experiencing a stroke symptom.

The Grassroots Effect takes control when students hear education on stroke signs and symptoms and put that information into use by informing their family members on the severity and symptoms of a stroke. Having the local hospitals raise public awareness about stroke has been one of the overarching goals of the IDHI Stroke Program for many years. By combining the local hospitals efforts, and implementing new

Elementary Students learning about stroke treatments in Russellville



initiatives for stroke outreach such as the School Nurse Workshops, inflatable Mega Brain & Mini Brains, Coloring Book Stroke Curriculum and Sporting Events, we have seen a decrease in the time it takes those suffering from a stroke to get treatment.

Since the start of the Stroke Program, the time the stroke symptoms start to the time the individual gets treatment has decreased by 62 minutes. In addition, the community events across Arkansas have increased 28% in the last four years! The data shows that Grassroots Effects on Arkansas communities has the power to save lives.

Score on Strokes!

The Little Rock Rangers soccer team was not the only team scoring at Saturday night's game. The UAMS IDHI Stroke Program also scored big that night! The Stroke Program team rounded up individuals to educate them on the signs and symptoms of a stroke. They also brought their 'Save the Brain' game that was a huge success and people of all ages lined up to play. To 'Save the Brain', someone has to flush a blood clot out of the brain with medicine, and then retrieve the remaining clot with a special tool. By the end of the night, the crowd



Save the Brain!

had saved over 100 brains. The Stroke Program team also handed out close to 1,000 fans that explained the signs and symptoms of a stroke. Education is key to this team, and they want individuals to not only be able to recognize a stroke, but also be aware that they can receive treatment at their local hospital. It was a win for the Rangers, scoring goals all night, and a win for Stroke Program team, scoring on strokes.



The Stroke Program Team educates all ages and grade levels on stroke signs & symptoms

Friday Night Lights

Friday Night Lights is a community outreach event that incorporates the entire community no matter their ages. As we are all aware, most communities close down on Friday nights to find themselves in the football stadium rooting on their home team.

Volunteers provide stroke educational materials, answer stroke-related questions, and toss stress balls into the stands. The Stroke Program and volunteers convey BE FAST (Balance, Eyes, Face, Arm, Speech and Time) messaging for recognizing stroke signs and symptoms and the immediate need to seek treatment.

LifeNet EMS of Texarkana, was happy to collaborate in this initiative. Tina Bell, Public Relations and Marketing Director, for LifeNet, discovered the idea of Friday Night Lights football games and was eager to begin hosting their own. Not only did they begin to participate in these events, Tina and volunteers took it to an entirely new level and named their initiative "Friday Night Stroke Zone".

The following is a letter from Tina detailing their successful stroke educational initiative "Stroke Zones" that was held during the fall 2019 football season.

Tina Bell - LifeNet EMS, Tanner Ross - CHI St. Vincent, and Angie Roberts - National Park team up against stroke

We are all in the fight against stroke together!



"First, let me again thank you and everyone at Arkansas Saves for your commitment to helping us provide stroke education in the community. We have enjoyed collaborating with you the last two years to host "Stroke Zones" during football games. The magnets and prizes you provide for these educational events are the only reason we are able to do the events. This year, LifeNet scheduled Stroke Zones with seven schools and completed six events. One event was rained out. With the help of our partners, we handed out 1,400 BE FAST magnets to people across Miller, Garland, and Hot Spring Counties."

May is Stroke Awareness Month!

Every 40 seconds, someone in the United States has a stroke. Every 3 minutes and 42 seconds someone dies from a stroke (American Heart Association, 2019).

The UAMS IDHI Stroke Program and its partners are typically out educating communities across the state on stroke signs and symptoms to raise awareness, but with the COVID-19 pandemic, social distancing guidelines and travel restrictions, our team had to get creative. We challenged our 54 Spoke sites to raise stroke awareness with the use of social media.

The first stroke awareness challenge issued to the spoke hospitals was to create a stroke collage involving their hospital staff. The Stroke Program Team asked them to incorporate “May is STROKE Awareness Month! BE FAST and call 9-1-1!” into their collages. The spoke sites embraced this new idea and added their personal touch. Not only were the participants being educated, but those who viewed the post and shared on social media were educated on stroke

signs and symptoms as well. In one week over 8,000 people were reached through the power of social media.

The next challenge was to participate in a powerful stroke public service announcement (PSA). The response from the hospitals was so overwhelming that the Stroke Program team had to create additional frames for the PSA to showcase all of our volunteers. The PSA featured hospitals from across the state promoting awareness, educating about the signs and symptoms of a stroke, and assuring prospective patients that hospitals are open and ready to treat emergency conditions at any time. Innovative social media pushes have helped bridge the gap left by COVID-19. Some might have considered it impossible to educate on stroke awareness in the middle of a pandemic, but the IDHI Stroke Program spoke sites made it one of the most powerful stroke awareness months in the program’s history.

Stroke Awareness Collages



COMMUNITY OUTREACH AWARDS

Outstanding Outreach Event Award:

This award is presented to the Stroke Spoke Site with the most innovative, creative and consistent community outreach events. Total number of event attendees educated is considered. This award recognizes the development and execution of an event that significantly enhanced the stroke awareness for the community.



Erin Wells educates elementary students on stroke signs and symptoms with help from the Mega Brain!

Outstanding Facilitator Award: This award is presented to the nurse facilitator with the most innovative, creative and consistent community outreach events. This award honors the nurse that has planned and implemented significant contributions to the stroke program.



Teaching the community how to "Save the Brain"



Pam Adams of Northwest Medical Center Springdale wins the Outstanding Outreach Event Award for her community outreach efforts



Northwest Arkansas Nurses take a moment for a picture at Strike Out Stroke with the Naturals



Tim Tanner of Saint Mary's Regional Medical Center in Russellville wins the Outstanding Facilitator Award for his contributions to improving community outreach



Nurses from Saint Mary's in Russellville educate their community on stroke at a local health fair



No matter your age, you can always know how to BE FAST!

TIMELINE

A Look at the IDHI Stroke Program's Recent Past Sheds Light on its Continued Success

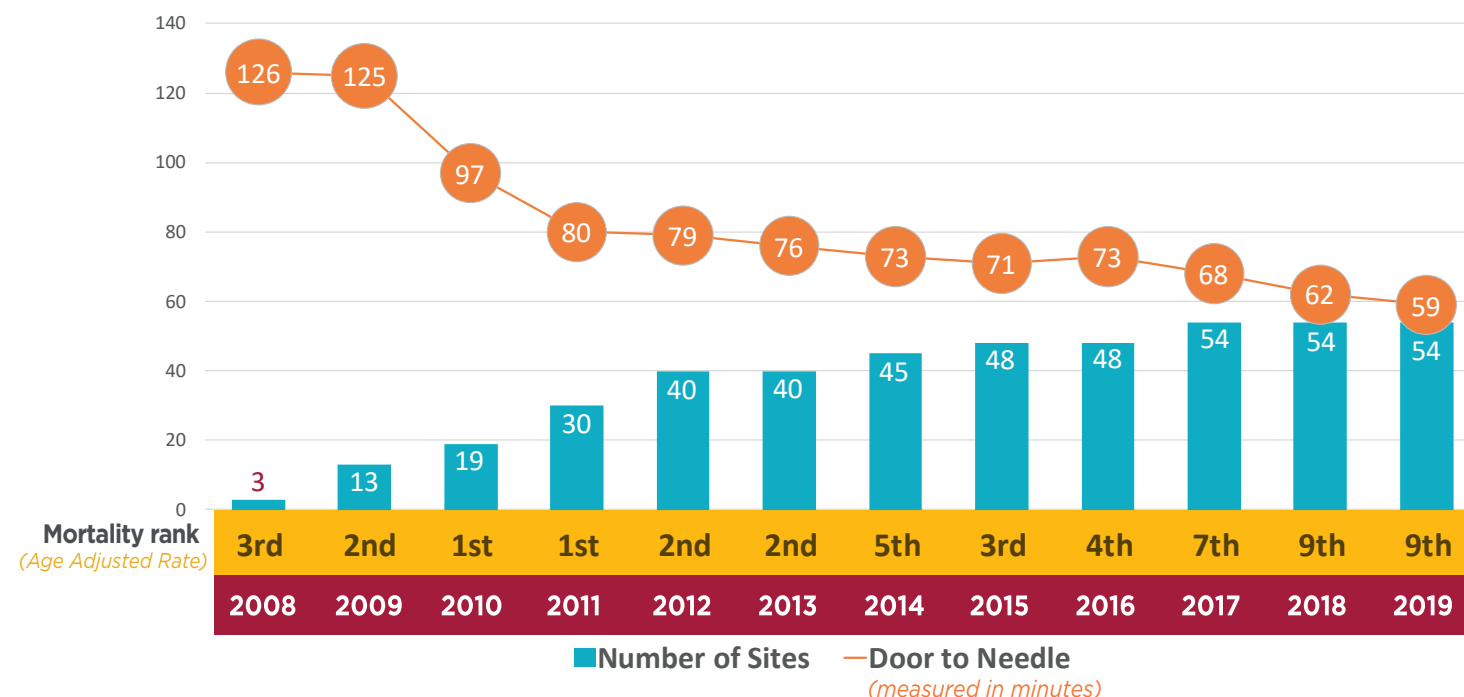
Since its beginning in 2008, the IDHI Stroke Program has been making an impactful change in the lives of Arkansas' stroke patients. The Stroke Program is comprised of a team of dedicated professionals who contribute their time and talents to improving patient care and outcomes each year. This team includes the staff at UAMS that make up the IDHI Stroke Program, the 54 nurse facilitators, ED physicians and nurses from each of the spoke sites, as well as EMS partners throughout the state.

Each year the IDHI Stroke Program team considers strategic goals and works towards developing the means to reach them. In 2017, the Stroke Program leadership had a new vision for goal setting which involved incorporating the skills and knowledge of the nurses from the sites. Roundtable discussions were held to identify specific needs and how the program could assist them in reaching their goals. Since that process began in 2017, many goals have been identified and focus groups have been formed

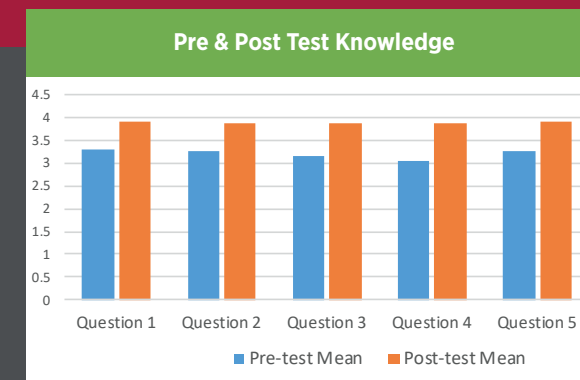
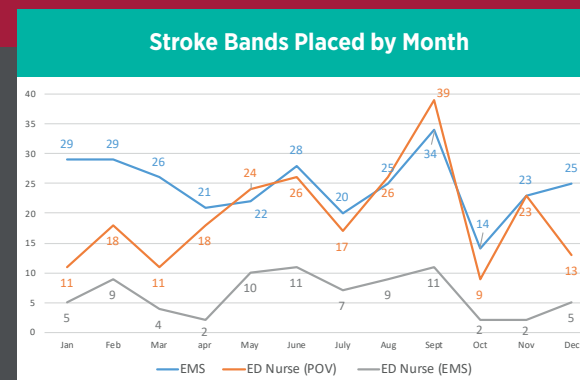
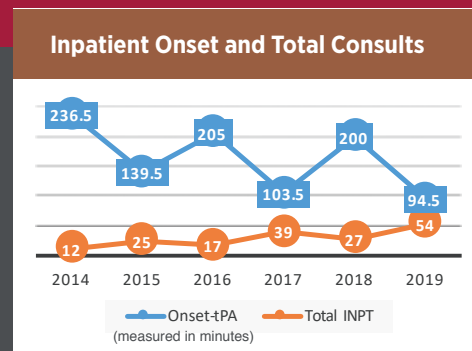
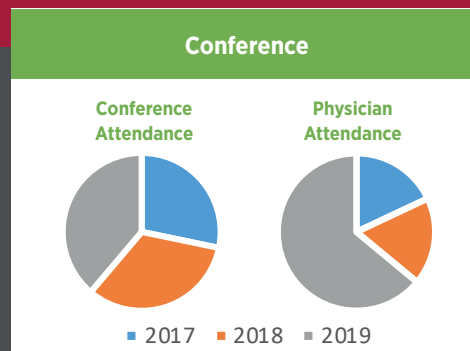
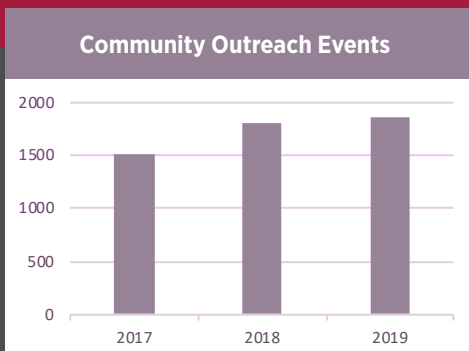
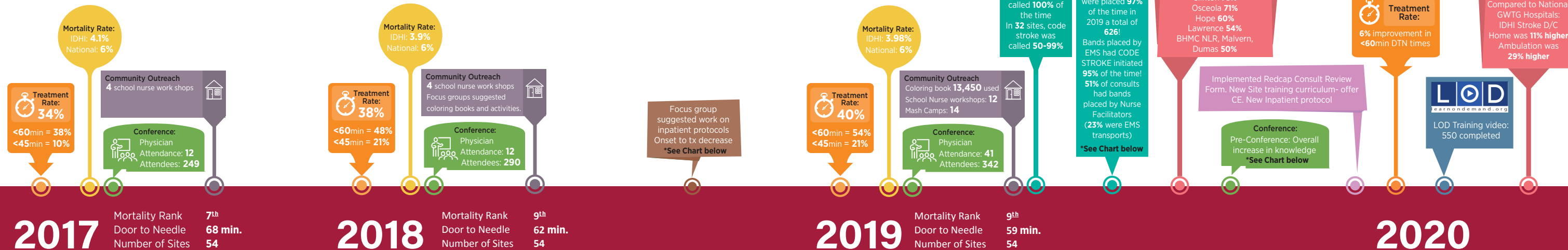
to address issues and find innovative solutions. Great initiatives have resulted from these focus groups such as increased involvement from EMS, increased incorporation of education in the community, decreased treatment time strategies, and many others.

The momentum from such success in process improvement at the sites also created a greater focus on internal metrics at the program level. Through careful observation and execution, several initiatives have been put into place to improve program evaluation and planning. As a result, processes have been streamlined, educational curriculum revised and implemented, and new quality assurance measures put into place. When looking back over these initiatives it is clear what an impact all of the hard work and collaborative efforts combined have done to make a difference in program performance, and more importantly, in patient outcomes.

As the number of sites increased, the median amount of time from Door to Needle has gone down dramatically from **126 to 59 minutes**.



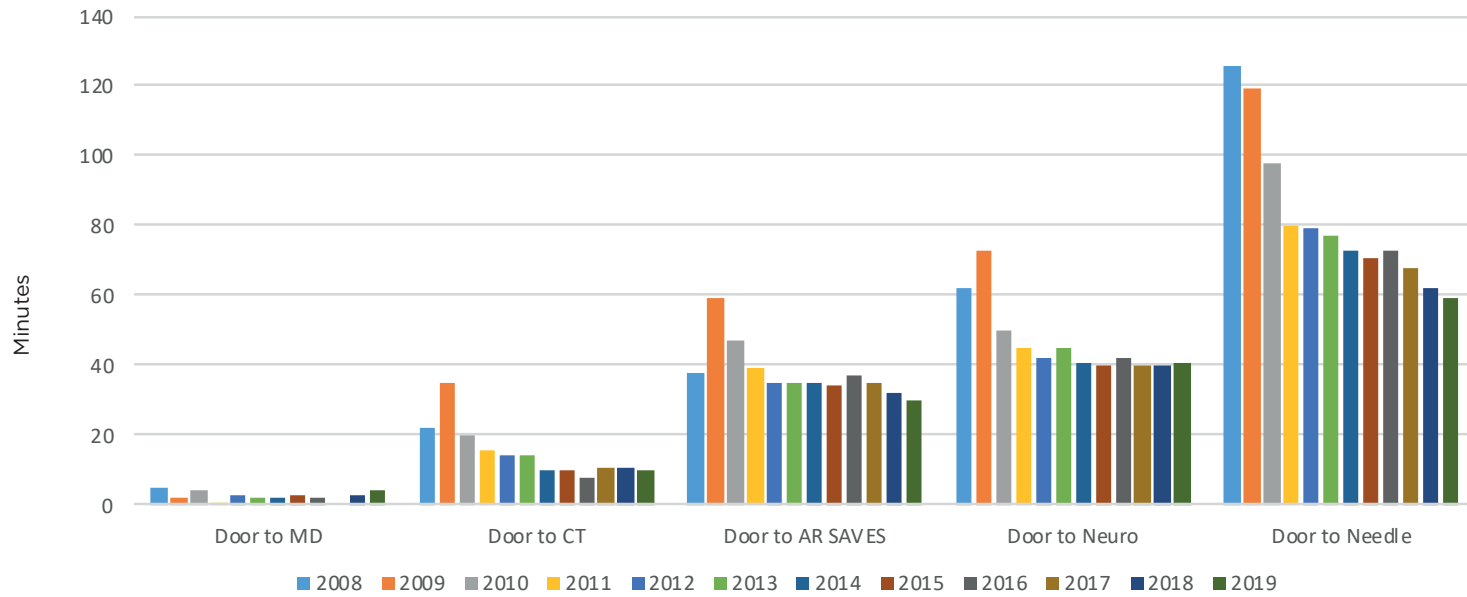
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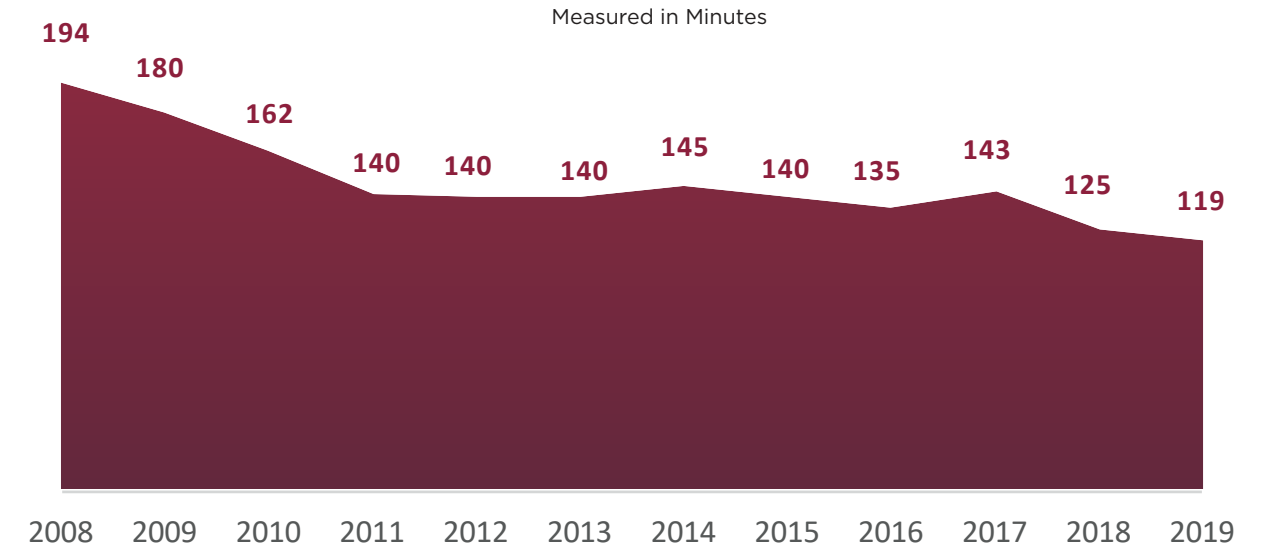
Spoke Sites	FY 2020 Totals					
Facility / City	Consults	Alteplase Administration	Consult Only	Quality Review	# Community Events	# Community Attendees
Arkansas Methodist / Paragould	33	15	18	24	30	5,419
Ashley County / Crossett	16	5	11	53	34	13,639
Baptist Health / Arkadelphia	25	9	16	17	26	906
Baptist Health / Conway	55	27	28	10	22	921
Baptist Health / Fort Smith	51	28	23	24	25	1,252
Baptist Health / Heber Springs	19	7	12	13	27	1,659
Baptist Health / Hot Spring County	15	9	6	21	23	5,418
Baptist Health / North Little Rock	44	7	37	14	24	5,701
Baptist Health / Stuttgart	12	4	8	17	23	850
Baxter Regional / Mountain Home	98	53	45	18	28	9,587
Bradley County / Warren	10	6	4	19	27	491
CHI St. Vincent / Hot Springs	85	40	45	28	46	4,230
Chicot Memorial / Lake Village	7	4	3	15	25	1,055
Conway Regional / Conway	64	27	37	122	30	7,687
CrossRidge Community / Wynne	17	6	11	21	24	2,156
Dallas County / Fordyce	13	6	7	18	41	9,936
Dardanelle Regional / Dardanelle	3	1	2	16	25	757
Delta Memorial / Dumas	11	6	5	20	25	874
DeWitt Hospital / Dewitt	7	4	3	13	26	1,927
Drew Memorial / Monticello	12	5	7	27	36	6,581
Eureka Springs Hospital / Eureka Springs	2	0	2	20	6	1,183
Fulton County / Salem	11	5	6	22	53	7,566
Great River / Blytheville	18	3	15	74	33	2,858
Helena Regional / Helena	10	3	7	12	21	1,579
Howard Memorial / Nashville	13	5	8	22	26	1,932
Izard County Medical / Calico Rock	4	2	2	19	29	2,956
Jefferson Regional / Pine Bluff	55	19	36	15	27	3,005
John Ed. Chambers / Danville	6	2	4	18	25	1,936

Spoke Sites	FY 2020 Totals					
Johnson Regional / Clarksville	22	9	13	19	27	813
Lawrence Memorial / Walnut Ridge	12	3	9	22	41	3,821
Little River / Ashdown	12	3	9	23	26	2,770
Magnolia Regional / Magnolia	16	9	7	14	25	1,888
McGehee Hospital / McGehee	3	2	1	23	27	1,819
Medical Center of South Arkansas / Eldorado	26	16	10	15	28	4,538
Mena Regional / Mena	21	6	15	19	24	1,580
National Park / Hot Springs	60	23	37	12	30	9,444
North Arkansas Regional / Harrison	58	17	41	48	40	5,614
North Metro / Jacksonville	0	1	1	7	0	0
Northwest / Bentonville	25	9	16	18	72	7,928
Northwest / Springdale	61	19	40	52	73	18,352
Ouachita County / Camden	11	9	4	22	31	1,731
Ozark Health / Clinton	14	4	9	25	28	5,911
Piggott Community / Piggott	8	1	9	27	28	698
Saint Mary's Regional / Russellville	72	29	47	24	81	23,191
St. Bernard's Five Rivers / Pocahontas	16	8	8	14	24	3,238
St. Bernard's / Jonesboro	92	33	56	16	49	4,210
Saline Memorial / Benton	40	19	17	18	29	14,005
Siloam Springs Regional / Siloam Springs	24	4	20	17	23	1,953
SMC Regional / Osceola	7	3	3	30	29	2,083
Stone County / Mountain View	18	7	12	20	32	943
Unity Health Harris / Newport	8	7	6	23	39	15,277
Unity Health White County / Searcy	75	20	50	14	28	2,912
Wadley Regional / Hope	7	3	6	35	42	2,671
White River / Batesville	42	18	22	28	27	1,652
White River / Cherokee Village	9	6	3	22	27	3,683
Total	1,475	596	879	1,319	1,717	246,786

Median Time Targets CY



Median Onset of Symptoms to Alteplase

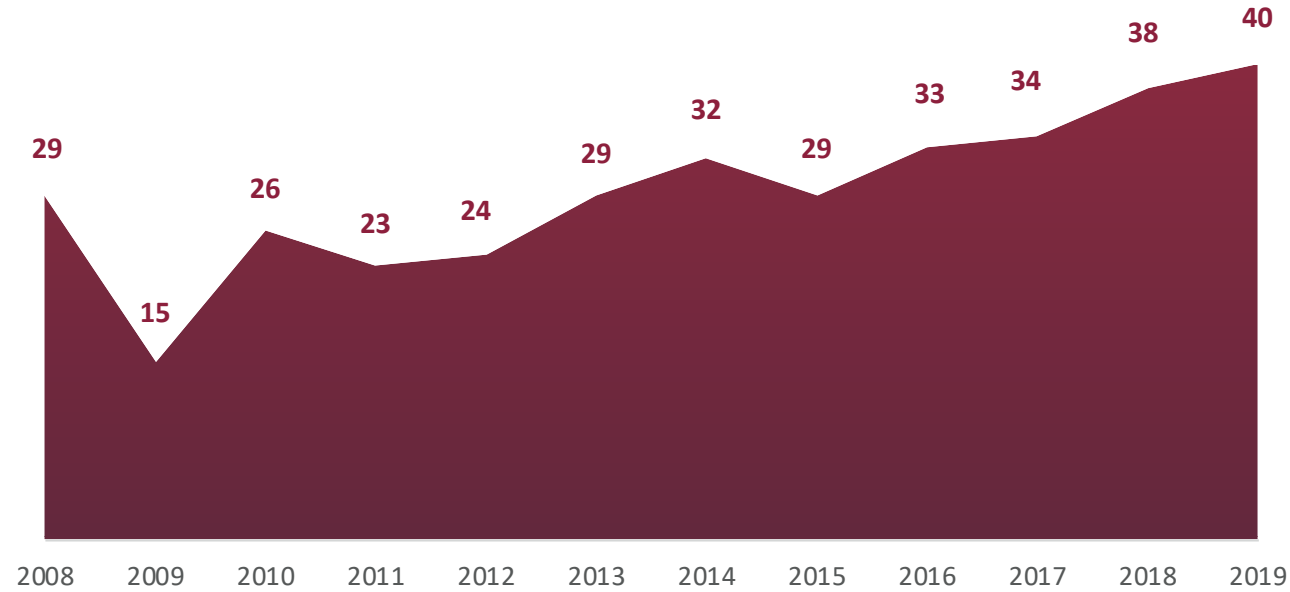


Our program has made its **best improvement** in median treatment time to date.

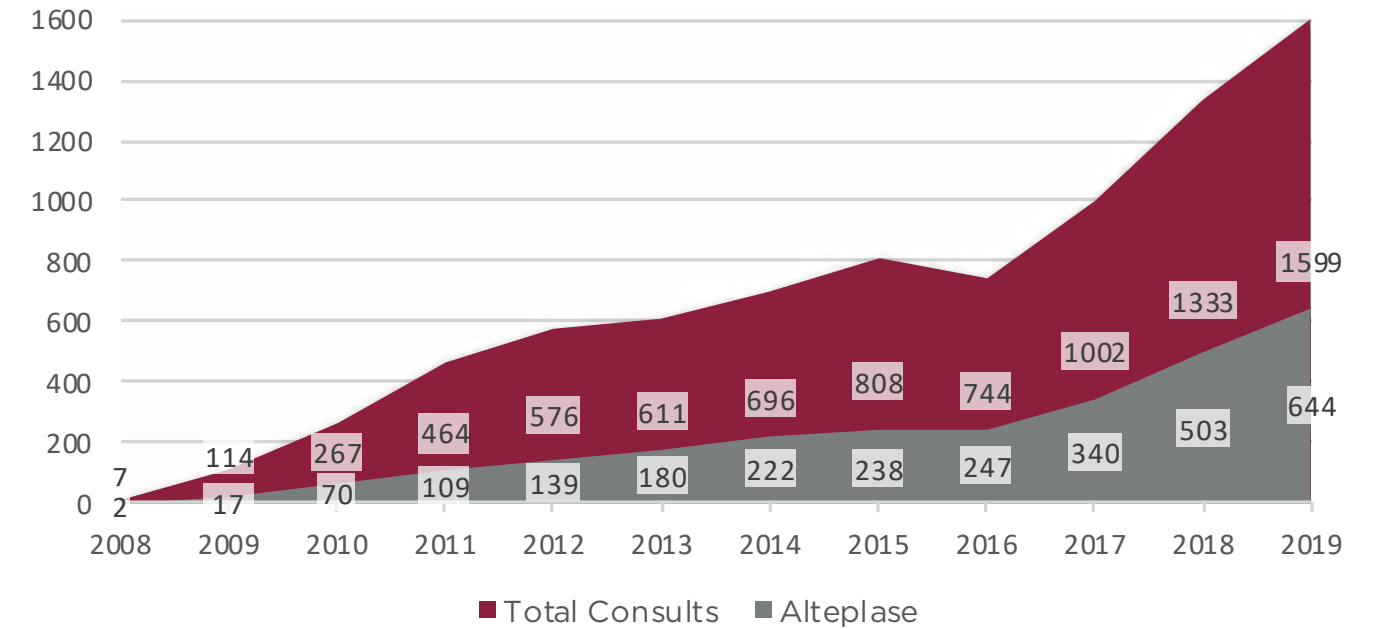
In just three years, the UAMS IDHI Stroke Program has more than **doubled** the number of patients treated.

Our mortality also decreased from **4.1%** to **3.9%**, and was lower than the national median by 2.5%.

Percent Alteplase Administered



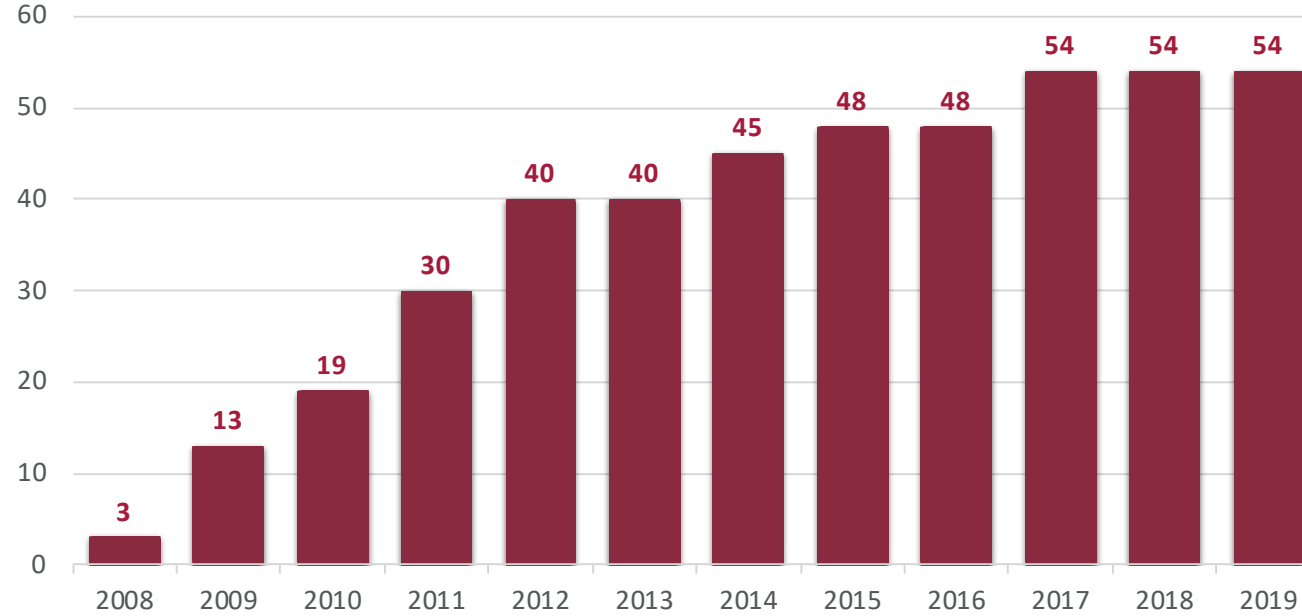
Total Consults / Total Alteplase



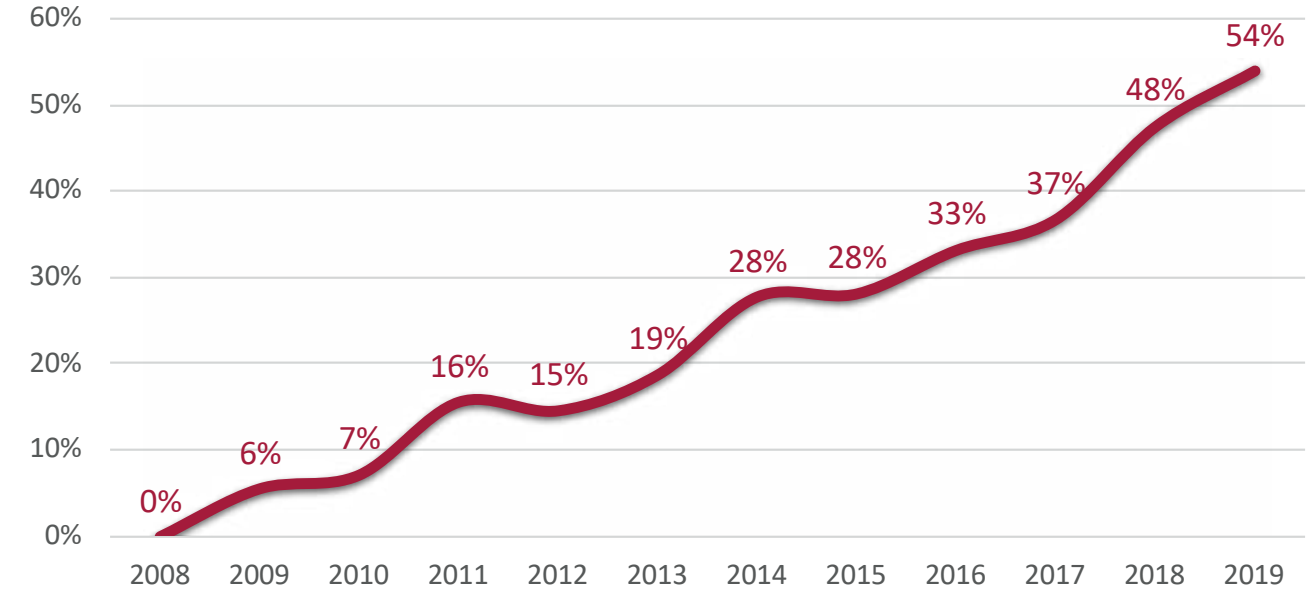
The UAMS IDHI Stroke Program had a **40%** treatment rate.

In CY19, the UAMS IDHI Stroke Program had **1,599** consults
and treated **644** patients.

UAMS IDHI Stroke Program Sites Around Arkansas



Golden Hour Target Less Than 60 Minutes



The UAMS IDHI Stroke Program contributed to

\$27 million

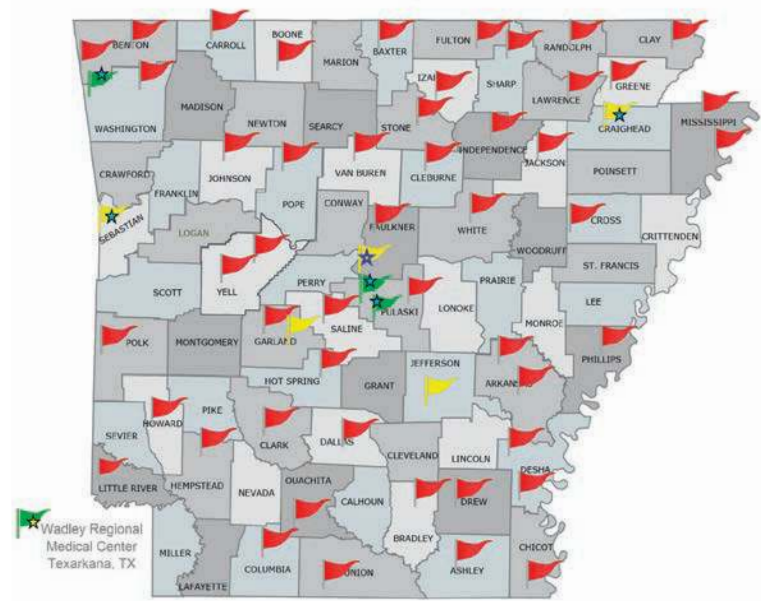
in cost savings for the care of stroke patients in CY2019.

In just **3 years**, the UAMS IDHI Stroke Program has

MORE THAN DOUBLED

the number of patients treated in 60 minutes or less.

IDHI Stroke Program Site Map

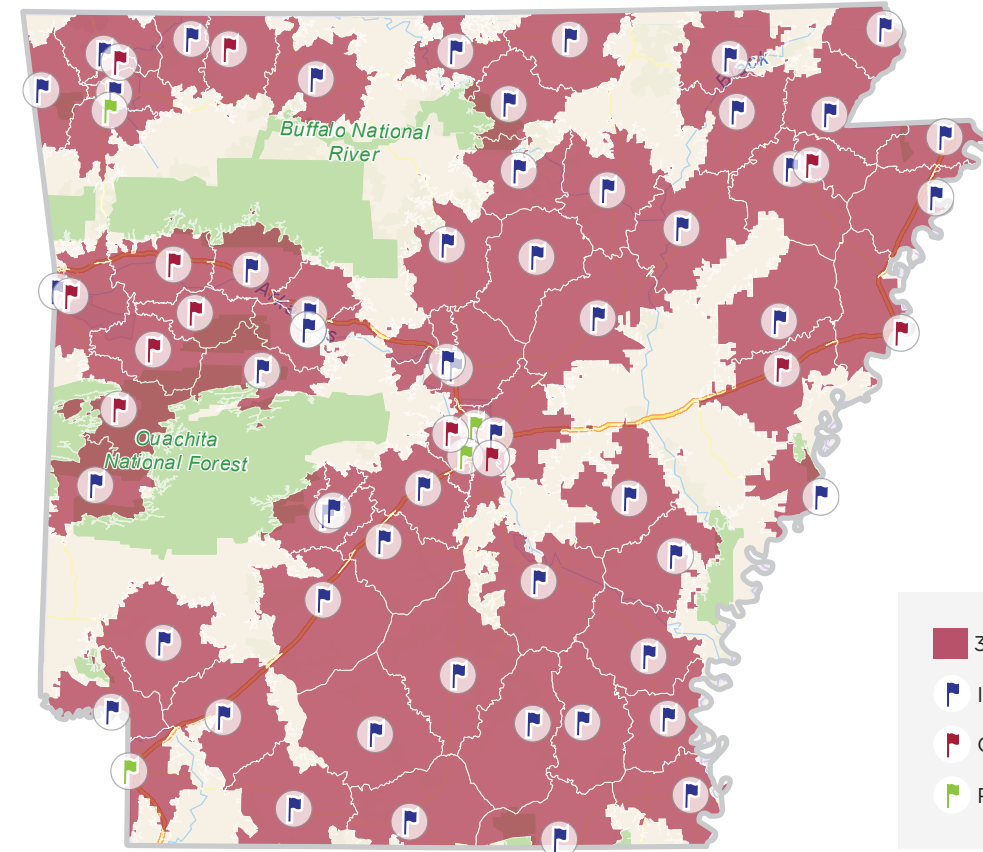


▲ Spoke sites
 ▲ Spoke & Receiving Site
 ▲ Receiving Site

Name	City	County
★ Receiving Sites (INTERVENTION & ICU CAPABLE)		
UAMS Medical Center	Little Rock	Pulaski
Washington Regional Medical Center	Fayetteville	Washington
Baptist Health Medical Center	Little Rock	Pulaski
Baptist Health Medical Center - Fort Smith	Fort Smith	Sebastian
★ Receiving Facilities (ICU CAPABLE)		
Jefferson Regional Medical Center	Pine Bluff	Jefferson
Conway Regional Medical Center	Conway	Faulkner
Wadley Regional Medical Center	Texarkana	Texas
St. Bernard's Regional Medical Center	Jonesboro	Craighead
CHI St. Vincent	Hot Springs	Garland

Name	City	County
Baptist Health Medical Center - Arkadelphia	Arkadelphia	Clark
Little River Memorial Hospital	Ashdown	Little River
White River Medical Center	Batesville	Independence
Saline Memorial Hospital	Benton	Saline
Northwest Medical Center	Bentonville	Benton
Great River Medical Center	Blytheville	Mississippi
Izard County Medical Center	Calico Rock	Izard
Ouachita County Medical Center	Camden	Ouachita
White River Medical Complex	Cherokee Village	Sharp
Johnson Regional Medical Center	Clarksville	Johnson
Ozark Health Medical Center	Clinton	Van Buren
Baptist Health Medical Center - Conway	Conway	Faulkner
Conway Regional Medical Center	Conway	Faulkner
Ashley County Medical Center	Crossett	Ashley
John Ed Chambers Memorial Hospital	Danville	Yell
Dardanelle Regional Medical Center	Dardanelle	Yell
Dewitt Hospital and Nursing Home	DeWitt	Arkansas
Delta Memorial Hospital	Dumas	Desha
Medical Center of South Arkansas	El Dorado	Union
Eureka Springs Hospital	Eureka Springs	Carroll
Washington Regional Medical Center	Fayetteville	Washington
Dallas County Medical Center	Fordyce	Dallas
Baptist Medical Center- Fort Smith	Fort Smith	Sebastian
North Arkansas Regional Medical Center	Harrison	Boone
Baptist Health Medical Center - Heber Springs	Heber Springs	Cleburne
Helena Regional Medical Center	Helena	Phillips
Wadley Regional Medical Center at Hope	Hope	Hempstead
National Park Medical Center	Hot Springs	Garland
CHI St. Vincent	Hot Springs	Garland
St Bernards Regional Medical Center	Jonesboro	Craighead
Chicot Memorial Medical Center	Lake Village	Chicot
Magnolia Regional Medical Center	Magnolia	Columbia
Baptist Health Medical Center - Hot Spring County	Malvern	Hot Spring
McGehee Desha County Hospital	McGehee	Desha
Mena Regional Medical Center	Mena	Polk
Drew Memorial Hospital	Monticello	Drew
Baxter Regional Medical Center	Mountain Home	Baxter
Stone County Medical Center	Mountain View	Stone
Howard Memorial Hospital	Nashville	Howard
Unity Health- Harris Hospital	Newport	Jackson
Baptist Health Medical Center - NLR	North Little Rock	Pulaski
South Mississippi County Regional Hospital	Osceola	Mississippi
Arkansas Methodist Medical Center	Paragould	Greene
Piggott Community Hospital	Piggott	Clay
Jefferson Regional Medical Center	Pine Bluff	Jefferson
St. Bernard's Five Rivers Medical Center	Pocahontas	Randolph
St. Mary's Regional Medical Center	Russellville	Pope
Fulton County Hospital	Salem	Fulton
Unity Health- White County Medical Center	Searcy	White
Siloam Springs Regional Hospital	Siloam Springs	Benton
Northwest Medical Center	Springdale	Washington
Baptist Health Medical Center - Stuttgart	Stuttgart	Arkansas
Lawrence Memorial Hospital	Walnut Ridge	Lawrence
Bradley County Medical Center	Warren	Bradley
CrossRidge Community Hospital	Wynne	Cross

Drive Time Map



30 Minute Drive Time
▲ IDHI Stroke Site
▲ Other Stroke Site
▲ Receiving sites only

“Over **84%**
 of all Arkansans are
 within a 30 minute
 drive to a stroke
 ready hospital.
99%
 are within a 60
 minute drive”

Stroke Program Staff

TOP ROW (LEFT TO RIGHT):

Renee Joiner, *Clinical Program Director*
Marzella Backus, *Assistant Director*
Conelia Williamson, *Program Manager, Operations*
Olivia Wilson, *Program Manager, Community Outreach*
Erin Wells, *Program Manager, Data Analytics*

SECOND ROW:

Baylee Field, *Program Coordinator*
Calvin Duncan, *Quality Improvement Coordinator*
Trish Maynes, *Outreach Nurse*
Tim Vandiver, *Outreach Nurse/EMS Educator*
Julia Weatherford, *Outreach Nurse*

THIRD ROW:

Jennifer McCurry, *Outreach Nurse*
Suzanne White, *Outreach Nurse*
Robin Banks, *Outreach Nurse*
Phillip Martin, *Telemedicine Specialist Manager*
Chastity Baldwin, *Call Center Supervisor*

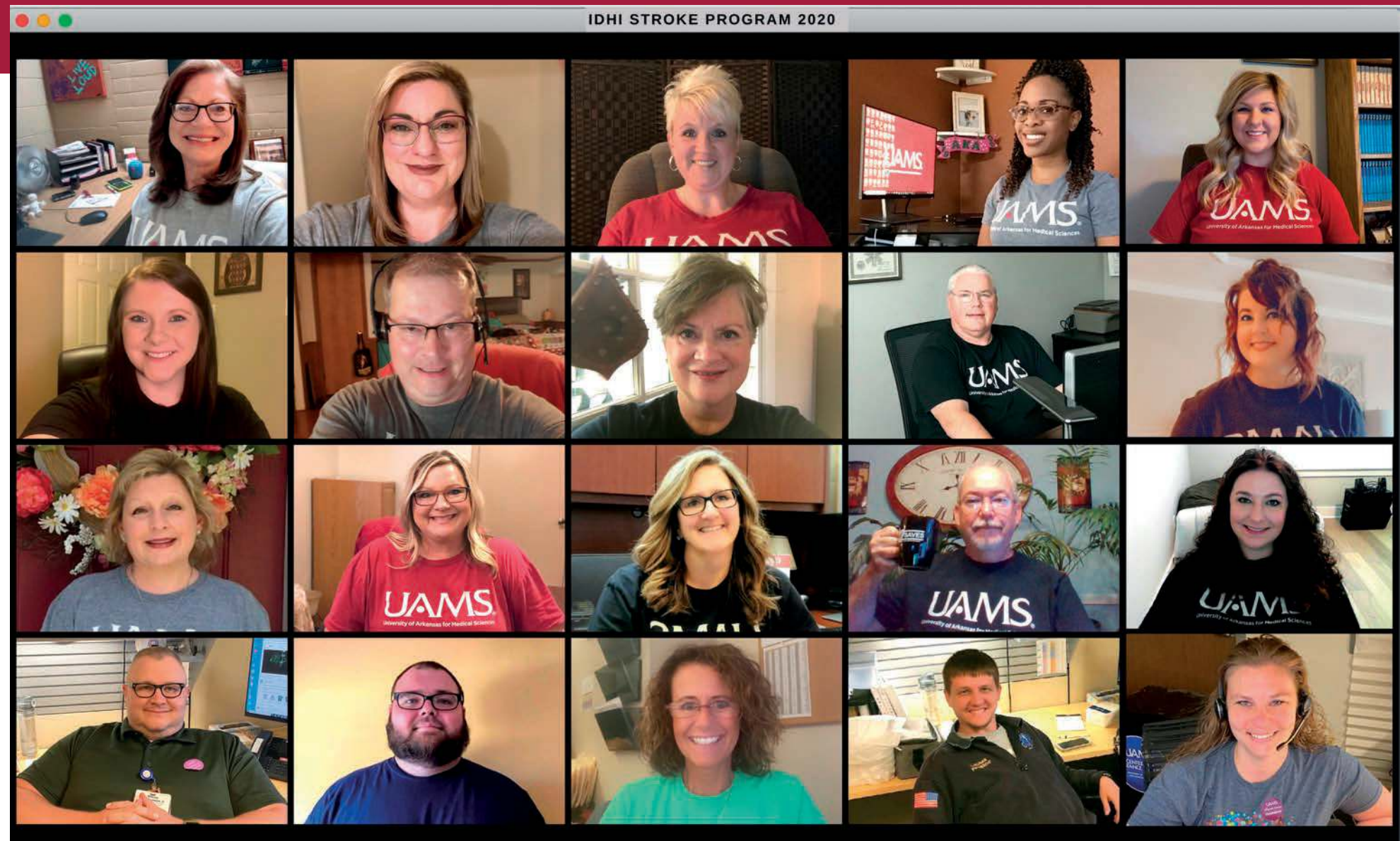
FOURTH ROW:

William Tremaine Jr., *Call Center Telemedic*
Thomas Bishara, *Call Center Telemedic*
Samantha Hanard, *Call Center Telemedic*
Christopher Hogan, *Call Center Telemedic*
Lizelle Griffith, *Call Center Telemedic*

COVID-19 proved to be very challenging during the last half of the 2020 fiscal year.

Much of this report was planned, written and completed by a team who found themselves displaced from their offices due to distancing requirements dictated by the pandemic.

Abiding by the recommendations and out of respect for each other's health and safety, we were not able to get together for this year's group photo. We are happy that our annual group photo could be published in true "2020 style". Stay safe!



From the Director



“Where you live should not determine whether you live or whether you die”

When the Institute for Digital Health and Innovation (IDHI) Stroke Program began in 2008, its mission was to reduce stroke mortality by connecting rural emergency departments with on-call neurologists via telemedicine. Since then, thousands of emergency consults have been performed, ranking Arkansas in door-to-needle times alongside hospitals with on-site neurologists and large tele-stroke programs. We have improved patient outcomes, saved hundreds of lives, and saved millions of dollars in healthcare costs, and we are only getting started.

We built on our telestroke model and expanded to additional clinical areas this year. For example, the Digital Health Sexual Assault Program provides sexual assault consults across the state by certified SANE nurses. This program is made possible through a \$4 million Department of Justice grant. In addition, by leveraging the relationships established through our stroke program, we have shared the UAMS COVID 19 response experience through ED2ED All Sites calls. We are making a difference in the greatest public health emergency of our time.

This year’s annual report is dedicated to two valued leaders who have helped to shape the IDHI Stroke Program. Tina Benton, who built the AR SAVES program from the ground up, retired in December 2019. I miss her leadership every single day. Marzella Backus, IDHI Stroke Program Assistant Director has accepted the position of Stroke Program Director for the UAMS Neurosciences Institute. I look forward to working with her in her new role. These women have made a difference in the lives of so many across the state. It is due to their vision, commitment and leadership that our program has and will continue to address gaps in care across the state. They are true public health heroes and it has been a privilege to work with them.

With appreciation,

Renee Joiner
*IDHI Clinical
Program Director*



Tina Benton, R.N., BSN



Marzella Backus, MNSc,
RN, CEN

From the Medical Director



The Institute for Digital Health and Innovation accomplished several of its goals in fiscal year 2020. We have continued to see increases in the total number of consultations, use of thrombolytic treatment, and an increase in patient transfers for thrombectomy treatments. We continue to improve our golden hour time goals, along with developing ways to track DIDO (Door in Door Out) and DODI (spoke door out and hub door in) times to better track our efficiency to transfer critical stroke patients with large vessel occlusions. As a program, we have increased the use of Computer Tomographic Angiograms (CTA) of the head and neck to identify which patients need to be transferred to seek a higher level of care and also identify the patients who can safely remain in their community’s facility to reduce unnecessary transfers.

The task of handling all stroke calls has become a reality thanks to the Comprehensive Stroke Call Center where

we can manage any type of stroke including ischemic, hemorrhagic, acute, sub-acute or chronic. We have developed and implemented provider satisfaction surveys and will soon follow this with a patient satisfaction survey. Several manuscripts and abstracts based on our program have been published highlighting the best practices and accomplishments of the program. We are continuously adapting ourselves during the COVID-19 pandemic to be able to continue to provide the best appropriate, time-based stroke care in the state of Arkansas. We could not do this without your support, especially in times like these.

Sincerely,

Sanjeeva Reddy Onteddu, M.D.
Medical Director, IDHI Stroke Program

2021 PROGRAM GOALS

- Reduce the Door to Needle times of patients who arrive by a privately owned vehicle.
- Increase education of physicians.
- Increase the number of CTAs in patients who arrive outside of the 4.5 hour treatment window

