

TRANSFORMING THE CLINICAL ENTERPRISE

Transforming Healthcare through the Use of Telemedicine

UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

KEY POINTS

- ✓ The University of Arkansas for Medical Sciences (UAMS) launched a program, Center for Distance Health (CDH), that leverages community partnerships to bring medical care directly to Arkansas's rural population through real-time video technologies known as telemedicine.
- ✓ The telemedicine network provides telemedical connectivity to more than 500 healthcare and educational entities in Arkansas and delivers an essential utility to its membership: secure, HIPAA-compliant connectivity ideal for telemedical consultation and distance education.
- ✓ Because of this network, every Arkansan now resides within a 30-minute drive of his or her nearest telemedicine site.
- ✓ CDH supports education and training through its unique, interactive online platform, utilizes state-of-the-art technology, and has developed technology that is used in neonatal intensive care units.



ISSUES AND CHALLENGES

Responding to the State's Widespread Medically Underserved Areas, Healthcare Provider Shortages, and Rural Health Disparities

In Arkansas, 73 of the 75 counties are designated as medically underserved areas and the state often ranks among the worst in the nation for health outcomes. Leaders at the state's only academic health center, the University of Arkansas for Medical Sciences (UAMS), engaged experts to build a program that could respond to this crisis.

THE UAMS APPROACH

Launching a Program that Leverages Creative Community Partnerships to Bring Medical Care Directly to the State's Rural Population by Developing and Applying Telemedicine and New Technologies

In 2003, UAMS and Arkansas Medicaid established ANGELS (Antenatal & Neonatal Guidelines, Education and Learning System), an interactive video consultation service and call center for Arkansas' rural, high-risk pregnant women and their providers. ANGELS facilitates improved triage of high-risk mothers resulting in fewer unnecessary emergency room visits and earlier access to high-risk obstetrical care among rural, medically underserved women who lack specialty care in their hometowns. Through the ANGELS Call Center, triage nurses facilitate telemedicine encounters, coordinate transports, and communicate to providers and patients. ANGELS's success helped establish the UAMS Center for Distance Health (CDH) in 2007, which applies the ANGELS telemedicine model to a range of specialty clinical disciplines needed in rural parts of the state.

CDH has partnered with healthcare competitors, insurance companies, prison systems, and federally and state-supported community clinics to bring healthcare closer to the people of Arkansas. CDH now manages ANGELS and myriad medical consultation programs that leverage real-time technologies to connect UAMS specialists to patients, hospitals, and clinics in rural locations throughout Arkansas where no such expertise exists, reducing disparities statewide.



Statewide Network Created With Federal Grant Support

CDH led the creation of a statewide telemedicine network in 2010, utilizing more than \$100 million in federal grant support. This telemedicine network, Arkansas e-Link, currently provides secure, HIPAA-compliant telehealth connectivity to more than 500 healthcare and educational entities. UAMS is just one of many hospitals, clinics, and educational facilities delivering care and education over this network; however UAMS, through CDH, is responsible for maintaining the network by ensuring each site has access to telemedical planning, training, and 24/7 support. Moreover, the CDH is the consortium leader for FCC Healthcare Connect Fund broadband discounts for its qualifying Arkansas e-Link membership. Arkansas e-Link is one of the nation's largest telemedicine networks and has made telemedicine easy to understand and access in Arkansas.

Participating Partners and Programs Expand Outreach

The Center for Distance Health has more than 20 telemedicine programs that utilize Arkansas e-Link. Among them is the highly successful Arkansas SAVES (Stroke Assistance through Virtual Emergency Support) program. Upon launching Arkansas SAVES, Arkansas ranked first in the nation for stroke mortality. Without access to neurologists, stroke victims at rural emergency rooms seldom received the life-saving medication that prevents long-term stroke morbidity and mortality. Since 2008, Arkansas SAVES has been addressing this





population health crisis and promoting health equity through educational outreach and 24/7 interactive video consults with distant neurologists for potential stroke patients in rural Arkansas. Since Arkansas SAVES' implementation, Arkansas has seen fewer stroke deaths, dropping from first in the nation to sixth in the nation for stroke mortality.

Arkansas SAVES created the model by which telemedicine hand trauma care is delivered in the state through a program that is the first of its kind in the nation. Through the hand trauma program, real-time telemedicine consultations provide triage and treatment advice for hand injuries, particularly for rural residents. In addition to immediate access to hand surgeons, which is crucial to a successful recovery, the program decreases unnecessary hospital transfers by providing specialty support to local providers to manage less severe cases at the local hospital. Additionally, the CDH-managed Trauma Image Repository exchanges patient imaging with every Arkansas hospital to expedite patient treatment and transfer, representing the only multi-institutional medical image transfer program of its kind in the nation.

Interactive Online Medical Education/Training Programs Supported by Network

CDH creates credit-bearing distance education to maintain medical certification through its unique, interactive online platform, and it is home to the HRSA-funded and designated South Central Telemedicine Resource Center that provides telemedicine support, training, and advice to Arkansas, Mississippi, and Tennessee. The CDH's Adam D. Rule Center for Distance Health Training Center (Telehealth Training Center) offers 1,063 square feet of education/instructional space dedicated to the understanding of telemedicine. The dedicated training room provides hands-on, pressure-free interaction with state-of-the-art telemedical technologies, including clinical carts for video consults and diagnostic clinical tools including scopes, an adult retinal scan/camera, and telecolposcopy exam equipment. CDH has also created first-of-its-kind technology, including a web-camera system installed in Neonatal Intensive Care Units that allows families to securely view and interact with their hospitalized infants.

While these are just a few example programs and resources offered by the CDH, the CDH's telemedical services and outreach only continue to grow as more healthcare providers begin to embrace telemedicine's value in modern care delivery. For these reasons, CDH will undoubtedly continue to make a difference in health outcomes for Arkansans and will continue to serve as a model to other institutions that wish to implement or expand similar telemedicine initiatives.



RESULTS/OUTCOMES

- High-risk Obstetrics (3,948 telemedicine consults in 2016)
- High-risk Obstetrical Call Center (175,728 calls managed and 575 maternal transport requests in 2016)
- Evidence-based Guidelines (101 obstetrical, 56 neonatal, and 69 pediatric guidelines total)
- Telemedicine Network (524 sites delivering over 73,000 hours of video conferences in 2016 and generating over \$4 million in annual cost savings for its statewide consortium members through the FCC Rural Healthcare Connect Fund)
- Physician Call Center (41,422 calls in 2016)
- Emergency Stroke (744 telemedicine consults at 52 sites, 247 individuals received a telemedicine-aided stroke diagnosis and needed medication, and 1,344 community events in 2016)
- HIV (42 telemedicine consults in 2016)
- Retinal Screening (89 newborn telemedicine exams in 2016)
- Colposcopy (1,063 telemedicine consults, 94 high-grade biopsies in 2016)
- Trauma Imaging (3,568,027 images transmitted in 2016)
- Hand Trauma (609 telemedicine consults in 2016)
- Hospitalized Infant Camera (1,000+ families, 2,600+ individual users served since 2011)
- Language Interpretation (9,378 telemedicine encounters for interpretation assistance in 2016)
- Online Education (532 healthcare professional learning modules and 86 patient learning modules total)

FOR MORE INFORMATION AND RELATED MATERIALS ABOUT THE PROGRAM

CDH Website: <https://cdh.uams.edu/>

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