

2014 Gage Awards

Reference #	7490641
Status	Complete
Name of hospital or health system	University of Arkansas for Medical Sciences
Name of project	Arkansas Stroke Assistance through Virtual Emergency Support (AR SAVES)
CEO name	Roxane A. Townsend, MD
CEO approval	Check here to confirm that your CEO approves of this project being submitted for a 2014 Gage Award
Submitter name (first and last)	Michael Manley
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Within which of the two categories does your application best align?	Population Health

1. Provide a brief description of the project. (This section should resemble an abstract for a poster presentation or an abstract for a peer reviewed journal. Include an objective, data sources, study design, findings, and conclusions.)

Background: Where you live shouldn't determine whether you live or die. AR SAVES (Arkansas Stroke Assistance through Virtual Emergency Support) represents an innovative solution to a complex, statewide problem in Arkansas. In the vast rural, medically underserved areas of Arkansas, there once was little to no 24/7 emergency department neurological support in Arkansas hospitals. As rural residents rushed to their emergency rooms with stroke symptoms, few could receive a definitive stroke diagnosis due to rural hospitals' limitations in keeping neurologists on staff. Attempts to transport these patients to the nearest hospital with an available neurologist often lost precious time in stopping stroke in its tracks. In effect, rural Arkansans were suffering the long-term consequences resulting from untreated strokes, and some of those Arkansans died. AR SAVES offered a solution that utilized existing technologies and partnerships to pioneer an intervention and network that changed the face of emergent stroke diagnosis and treatment in Arkansas.

Objective/Methods: AR SAVES links emergency room doctors at participating hospitals to specially trained vascular neurologists via live, two-way video, available 24-hours a day. The real-time video communication enables an urban stroke neurologist to evaluate a distant stroke patient to assess whether emergency room physicians should administer a potent clot-dissolving drug (tPa) to attack brain clots. AR SAVES video equipment is installed at each participating neurologist's hospital office and home at the three "hub" hospitals, making immediate consultation possible 24 hours a day for the 40 outlying, "spoke" hospital sites within the network. (Please see attached map of the AR SAVES' sites.)

Results/Findings: Hospitals that join AR SAVES are equipped with telemedicine technology, personnel training, technical support, and ongoing education. Launched in 2008, AR SAVES now serves 40 outlying sites in Arkansas. AR SAVES has reached over 135,000 Arkansans in FY2013 through more than 450 local community events. The program has increased drug administration to patients and referred patients with ischemic strokes and has increased the percentage of Arkansans within an hour's drive of a hospital in which they can be treated for stroke in a timely manner.

Conclusion: AR SAVES is a partnership among the UAMS Center for Distance Health, Arkansas Department of Human Services, and 40 of the state's 84 critical access/acute care hospitals. Led by the University of Arkansas for Medical Sciences (UAMS) Center for Distance Health, the program helps ensure timely treatment of stroke patients, even those in rural, medically underserved areas where such neurological support never before existed.

<p>1A. Attachment, if applicable (Applicable examples include a peer reviewed journal article, other content published in the literature, or a presentation at a national meeting)</p>	<p>ARSAVESSitesMap.pdf (49k)</p>
<p>2. Describe the methods use in this project. Include where, why, and how the project was accomplished.</p>	<p>When AR SAVES was created, Arkansas stood first in the nation in stroke mortality. With the expertise and leadership needed to tackle this alarming standing, the Center for Distance Health took action to expand its telemedicine network to reach rural emergency room patients. Years leading up to its inception, the majority of Arkansas's rural hospitals lacked the financial resources or patient capacity to pay for a neurologist's salary. Due to this lack of access to specialty expertise, rural hospitals aired on the side of caution when treating patients with stroke-like symptoms and often did not administer life-saving tPA (tissue plasminogen activator; a powerful blood thinner that dissolves blood clots) medication because of their limitations in definitively diagnosing stroke. In exchange, rural emergency room patients demonstrating stroke symptoms were often transported to the nearest tertiary center, sometimes hours away. When that happened, however, the window of time needed to effectively administer clot-busting drugs was often lost, leaving those patients who did suffer a stroke with either long-term disabilities or worse. As such, Arkansas's stroke patients were missing out on a quality-of-life-saving drug that significantly improves the chances of recovery while reducing permanent, stroke-related disability and, sometimes, mortality all because of a lack of access to specialty expertise. In response, leaders from the Center for Distance Health proposed a white paper to Arkansas Medicaid within the Arkansas Department of Human Services to highlight the problem and offer a solution: telemedicine-aided specialty diagnosis and treatment for Arkansas's rural stroke victims. The idea built upon an existing statewide telemedicine infrastructure and broadband connectivity by adding equipment, training, intense community outreach, and other resources in hospitals that needed help the most. Through these efforts, Arkansas Medicaid forged a partnership with the Center for Distance Health to create AR SAVES.</p> <p>AR SAVES aims to:</p> <ul style="list-style-type: none"> Increase public knowledge and awareness of stroke signs, symptoms, prevention, and treatment through robust statewide education campaigns involving radio and newspaper advertisements, public events, and in-person educational opportunities. Identify and diagnose rural stroke victims through emergency telemedical consultations and administer needed medications and follow-up care to improve their quality of life or save their life after stroke. Increase patient access to specialty stroke care and improve the level of stroke care throughout the state by providing rural hospitals with 24-hour access to stroke neurologists.

<p>3. Describe the results of the project. What data was used to support improvement results?</p>	<p>AR SAVES targeted stroke care and education due to startling statistics. In 2007, a year before AR SAVES began saving lives, the CDC reported that Arkansas had the highest stroke mortality rate in the nation with 1,873 stroke-related deaths, a crude rate of 65.8 per 100,000. August 2009 findings showed that with two certified primary stroke centers in Arkansas, only 38.4 percent of the state population was within a 60-minute ambulance drive from a hospital equipped to provide acute stroke care. When proper stroke care was over an hour away, a patient's chance of receiving tPA in time was sobering, especially considering the three-hour window mandated by the FDA's guidelines at the time. Before AR SAVES, only 1% of stroke victims in Arkansas received tPA. Further, public stroke education and awareness levels were low. In 2007 only 17.5% of Arkansans were aware of all the correct symptoms of a stroke and the need to call 911.</p> <p>Arkansas's bleak stroke statistics have improved since 2008, when AR SAVES began. The CDC reports that in 2010, Arkansas's crude rate of stroke-related deaths was 59.7 per 100,000; whereas, in 2007, the same rate was 65.8 per 100,000. With three certified stroke centers and 40 other hospitals connected through AR SAVES, more than 97.9 percent of the state population were within a 60-minute drive of acute stroke care in 2013, a dramatic increase from 38.4 percent in 2009 (see page 22 of the attached Annual Report). From May 2010 until April 2013, AR SAVES conducted over 500 training "mock" stroke calls with over 40 different hospitals. These hospitals collectively engaged in 500 AR SAVES neurologist consultations, of which more than 150 led to the administration of tPA. Further, AR SAVES' neurologists have expanded the tPA administration window from 3 hours to 4.5 hours. By expanding to 4.5 hours, AR SAVES joins virtually all major medical institutions in the United States, providing better outcomes for patients. As of the first quarter in FY2014, the 40 AR SAVES' sites administered tPA to 34% of consults, as compared to 1% of stroke victims statewide in 2007. For more of the most recent developments in project, please see the attached AR SAVES 2013 Annual Report.</p> <p>The public is more aware of stroke signs, symptoms, and prevention than they previously were. In only three short months in the first quarter of FY2014, AR SAVES health educators reached approximately 117,500 participants through over 285 outreach activities, such as health fairs, safety fairs, in-services, orientations, school visits, and other special events, such as Tackle Stroke and Strike Out Stroke. The events took place throughout the state, allowing community members in even the most rural areas the opportunity to learn more about stroke.</p>
<p>3A. Attachment, if applicable (Only graphically displayed data such as charts will be accepted. Data should include baseline and improvement data)</p>	<p>2013AnnualReport.pdf (1480k)</p>

4. Describe what happened as a result of the project. Was the improvement related to the intervention? Can the project be duplicated by other organizations?

At the core of AR SAVES' evidence-based intervention is the drug tPA (tissue plasminogen activator), a powerful blood thinner that dissolves blood clots. tPA can completely reversed the disabling effects of ischemic strokes for those who receive it in time. Thanks to real-time telemedicine, stroke patients throughout Arkansas with ischemic stroke can receive this potent clot buster if they are evaluated by a stroke neurologist within 4.5 hours of their first symptoms.

Public education is key to increasing the percentage of patients eligible for tPA. It has been reported that community education produces a tenfold increase in number of patients who receive tPA (Archives of Internal Medicine). AR SAVES' outreach staff works with communities across the state to make the public aware of the signs and symptoms of a stroke, such as sudden weakness, numbness, unsteady gait, and visual and speech problems, and to encourage the public to call 911 should they recognize any of these symptoms.

Of special note, one AR SAVES program manager developed statewide clinical protocols to complement AR SAVES' efforts. The state protocols ensure hospitals address stroke victims through consistent, equalized, efficient, and effective care. Each nurse, physician, and EMS provider must understand how to provide the needed care in a systematically designed effort to provide treatment for the patient. With that, all personnel must know his or her role before the patient arrives, as the time allotted to administer the drug could have been wasted before the patient arrives at the appropriate stroke-treating hospital.

Further, any hospital that joins the AR SAVES project must certify all involved personnel in the National Institutes of Health Stroke Scale (NIHSS) program. According to NIH, the Stroke Scale is an online training and certification program that is "primarily used by healthcare providers to document proof of competency in the use of the NIHSS with regulatory agencies." Not only does this ensure evidence-based care of patients, it also acts as a quality improvement tool for the 40+ hospitals involved in AR SAVES.

AR SAVES is a project that can be duplicated by other organizations. Once a hospital in Arkansas decides to join AR SAVES, CDH nurses provide mock stroke demonstrations and other hands-on education to the nurses, doctors, and emergency room staff involved in stroke victims' care. Additionally, IT staff are supported by Center for Distance Health technical employees through a 24/7 hotline, ensuring helpful communication is a phone call away. Another 24/7 call center, staffed entirely by nurses and other medical professionals, contacts an AR SAVES stroke neurologist and connects him or her to the site requiring such consultation, providing the necessary, life-saving communication to enable tPA administration and/or other healthcare direction.

<p>5. Describe how patients, families, and if appropriate, community was included in the work.</p>	<p>Patients treated through the project and their families become involved in both the clinical and educational arms of the project. Initially, when a patient is brought into a rural hospital's emergency room, the patient may or may not be able to communicate. At this instance, the patient's family becomes vitally important; AR SAVES staff often rely on family to make healthcare decisions for the patient or provide the patient's history. Additionally, patients share their success stories through outreach materials in newspaper stories, magazine articles, and advertisements, such as the story of Leslie Bennett in the Annual Report, attached under Question 3.</p> <p>The public education arm of AR SAVES is the critical element to raise public awareness about the signs of stroke and the availability of the program at their local emergency room. Despite advances in stroke therapy, much of the public remains uninformed about stroke, and few stroke patients go to the hospital in time to receive treatment. Health education can increase community awareness and may decrease the time it takes patients to get to the hospital. AR SAVES' health education experts provide more than 500 outreach activities a year throughout Arkansas. In the first quarter of FY2014, AR SAVES health educators reached approximately 117,500 participants through over 285 outreach activities, such as health fairs, school visits, and other special events, such as Tackle Stroke (see attachment). The events took place throughout the state, allowing community members in even the most rural areas the opportunity to learn more about stroke.</p>
<p>5A. Attachment, if applicable (Applicable attachments include documents created for patients, families, or community members or by them as a result of the project)</p>	<p>PicturesofCommunityOutreach.pdf (420k)</p>
<p>Last Update</p>	<p>2013-12-13 19:30:40</p>
<p>Start Time</p>	<p>2013-12-13 19:05:04</p>
<p>Finish Time</p>	<p>2013-12-13 19:30:40</p>