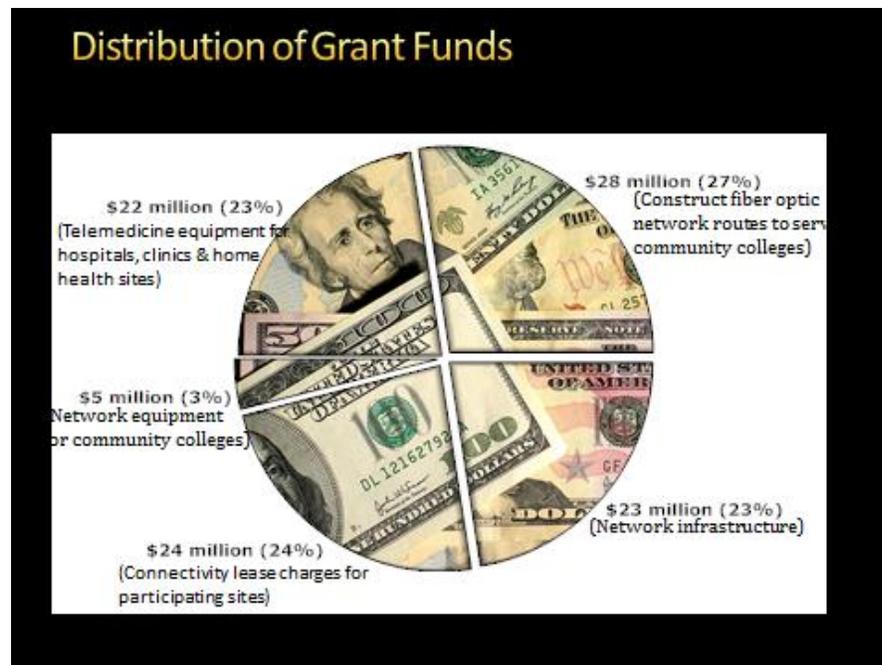


**UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES
PRESENTATION TO THE SENATE SUBCOMMITTEE ON COMMUNICATIONS,
TECHNOLOGY, AND THE INTERNET**

Margaret Mead wrote, “Never doubt that a small group of thoughtful, committed citizens can change the world, indeed, it’s the only thing that ever has.”

A small group of 10 set around a table in 2009 and thought of how we could change the face of health care here in Arkansas by utilizing proven cutting edge technology and patient centered outcome care, while spreading it across the entire state. UAMS Center for Distance Health (CDH) applied with thousands of others for a Broadband Technology Opportunity Program grant being administered by the Federal Department of Commerce. Partnering with over 400 Community Anchor Institutions (CAI) state wide, the Department of Commerce saw we had something special that would be more than just expanding broadband. On August 1, 2010, the UAMS Center for Distance Health was awarded \$ 102 million dollars for the deployment of a Healthcare/Educational video/imaging/and data network later known as Arkansas e-Link.

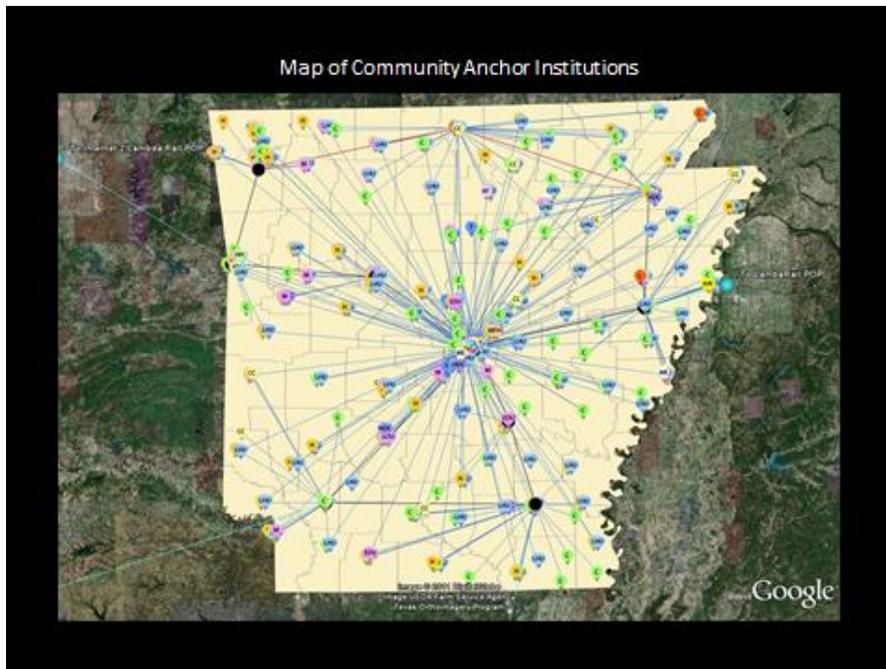


The funded service areas encompass:

- *Every county in the state (75)
- *Every economically distressed county in the state (69)
- *Every county in Arkansas within the Mississippi Delta, the most distressed area of the country (42)
- *Every medically underserved county in the state (73)
- *135 communities

The project partners with community anchor institutions including:

- *Every acute care hospital, county health clinic, and center on aging
- *Every four-year state university and all but one state two-year college
- *All state human development centers
- *A majority of federally qualified community health centers
- *A majority of mental health clinics and home health agencies
- *The state's only academic medical center
- *The state's only publicly owned fiber optic network (AREON)
- *The state's only bioterrorism network
- *The state's only trauma network
- *Eight public libraries
- *An ambulance service
- *Other clinics, centers, and educational units



The upgraded Arkansas Telehealth Network integrated with AREON in a “hub-and-spoke” system that ensures dedicated healthcare, higher education, public safety, and research activities, freeing existing circuits for public Internet use. Hubs and spokes have received bandwidth upgrades, interactive video equipment, and/or public computers based on their needs.

*Primary Hubs represent 48 sites serving large numbers of end-users that will connect to a statewide fiber network for upgrades of 100 Mbps+, enabling simultaneous management of up to 40 broadband transmissions, including distance education or clinical video conferencing, imaging transfers, record transfers, remote monitoring, and health information exchange.

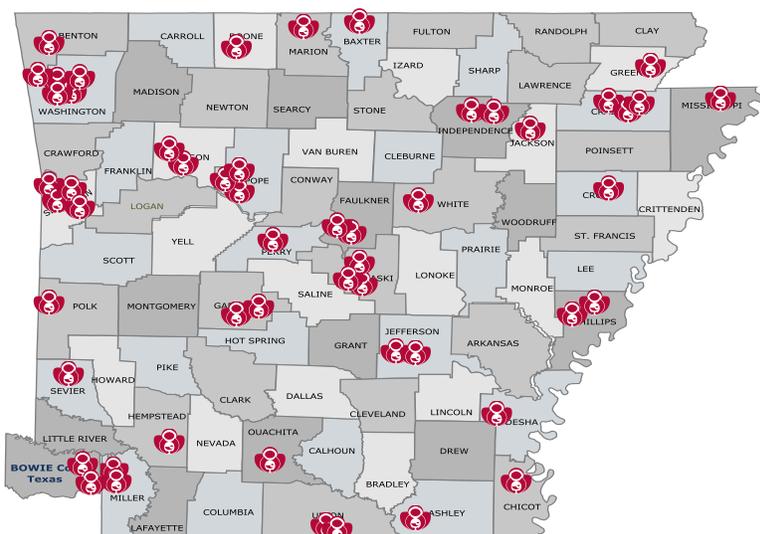
*Secondary Spokes represent 74 regional sites upgraded to 10 Mbps at 59 sites and 20 Mbps at

15 sites via dedicated point-to-point connections are providing up to 15 distance education or clinical video conferences, imaging transfers, record transfers, and remote monitoring.

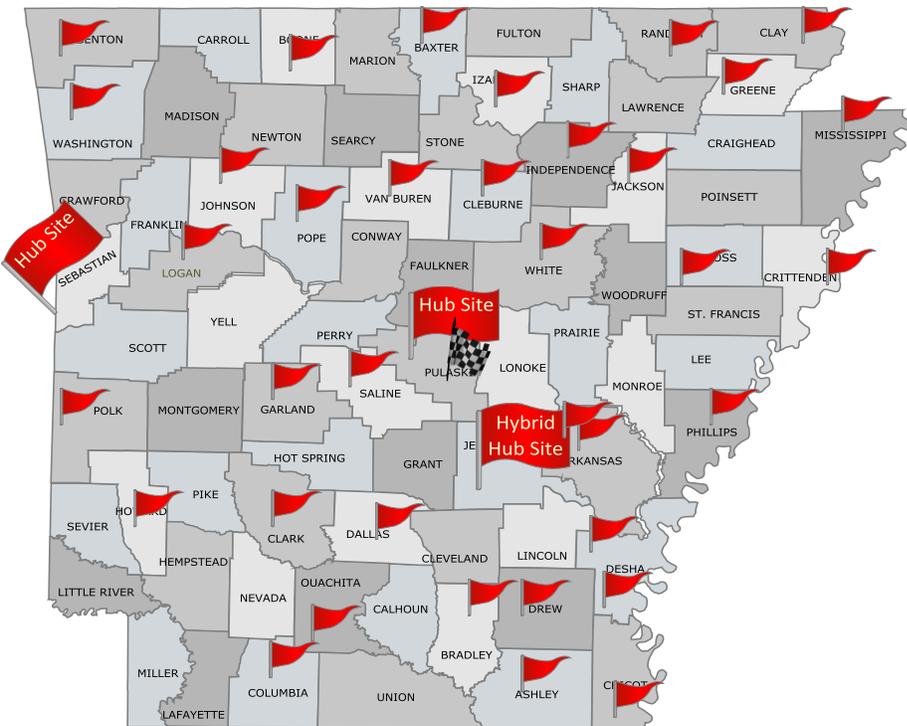
*Tertiary Spokes represent 352 sites serving primarily rural areas that will receive upgrades or new lines of 1.5 Mbps at 154 locations, which enables one simultaneous distance education or clinical video conference, image transfer, and record transfer. All tertiary spokes will receive equipment upgrades.

This solution did not compete with Internet Service Providers but rather contract with ISPs to provide network services.

Built on the backbone of existing prior telehealth programs infrastructure , ANGELS (Antenatal Neonatal Guidelines Education Learning System) and AR SAVES (Stroke Assistance through Virtual Emergency Support), the potential in the very near future of adding many healthcare specialties on this middle mile highway was possible through this project. ANGELS (Antenatal Neonatal Guidelines Education Learning System) was set up to take care of high risk pregnancy patients across Arkansas. The limited Maternal Fetal Medicine specialists in 2003, which were all centrally located in Little Rock, instigated the need to better serve these patients in a new way. Driven by having better patient outcomes by using this technology to take our specialists out to the patients rather than always having the patients come to them in Little Rock was the answer. ANGELS currently has 23 active telemedicine clinics across the state, and are currently serving over 3000 consults per year via the network. Our most fragile patients now have access to the care they deserve to ensure both moms and babies have the best outcomes possible.



Taking that existing knowledge and broadband network that has been created, a proposal was again made to seek how we could better care for our acute stroke patients here in Arkansas. In 2009 when AR SAVES was started, the state was ranked 50th in stroke mortality, and overall, we were only administering the clot dissolving drug t-PA used in ischemic stroke cases to less than 1% of all eligible patients. Again, just for the fact there weren't enough vascular neurologists as resources in our community hospitals. After 4 years of building our program, AR SAVES currently serves 41 hospital Emergency Departments with only 4 vascular neurologists from around the state. On average, we are administering t-PA 30% of the time to all consults, with this number improving monthly. Time is of the essence with these patients, so not all make it under the time limitations. The AR SAVES program is not only making a difference in small rural hospitals such as Osceola, Dewitt, and Helena, but also in more urban areas such as El Dorado, Hot Springs and Fayetteville.



I can report that as of September 30, 2013, the Arkansas E-Link project will be fully deployed and all money spent according to the terms of the grant. The AR e-Link Program has been highlighted as a success by the NTIA at several meetings and events. But it doesn't stop here. We will continue to work to put more health and educational applications on this highway as we continue forward. This middle mile infrastructure has made a great investment into the broadband infrastructure to benefit the local communities in many ways. The next level of the individual patient for healthcare, or student in education, is coming fast and furious. You've heard "There's an app for that"? We are here to say that there is such a thing. Thousands of mobile healthcare and educational apps are being developed and deployed as we speak. The eventual migration onto this system will assist even more with better outcomes for the citizens of Arkansas.

In closing, Arkansas is now one of the top connected Telehealth/Education states in the country. This network provides the very foundation required to build a comprehensive plan to tackle the state's laundry list of health adversities. A centrally-managed, comprehensively-collaborative telehealth network will allow opportunities to build any number of programs. Our citizens will benefit tremendously from the Arkansas e-Link project, meeting needs of healthcare access to limited resources in both rural and urban areas. This project builds upon relationships, technology, and support within the healthcare community, with one unifying theme held by all, **"where you live, shouldn't determine whether you live or whether you die"**.

Who may I contact for further information?

Curtis Lowery, MD
University of Arkansas for Medical Sciences
4301 West Markham Street, #518
Little Rock, Arkansas 72205
(501) 686-5847
E-mail: LoweryCurtisL@uams.edu

Michael Manley, RNP, MNSc
University of Arkansas for Medical Sciences
4301 West Markham Street, #518
Little Rock, Arkansas 72205
(501) 526-7453
E-mail: ManleyMichaelO@uams.edu

Tina Benton, RN
University of Arkansas for Medical Sciences
4301 West Markham Street, #518
Little Rock, Arkansas 72205
(501) 686-5986
E-mail: BentonTinaL@uams.edu

