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ANGELS Annual Report

Helping Arkansas women and their babies secure care they otherwise might not receive

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On The Cover

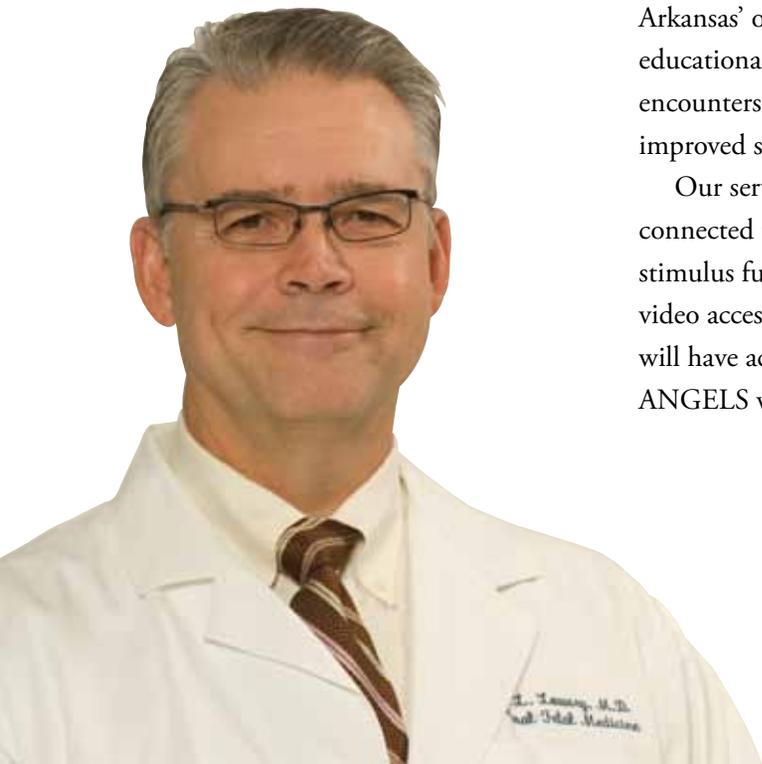
Drs. Nick and Holly Beth Willis whose care and wellbeing are overseen by the ANGELS program.

Leadership

In 2002, I created the Antenatal and Neonatal Guidelines, Education and Learning System (ANGELS) in response to a statewide, immeasurable need — a need that demanded a new way of thinking and an improved approach to high-risk obstetrics that could decrease disparities, improve maternal and neonatal outcomes, and maximize the use of scarce health care dollars. Today, ANGELS continues to grow and respond to those needs through an integrated system of care, communication and collaboration between Arkansas Medicaid, the Arkansas Department of Health and Arkansas’ obstetrical and neonatal providers. As our ongoing evaluation continues to prove, ANGELS is helping meet the needs of Arkansas’ families and their providers.

ANGELS has resulted in two-way communication between the tertiary care center and Arkansas’ obstetric providers through the ANGELS 24/7 Call Center, regularly scheduled educational conferences, and case management of patients through telemedicine and face-to-face encounters. Because of ANGELS, patients receive the best care Arkansas can offer through this improved system of clinical support and mutual learning.

Our services continue to grow utilizing innovative technology. Every region of the state is connected to the ANGELS telemedicine network, and yet we continue to expand. Through federal stimulus funding secured in August 2010, every county in Arkansas will soon have interactive video access. This exciting development means that every patient and provider in Arkansas will have access to ANGELS specialty consultation and advice in the coming years. The result? ANGELS will touch the lives of even more mothers and babies in Arkansas.



A handwritten signature in black ink, appearing to read "Curtis L. Lowery, M.D.".

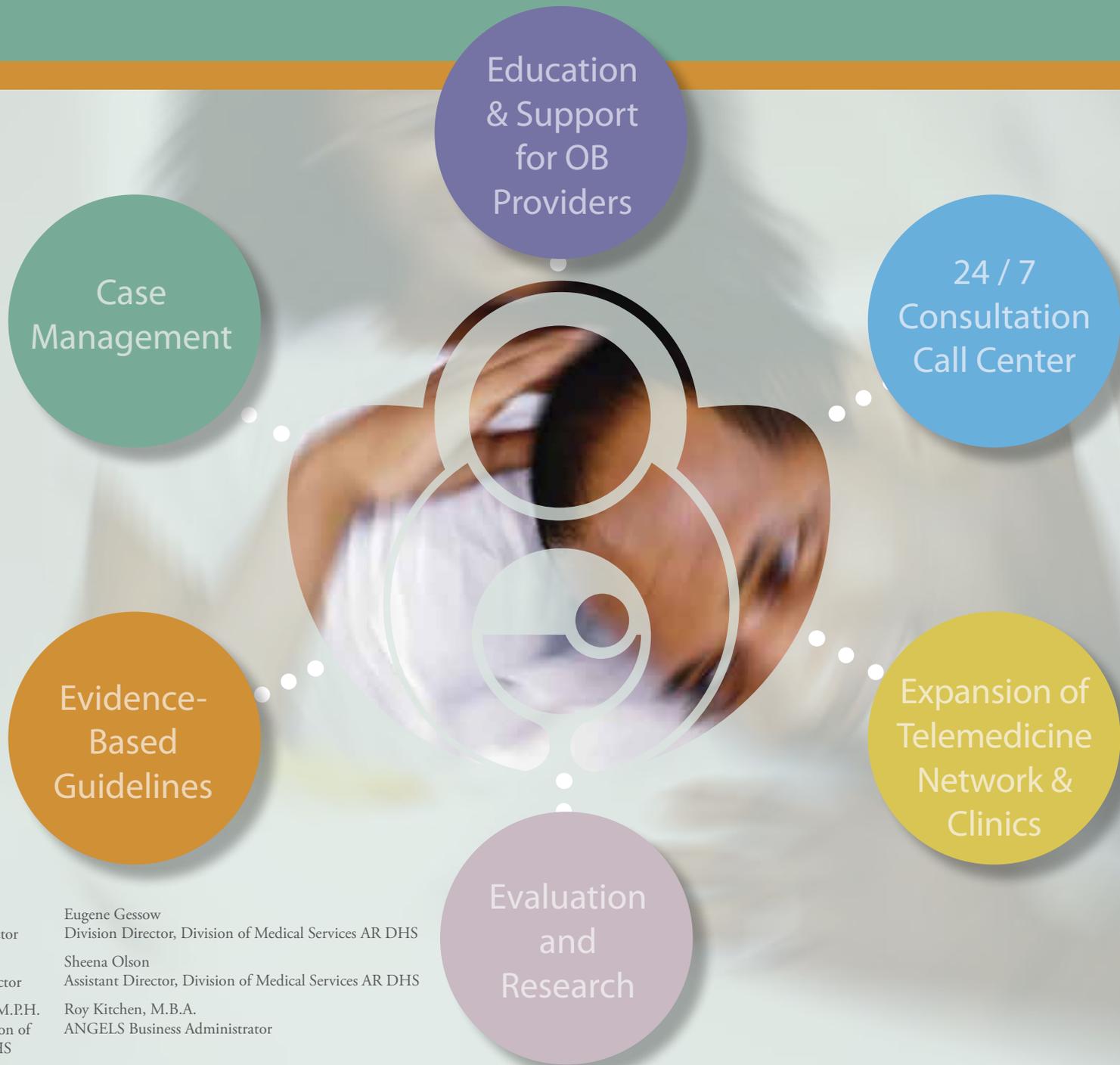
Curtis L. Lowery, M.D.
ANGELS Medical Director

Overview

ANGELS completed its eighth year in 2010 and the success continues. Each of the components of the six-pronged ANGELS model is used to support Arkansas obstetrical and neonatal providers and their high-risk pregnant patients. Ranging from 24/7 support via the telephone call center to education and direct care, all are available face to face as well as via interactive video. Through the support of state agencies, obstetrical health providers and subspecialists, ANGELS continues to provide the necessary connections to bridge complex health systems to rural Arkansas patients. ANGELS is achieving its original goal – fewer preterm births, thus less morbidity and mortality for Arkansas mothers and babies.

The ANGELS mission is to ensure that every woman in Arkansas at risk of having a complicated pregnancy receives the best possible perinatal care.





From left to right:

Curtis Lowery, M.D.
ANGELS Medical Director

Tina L. Benton, R.N.
ANGELS Program Director

Judith McGhee, M.D., M.P.H.
Medical Director, Division of
Medical Services AR DHS

Eugene Gessow
Division Director, Division of Medical Services AR DHS

Sheena Olson
Assistant Director, Division of Medical Services AR DHS

Roy Kitchen, M.B.A.
ANGELS Business Administrator

Education and Support



Driving medical and nursing education innovation

Under the careful direction of Barbara Smith, R.N., and in collaboration with Sarah Rhoads, A.P.N., Tesa Ivey, A.P.N., and the OB-GYN medical team, the ANGELS' educational endeavors continue to thrive. Interactive video (IAV) teleconferences provide the capability of distance learning and collaboration unheard of just a few short years ago. Physicians, nurses and other health care professionals can now participate from many sites in educational events previously offered only in an academic medical center environment.

Our statewide nursing teleconference, **ONE Team**, has enjoyed collaborating with nurses across the state to provide education for obstetrical, neonatal and advanced practice nurses on the first, second and third Fridays of every month. A collaboration with Arkansas Children's Hospital began in January 2010 to add pediatric nursing teleconferences on the fourth Friday of every month.

Fetal Anomalies Interdisciplinary Management (FAIM)

teleconferences enter their third year, with discussions regarding perinatal care of babies with abdominal wall defects, ambiguous genitalia, urinary tract abnormalities and heart defects. Specialists, including pediatric surgeons, urologists, geneticists, cardiologists, neonatologists and obstetricians review the newest and the most-proven medications and techniques to optimize the health of these babies. A parent panel also convened this past year to help educate health care providers regarding the emotional impact that having a baby with significant medical needs brings to a family.

OB/GYN Grand Rounds has been an integral educational component of the UAMS obstetrics and gynecology department for many years. It is now available via interactive video teleconferencing and offers relevant clinical and research presentations on topics relating to obstetrics, gynecology and women's primary health care.

During the **High-Risk Obstetrics Teleconference**, active learning begins with a case study to exemplify the topic to be discussed. Physicians across the state participate with specialists from multiple disciplines such as

maternal-fetal medicine, neonatology, anesthesiology, psychiatry and internal medicine contribute expertise and management practices. This continuing medical education forum contributes to the development of obstetrical guidelines as an educational strategy to improve practice and positively impact patient outcomes.

The schedule for upcoming teleconference topics is available on the ANGELS website at <http://www.uams.edu/angels>.

Comprehensive Neonatal Review and Certification Preparation Class

ANGELS and the NICU at UAMS partnered to provide a three-day course for neonatal nurses in October 2010. The course was taught by Linda Juretschke, Ph.D., RNC-NPT, APN/NNP-BC, CCNS, a nationally known neonatal nursing expert. Forty-two nurses attended the conference and received 21 continuing education credits. The conference and speaker received excellent reviews. The plan is to repeat the conference every three years.



From left to right:

Tesa Ivey, M.N.Sc., A.P.N., Sarah Rhoads, D.N.P., A.P.N.,
Stephanie Wyatt, M.N.Sc., A.P.N.,
Barbara Smith, R.N., C.P.C., Gordon Low, M.S.N., A.P.N.

Annual Conference on Perinatal Care

This year's conference, titled "Translational Health Care: From Brains to Bench to Bedside – How a team approach can change the health of women and children in Arkansas," was held May 6-7, 2010, at the Little Rock Holiday Inn – Airport. Orchestrated by Stephanie Wyatt, A.P.N., the conference committee hosted more than 240 attendees. This number represented a much lower attendance than in previous years potentially explained by a depressed economy. Attendees included maternal-fetal medicine specialists, obstetricians, neonatologists, psychiatrists, family practitioners, pharmacists, advanced practice and other nurses, sonographers, social workers and many more.

For the first time in recent years, this conference hosted a pre-conference, geared toward NICU personnel. This educational activity offered 3.25 credit hours of continuing education and was held at a local restaurant. Attendees enjoyed dinner while learning from local experts in obstetrics and neonatology. The main conference lasted a day and a half and began with a keynote address by Curtis Lowery, M.D., on the importance of translational research. This

discussion set the tone for the remaining conference with each speaker addressing gaps in research for their respective topics. Guest speaker Susan Barr, M.D., a uro-gynecologist, led two enlightening discussions on her specialty as it relates to pregnancy. The nurse versus physician break-out sessions were held again this year and brought a positive response.

“Always very informative!”
 “A very much needed service – keep it up!”
 “Great work!”

Support for the ADH: The ANGELS – Health Department Connection

During 2010 ANGELS and the Arkansas Department of Health continued to expand on existing collaborative programs as well as find exciting new ways to provide both high-risk prenatal and gynecological care to the state's most vulnerable women.

1. **REGIONAL TELEMEDICINE:** Our regional site, situated at the Hempstead County Health Unit, continued to provide high-risk obstetrical consults for ADH patients in the southwest region of the state. During 2010, this program provided 204 tele-consults with 50 patients.
2. **IN-CLINIC TELEMEDICINE:** Expanding on the concept of reducing patient travel burden and keeping care close to home, ANGELS and the ADH established telemedicine connections with six local health units and one AHEC to provide high-risk obstetrical consults directly to the patient's local provider. During 2010, this program provided 372 tele-consults with 144 patients.
3. **APN TELEPHONE CONSULT LINE:** To further facilitate this connection when telemedicine consults are not possible or practical, ANGELS continued to provide telephone back-up to ADH nurse practitioners who provide routine prenatal care at the Health Units. During 2010, the telephone program provided 121 consults.



“The UAMS ANGELS Telemedicine program has been a wonderful blessing in so many ways! Since I have been with the Arkansas Department of Health I have had numerous high-risk patients that local providers are unwilling to accept into their practices. Thankfully, these patients are able to stay in their local community to receive care, because I have the ability to do a phone consult or now schedule with telemedicine in our clinic. I enjoy being involved in the care of my clinic patients, and I am able to do this because of the wonderful program that UAMS offers. It is truly a relief to know I can contact someone to consult with on these patients. You will not be able to stop me from singing your praises!!! ”

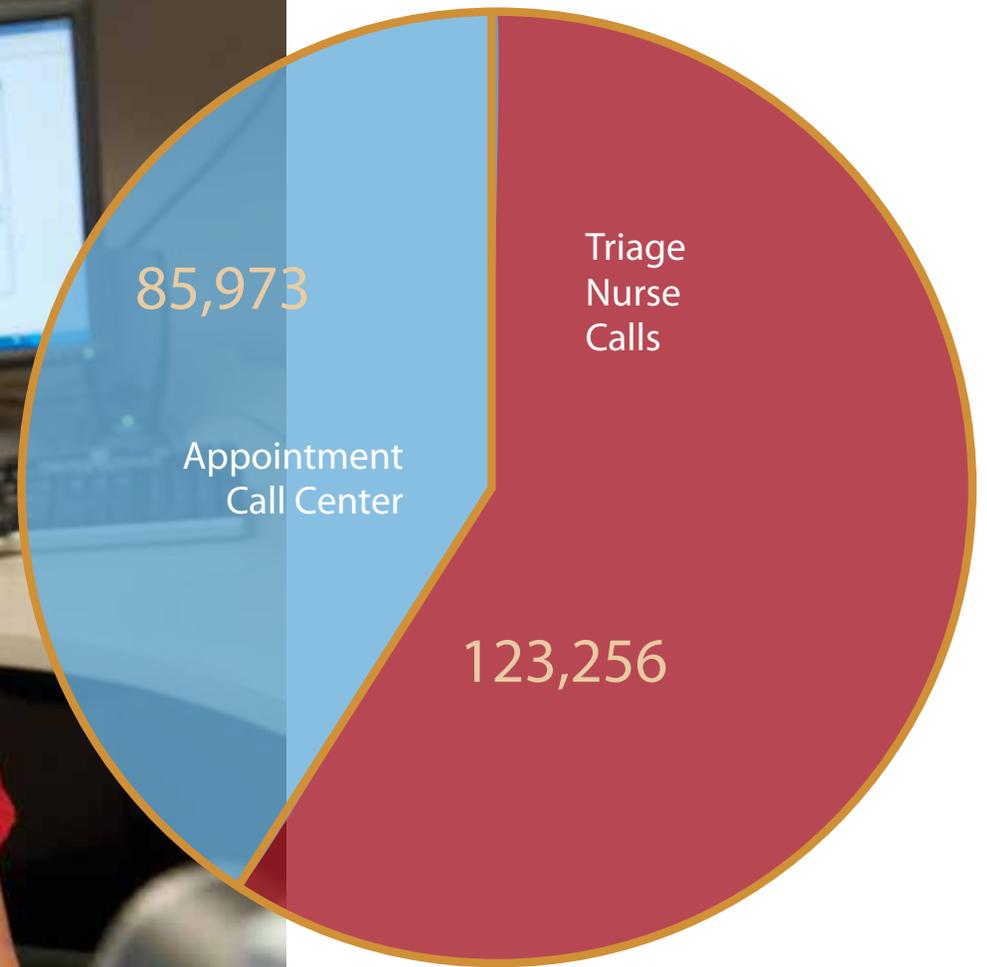
Sara Greathouse, APN. Miller County Health Unit, Texarkana

“I am very appreciative of the UAMS Telemedicine Clinics for our high-risk OB patients. It has been such a help to have you and the wonderful docs available to provide guidance in the care of the high-risk clients we see. It would be very difficult, if not impossible, for these women to get to Little Rock, and unfortunately we do not have a local source to refer these clients.

What a stress reliever to know that a consult is just a phone call away and a face-to-face consult via telemedicine is just days away. I definitely would not want to go back to the way things were before September 2009! I know this took a monumental effort by a lot of people to get this off and running, but I absolutely know a lot of good has come from this service. Thank you all!”

Lynda Russell, APN. Sevier County Health Unit, De Queen

Consultation and Appointment Call Centers

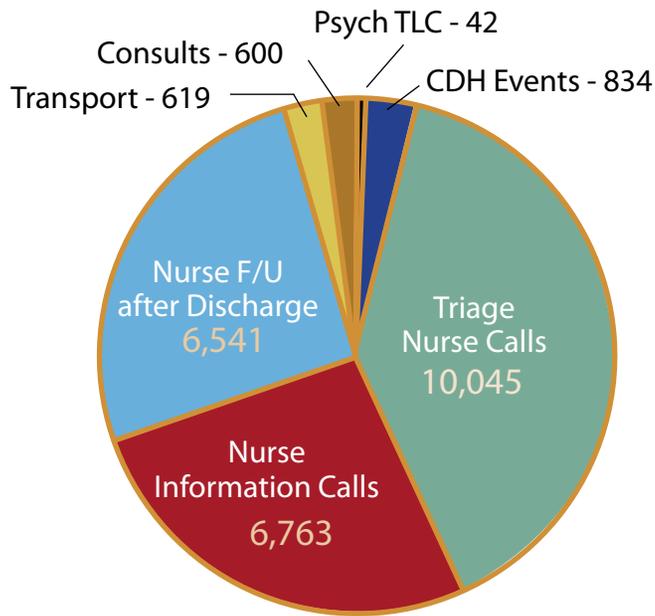


ANGELS Total Calls
209,229

ANGELS Call Center Event Types

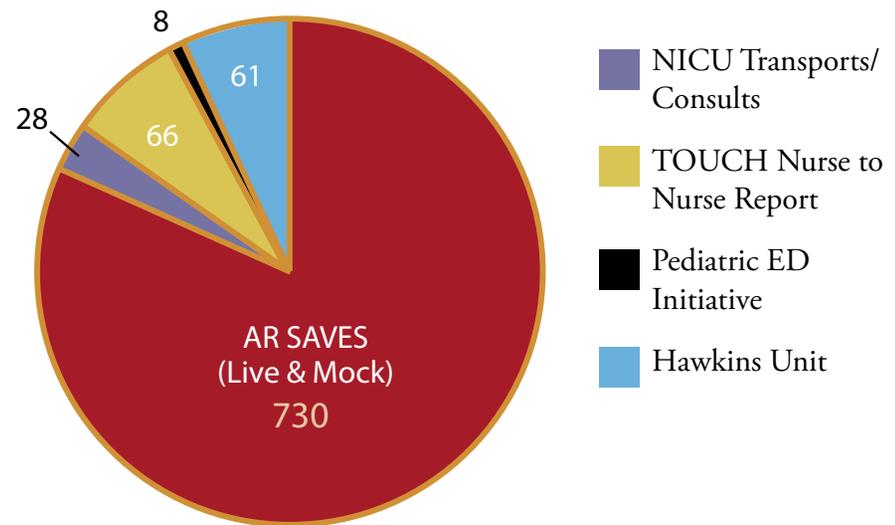
Nurse Line Only

(Each event may have multiple calls associated)



The Consultation Call Center is the heart of the ANGELS Program. The complex center is managed on a minute-by-minute basis by Donna Williams, R.N., whose staff responds to the constantly changing environment as needed. Being a triage nurse in today's modern Call Center takes more than the typical nursing knowledge base. ANGELS RN triage nurses must have the clinical experience to assess complaints and take the patient through the symptom-based algorithms, but almost as important, the nurse must possess many technical skills to navigate the Call Center. Some of the skills include: data entry, use of multiple electronic medical record systems, and communication with outpatient clinics. Some of the less obvious and most difficult technical skills are those needed to be proficient in telemedicine consultations. Call Center nurses make interactive video (IAV) connections between

Events from Center of Distance Health Projects



From left to right:

Donna Williams, R.N., ANGELS Call Center Manager; Monica Pettus, Appointment Center Manager

up to six remote sites at one time while assisting referring sites to send vital imaging studies through a virtual server or telemedicine screen. New in the fall of 2010 was the addition of after-hours IT support housed within the Call Center. The Call Center has experienced tremendous growth over the past few years, and the expansion continues. The nurses adapt and change with the Call Center by continually learning new skills to facilitate new services offered.

Services and Projects

OB Transport via Interactive Video – IAV is utilized during nurse-to-nurse report to enhance the transport experience to UAMS by allowing the patient and family to be introduced to UAMS staff, to provide basic hospital information and to facilitate the nurse-to-nurse report process.

Neonatal Consult or Transport – Angel One dispatch at Arkansas Children’s Hospital (ACH) notifies the ANGELS Call Center when a neonatal consult or transport is needed at a referring nursery with telemedicine capabilities. The Call Center makes the multi-site IAV connection between the remote facility and all ACH staff who would participate in the NICU transport (which includes dispatch, transport team and the neonatologist). The multi-site telemedicine connection allows for the consulting neonatologist to visually assess the baby and to guide any necessary procedures.

Pediatric ED Initiative – ACH began to utilize the Call Center and IAV equipment for ED pediatric consults when faced with a complicated case.

Spanish Translation Services

2,500+ phone calls, clinic visits
and telemedicine visits were translated.



From left to right:

Lee Kitchen, Spanish Interpreter;
Viola Jaramillo, Spanish Interpreter

Telemedicine Network and Clinics



Telemedicine is a cornerstone of ANGELS' success. In a state like Arkansas, where all the maternal-fetal specialists are located in Little Rock, it is often difficult for patients to travel to the tertiary care center. Under the direction of Rosalyn Perkins, A.P.N., the program has flourished and continues to add new sites yearly. New additions in 2010 are El Dorado and Russellville. Obstetrical consultations via IAV include specialist consultation or co-management, ultrasound and fetal echocardiography, as well as telecolposcopic exams.

“Indeed, it takes a village. In a moderate-sized community, some of us are lucky to know our neighbors. Through telemedicine, we get to know and build relationships with local health care providers and their administrative and nursing staff across Arkansas. This allows patients to receive sub-specialist consults, co-management of high-risk pregnancies and abnormal pap smears, and a sooner return of newborns to a community hospital near the parents' home.

Rosalyn Perkins, M.N.Sc., A.P.N.

ANGELS Sonographers Around the State

Sonographer
for Years
30

Lisa Cain, RT,
RDMS

Employed by AHEC
Texarkana and The
Women's Specialists



Trudy Weatherly, RDMS

Employed by White County Medical
Center

Sonographer
for Years
20

Kelly F. Cook,
R.T. (R), C.T.
(R), RDMS

Employed by UAMS
at AHEC South Arkansas in El Dorado



Sonographer
for Years
20

Bill Hickey,
RDMS

Employed by UAMS
AHEC Northwest
in Fayetteville, AHEC Fort Smith, St.
Edward Mercy Hospital in Fort Smith and
the ANGELS Program



Karan Kendall, RDMS

Employed by White River Medical Center

Candace Harkreader, RDMS

Employed by Johnson Regional
Medical Center

Chris Thannisch, RDMS

Employed by Baxter Regional
Medical Center

Paige Fenske, RDMS

Employed by Baxter Regional
Medical Center

Elizabeth Gill,
RDMS

Employed by
Millard Henry
OB/GYN Clinic in
Russellville



Sonographer
for Years
14

Mandi Dixon,
RDMS, BSRT
Sonographer
Manager

Employed by the ANGELS Program



Sonographer
for Years
16

Geneen Buech,
RDMS

Employed by Willow Creek Women's
Hospital

Marsha Moody, RDMS

Employed by White County
Medical Center

Todd Laing, RDMS

Employed by Mena Medical Center



Sonographer
for Years
20

Lori Heil,
RDCS

Employed by the
ANGELS Program

Sonographer
for Years
8

Lynne Tate,
RDMS

Employed by
Compassion
Women's Clinic in Arkadelphia and the
ANGELS Program



This is a great service to our patients in this area in that it saves them time and money by not having to travel to Little Rock to have their level II ultrasounds.

Kelly F. Cook,
R.T. (R), C.T. (R), RDMS

Fetal Echocardiography

Fetal echo via telemedicine continued to expand with Lori Heil, RDCS executing the hands-on part of the exam and Renee Bornemeier, M.D., director of the Fetal Heart Center at ACH, interpreting from Little Rock. To enhance provider detection of congenital heart anomalies, Borenemeier and Heil also gave presentations and provided hands-on training across the state.

Bornemeier says...

“The tele-fetal echocardiography program allows us to provide highly specialized care to women in their local facilities where they can obtain a detailed evaluation of their unborn baby’s heart. They will have face-to-face interaction with a fetal cardiologist who has reviewed their records, observed the scan in real time and can give immediate feedback to them about the baby’s heart and any cardiac abnormalities.

Most fetal echocardiograms are normal. However, when abnormalities are found, though the news is difficult to hear, being able to provide that service, care for that family

in a timely fashion and construct a plan of care are all vital for the unborn child and the family.

We want people to feel they have caring physicians, nurses and other health care professionals assisting them in preparing for their infant and the underlying cardiac problems that will need to be addressed. By working with maternal-fetal medicine specialists, neonatologists, cardiac surgeons, social workers, child-life specialists, financial counselors and others, we can make a coordinated effort to provide the best care for the child and help the parents become more knowledgeable about their child’s cardiac defect and what can be expected.

News that your unborn child has a cardiac defect and will need heart surgery is so difficult to hear. Our goal is that our tele-fetal echocardiography service helps alleviate some of the worry and fear by providing timely and accessible care, information and knowledge about the unborn child’s heart.

60 tele-fetal echos conducted in 2010

4 clinics held monthly at 3 different sites:

Fayetteville, Texarkana and Jonesboro

Plans for two additional sites to be added in early 2011 - El Dorado and Pine Bluff

Telecolposcopic Program



ANGELS expanded its telecolposcopy program in 2010 by adding sites at three ADH Units in Clarksville, Wynne and Hope. This collaborative effort provides follow-up for Health Department patients with abnormal pap smears who otherwise would have none. The program allows for the patient to have a local colposcopy with an ANGELS APN conducting the hands-on part of the exam while an OB-GYN physician is observing at the tertiary care center.

841 telecolposcopy exams

218 women identified with a need for treatment for pre-cancerous lesions

2 women identified with invasive cervical cancer, both successfully treated at the UAMS Gyn-Oncology Department



Angel Eye

Angel Eye is an innovative way to connect parents to their hospitalized neonate in the NICU. Twelve webcams have been installed at UAMS NICU, providing a 24/7 access for families to view their fragile newborn from a remote location. While typically these high-risk neonates have orders for minimal stimulation with decreased ambient lighting; the cameras can visualize the neonate in darkness. New in 2010 was the addition of one-way audio enabling parents with a microphone on their home computer to talk, sing or read to the baby. Tested by the UAMS Audiology Department, the decibel levels are set to an appropriate level for the neonate's ear.



“ We hope that this will help these mothers, who are sometimes distanced from their premature neonate, with bonding and lactation.”

Shannon Lewis, R.N.

“ It has been a blessing for our family to have, because we live so far away and cannot visit a lot.”

Family member



Matthew Cheadle, M.D.
Neonatologist

Telemedicine Demonstrates Life-Saving Ability for Fayetteville Newborn

Answering the Call

The newborn at Washington Regional Medical Center in Fayetteville had just arrived in the neonatal intensive care unit (NICU) when nurses noticed he was struggling to breathe. They alerted a pediatrician, who quickly called in Matthew Cheadle, M.D., a neonatologist. A long list of conditions could have been responsible for the breathing problem, said Cheadle, one of the few doctors in northwest Arkansas who specialize in the care of sick newborns. He suspected a rare heart defect that only reveals itself after birth, when the baby is transitioning to life on its own.

“It’s very rare, but I had seen it before,” Cheadle said of the condition in which heart vessels are transposed.

He set up the NICU’s echocardiogram and called Arkansas Children’s Hospital (ACH) in Little Rock, where he talked to Thomas H.H. Best, M.D., a University of Arkansas for Medical Sciences (UAMS) pediatric cardiologist based at ACH.

Using the latest telemedicine technology linking ACH with Washington Regional, Best was able to view live, high-resolution video of the heart to confirm the defect that Cheadle had suspected.

“Without a cardiologist looking at the echo, there was no way to confirm his condition and whether he required emergency stabilization and surgery,” Cheadle said. “Having that level of expertise available also kept us from experimenting with futile therapies.”

The emergency surgery the baby required is available only at ACH, so Cheadle put the baby on a ventilator and arranged for air transport. Meanwhile, ACH prepared for the surgery.

“He got to his surgery in as good a condition and as fast as he could under any circumstances,” Cheadle said. “It was almost as if he had been born at Children’s.”

The success with Cheadle’s patient illustrates the importance of the people involved – not just the telemedicine link, said Whit Hall, M.D., a UAMS neonatologist who has led efforts to expand neonatology care to 22 outlying sites in Arkansas using telemedicine.

“My hat goes off to the people at Washington Regional and at Children’s for providing the services that helped save the baby’s life,” Hall said.

Not all telemedicine consults are so dramatic, but telemedicine has become integral to the care of Arkansas-born babies as part of the UAMS ANGELS program. Hall leads telenursery rounds using live video conferencing on Mondays, Wednesdays and Fridays with physicians at 22 outlying hospital nurseries. The meetings, which last about 15 minutes, allow Hall to take a census of patients at each nursery and determine if they have room for their

hometown patients who are ready for discharge from UAMS or ACH. These babies typically are the result of high-risk pregnancies and are premature and at a very low birth weight.

The telenursery rounds also provide an opportunity for the outlying nursery physicians to set time for consults and peer review with Hall on difficult cases and to provide follow-up on babies that were transported to ACH from one of their sites.

“About 10-20 percent of the time we see things on video that help us make better decisions as opposed to using only the telephone,” Hall said. “What we’ve found is that we actually decrease the number of transports a little bit by using telemedicine.”

Using a \$1,502,301 grant called TOUCH (Telemedicine Outreach Utilizing Collaborative Healthcare) in 2009, Hall oversaw a program that partnered UAMS, ACH and nine outlying hospital nurseries and labor and delivery units. The program enabled regionalization of care, ensuring that high-risk pregnant women and/or their newborns are transported to hospitals with neonatologists.

As a result of the grant and through the continued use of telemedicine, ANGELS has decreased by half the number of tiny babies born in nurseries without neonatologists. There’s also been a corresponding decrease in the mortality of those babies that are born in hospitals without a NICU.

“Telemedicine has been effective in helping decrease deaths in small babies, and we’ve been able to prove that,” Hall said.

“Without a cardiologist looking at the echo, there was no way to confirm his condition and whether he required emergency stabilization and surgery”
Matthew Cheadle, M.D.

Evidence-Based Guidelines

Thanks to physician participation and this teleconference forum, more than 170 evidence-based guidelines for high-risk obstetrical, neonatal and pediatric conditions have been developed and are available on the Internet at <http://www.uams.edu/angels> or by mail in a compact disk upon request.

In 2010...

452 New Web page registrants include 121 physicians, 146 nurses, 33 advanced practice nurses and 27 health care administrators

1,571 Arkansas registrants

2,102 Total registrants to access guidelines and teleconferences

21,156 Page views for the ANGELS website

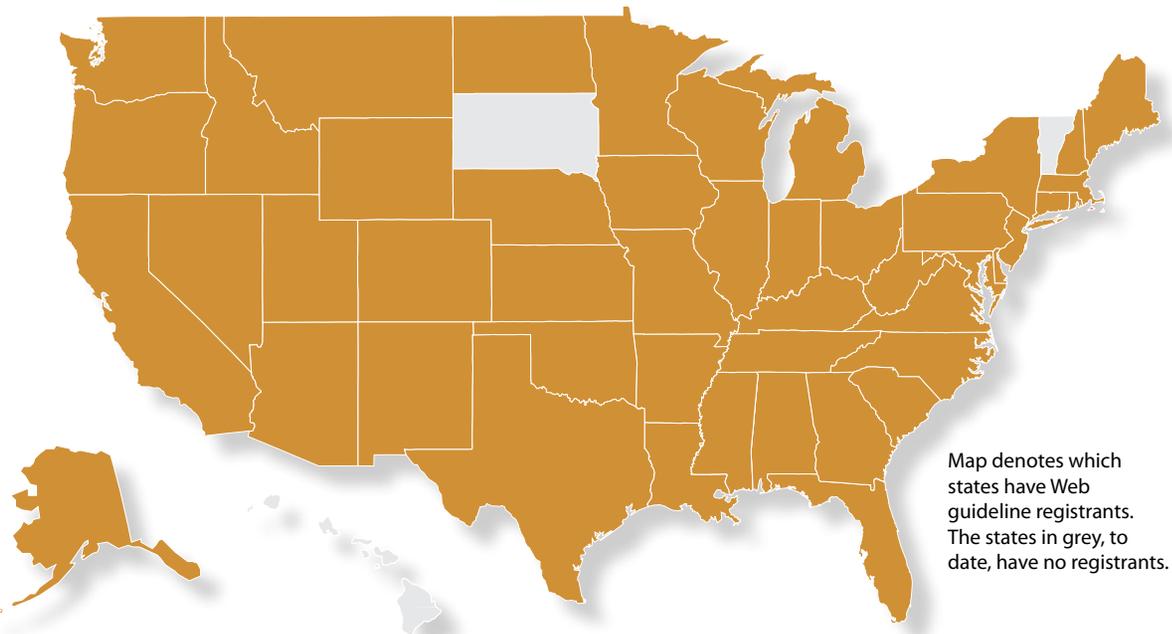
The most frequently viewed page was the teleconferences and guidelines overview page with 6,184 page views. Top content viewed was guideline information. The guidelines most frequently viewed were the obstetrical guidelines on Diabetes, Preeclampsia, Preterm Labor, Group

B Streptococcus, Hypercoagulable States, Herpes, Rh Isoimmunization, Hyperemesis and Twins.

The teleconference information most frequently viewed was for the High-Risk Obstetrics Teleconference.

Guideline and Teleconference Registrants hail from 47 states and 30 countries. Hawaii, South Dakota and Vermont are the only states missing registrants.

In collaboration with Arkansas Children's Hospital and the UAMS Center for Distance Health, the PedsPLACE teleconference contributes to the development and distribution of neonatal and pediatric guidelines.



Barbara Smith, R.N., C.P.C.

Case Management



Arkansas Reproductive Genetics Program

Mission Statement: to create comfort, hope and healing to patients and families by providing genetics counseling, targeted ultrasounds, first-trimester screenings, amniocentesis, chorionic villus sampling and fetal echocardiograms.

2,795 families counseled
by the certified genetic counselors and RN

313 of these families received an abnormal diagnosis,
which required intensive counseling, education and personal case management

The team includes:

- ☒ Four maternal-fetal medicine specialists
- ☒ Three pediatric cardiologists from Arkansas Children's Hospital
- ☒ Nine certified sonographers
- ☒ Four certified genetic counselors
- ☒ One registered nurse
- ☒ One women's health nurse practitioner
- ☒ Four administrative assistants

From left to right:

Mindy Simonson, M.S., C.G.C.; Kate Zellmer, M.S., C.G.C.; Shannon Barringer, M.S., C.G.C.; LaJuana Whyte, R.N.



Following Baby Back Home

Teams of health care professionals continued to travel the state to help families with their high-risk newborns after discharge from neonatal intensive care units (NICU) at the UAMS, ACH and other nurseries throughout the state that care for high-risk neonates. The program targets Arkansas families who live outside a 50-mile radius of Little Rock. The central Arkansas area is served by an Easter Seals home visiting program.

Home visits were done at the request of the family and as part of each baby's NICU discharge plan. Each visiting team includes a pediatric registered nurse and a care coordinator who coordinates care with the child's primary and specialty care providers. The goal is to optimize the health and development of babies by the information and assistance provided during home visits. Home visitors will attempt to improve adherence to medical appointments and immunizations while building the family's skills and confidence in providing a safe, nurturing home for its baby.

When a mother brings her baby home from the NICU, her joy is often replaced with anxiety, said KIDS FIRST Medical Director Patrick H. Casey, M.D., Harvey and Bernice Jones Professor of Developmental Pediatrics.



Julie Hall-Barrow, EdD.,
Whit Hall, M.D.,
Shannon Lewis, R.N.

High-Risk Infant Monitoring Program

This program is a collaboration between ANGELS and Easter Seals. Infants who exhibit developmental delays due to extreme prematurity, chronic illness, and other conditions are referred to HRIMP for evaluation and treatment. Various treatments include physical, speech and occupational therapy as well as parent education and support. Program goals are to prevent rehospitalization and to increase the physical and developmental functioning of the baby.

Referrals come from hospitals, health care providers, parents and daycare workers. Inclusion criteria also include living within a 50-mile radius of Little Rock.

Tele-Nursery

The tele-nursery program persisted in 2010 despite completing the supporting grant requirements by establishing regionalization of neonatal care in Arkansas. This program partners UAMS and ACH with outlying hospital nurseries and their pediatricians for virtual clinical census rounds, integration of targeted evidence-based clinical interventions and fostering of communication and relationships between Arkansas neonatal providers.

Every Monday, Wednesday and Friday, UAMS neonatologist Whit Hall, M.D., and his team conduct brief census rounds that provide a forum for peer-review questions, consults and follow-up information.

Tele-Nursery Sites 2010





AFDM – Arkansas Fetal Diagnosis and Management

Each year more than 1,400 infants will be born with a major congenital anomaly in Arkansas. The Arkansas Fetal Diagnosis and Management program was designed to provide coordinated, compassionate and evidence-based care for fetuses and newborns with congenital birth defects or genetic disease. The program was established in 2010 after multidisciplinary discussions agreed that infants with fetal anomalies across Arkansas may be without access to appropriate subspecialists at critical points prior to, during and immediately after delivery.

Babies identified prenatally with anomalies are referred to Arkansas Reproductive Genetics Program for confirmation of these diagnoses. The families are then referred to the AFDM program for further case management. The special needs of these families and babies are discussed at multidisciplinary team conferences using distant health technologies, evidence-based guidelines, standards of care and physician judgments. Individualized, family-centered plans are formulated in consultation with parents, physicians and other health care providers at UAMS and ACH, as well as referring health care providers. Appropriate referrals to subspecialty providers at ACH and UAMS are made at critical times, based upon specific anomaly diagnosis.

Though new in the ANGELS organization, the AFDM is already conducting reviews of its diagnoses and care plans to determine how to further improve outcomes. AFDM is headed by Marla Harrison-Lightburn, M.D., (neonatology), Paul Wendel, M.D., (maternal-fetal medicine), Lori Gardner, R.N., (program manager) and Shelly Poston (administrator). In 2010, more than 200 families were provided services by this program.

“These babies have a better chance at good outcomes when in-depth care planning is done before birth.”

Shannon Barringer, Certified Genetics Counselor

The Faculty, APN and Resident Physician Team

Under the supervision of 11 OB/GYN generalists and four maternal-fetal medicine specialists, 13 APNs, 17 resident physicians and two R.N.s continue to provide care for UAMS and ANGELS patients across Arkansas and surrounding areas. Direct care and co-management are conducted in one of two face-to-face clinics, via telemedicine, in UAMS Medical Center and by telephone. This team also provides the much-needed correspondence with each patient's local OB provider so that the plan of care is not only clear but communicated.



Evaluation and Research

Think big. Now...think bigger. That is exactly what ANGELS has done over the past seven years of its growing presence in Arkansas, and 2010 will go down in ANGELS' history for rapid statewide growth. ANGELS' leaders spent 2010 chasing a dream of a bigger, better telemedicine infrastructure on which ANGELS can thrive, alongside new resources for distance research, telemedical interventions, hands-on and virtual training, and targeted telehealth promotion. Funded by state and federal contracts, these achievements are not only measured in dollars and cents but also in the increasing number of unique, mutually beneficial partnerships. In one effort alone, ANGELS' leaders sealed partnerships with nearly 500 different health care, higher education, public safety, and research institutions within Arkansas. In other grant efforts, regional states have joined the ANGELS movement to improve health care through clinical and educational telemedicine activities. In summary, ANGELS' leaders won more than \$104,201,560 in grants and contracts in 2010, landmark achievement in the history of the program, University and state.

From left to right:

David Fletcher, M.B.A.; Sarah Rhoads, D.N.P., A.P.N.;
Rachel Ott, B.S.; Janet Bronstein, Ph.D.



Funded Grants That Will Benefit ANGELS

“The Arkansas Healthcare, Higher Education, Public Safety, & Research Integrated Broadband Initiative.” American Recovery and Reinvestment Act, National Telecommunications Information Administration (\$102,131,393)

Principal Investigator: Curtis Lowery, M.D.

Description: This project will upgrade, expand and integrate fragmented, limited bandwidth broadband networks by offering 474 community anchor institutions substantial broadband upgrades, added broadband equipment, and connectivity to a fiber backbone to meet broadband needs in health care, higher education, public safety, and research in unserved, underserved, and economically distressed areas in Arkansas.

Benefit to ANGELS: This funding will give ANGELS the ability to add new sites, enabling the program to spread antenatal education to more health care providers throughout the state and administer specialty care to more rural, at-risk patients throughout Arkansas.

“The Arkansas Center for Telehealth,” Sustainable Broadband Adoption, National Telecommunications and Information Administration - Connect Arkansas (lead applicant) \$3,702,738 (UAMS’ portion as a subrecipient is \$823,080.76.)

Principal Investigator: Curtis Lowery, M.D.

Description: The Arkansas Center for Telehealth (ACT) will promote broadband health adoption through this outreach, education, and awareness initiative aimed at health care providers, administrators, and the public residing in the south’s vulnerable populations. ACT delivers technology training, needs-based curricula, an educational website, awareness campaign and 24/7 technical support

Benefit to ANGELS: More providers throughout the state will be made aware of the health care possibilities, allowing ANGELS to make partnerships with more health care entities in Arkansas and to provide better care to rural women.

“DISCOVER MCH Leadership: Delta Interactive Solution to Collaborate Over Video for Education and Resources for Maternal Child Health Leadership.” U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau, Maternal and Child Health Training Program, MCH Distance Learning (\$300,000)

Principal Investigator: Sarah Rhoads, D.N.P., A.P.N.

Description: DISCOVER MCH Leadership will deliver distance learning opportunities through interactive video and web-based materials in a user-friendly format that welcomes interdisciplinary participation and pursuit of continuing medical education credits, exploring topics specific to the racial, ethnic and cultural needs associated with practicing maternal-child health. The outreach encompasses the Mississippi Delta region of eight states – Arkansas, Louisiana, Alabama, Mississippi, Tennessee, Kentucky, Missouri and Illinois.

Benefit to ANGELS: Through DISCOVER MCH, ANGELS will have the opportunity to greatly expand its professional development offerings to the eight states within the Mississippi River Delta region, focusing on topics that will be of importance to rural providers and nurses.

“South Central Training Resource Center.” The Health Resources and Services Administration. (\$947,087)

Principal Investigator: Sarah Rhoads, D.N.P., A.P.N.

Description: Existing and developing telehealth networks serving the South's medically underserved, rural populations will gain custom-tailored telehealth guidance and expert resources on how to further their clinical and educational reach through the South Central Training Resource Center (SCTRC). This Telehealth Resource Center will fulfill its mission to offer its target region telehealth technical assistance to promote and support telehealth integration in health care settings and classrooms in Arkansas, Tennessee and Mississippi.

Benefit to ANGELS: The SCTRC will emphasize ANGELS' position as a leader in telehealth innovation by making UAMS the regional resource for telehealth training and guidance.

Awards

The Computerworld Honors Program, National Laureate and Finalist: Healthcare Technology. Description: "The Computerworld Honors Program brings together the principals of the world's foremost information technology companies to recognize and document the achievements of the men, women, organizations and institutions around the world, whose visionary applications of information technology promote positive social, economic and educational change."

Gordon Low, M.S.N., A.P.N. and Sarah Rhoads, D.N.P., A.P.N. – Association of Women's Health, Obstetrical and Neonatal Nursing National Convention – 2010 Innovative Program Paper Award.

Sarah Rhoads, D.N.P., A.P.N. (mentor) and Stephanie Wyatt, M.N.Sc., A.P.N. (mentee) – Sigma Theta Tau International 2010 Maternal-Child Health Leadership Program.

Presentations

Donna Williams, R.N.; Tammy Northcutt, R.N.; Julie Hall-Barrow, Ed.D., Shannon Lewis, R.N., Madison Hedrick, B.A. and Rachel Ott, B.A. "Calling All Call Centers: Interactive Video's Quickly Expanding Role in Today's Call Center." Presented at 2010 15th Annual International Meeting and Exposition of the American Telemedicine Association, San Antonio, Texas, May 16 – 18, 2010.

Curtis Lowery, M.D., Tina Benton, R.N., Cindy Henrich, M.A., and Rachel Ott, B.A. "The Winning Edge: Telemedicine and the Clinical and Translational Science Award" by Curtis Lowery, M.D.; Tina Benton, B.S.N., R.N.; Cindy Henrich, M.A.; and Rachel Ott, B.A. Presented at 2010 15th Annual International Meeting and Exposition of the American Telemedicine Association, San Antonio, Texas, May 16 – 18, 2010.

David Fletcher, M.B.A.; Janet M. Bronstein, Ph.D.; Judith E. McGhee, M.D., M.P.H.; Curtis Lowery, M.D.; and Rachel Ott, B.A. "Evaluating the Impact of a Telemedicine Program on Birth Outcomes and Costs." Presented at 2010 15th Annual International Meeting and Exposition of the American Telemedicine Association, San Antonio, Texas, May 16 – 18, 2010.

David Fletcher, M.B.A.; Janet M. Bronstein, Ph.D.; Judith E. McGhee, M.D., MPH.; Curtis Lowery, M.D.; and Rachel Ott, B.A. "Impacting Lives: Empirically Demonstrating the Effect of Telemedicine on Access to Care" Presented at 2010 15th Annual International Meeting and Exposition of the American Telemedicine Association, San Antonio, Texas, May 16 – 18, 2010.

Curtis Lowery, M.D.; Tina Benton, R.N.; Roy Kitchen, M.B.A.; Julie Hall-Barrow, Ed.D.; Brenda Tennison, A.D.; Laura Rakes, B.A. and Rachel Ott, B.A. "Well Connected: Strategies for Collaboration, Transparency, and Compromise

in Telemedicine.” Presented at 2010 15th Annual International Meeting and Exposition of the American Telemedicine Association, San Antonio, Texas, May 16 – 18, 2010.

Gordon Low, A.P.N., W. Charles Hitt, M.D. and Rachel Ott, B.A. “A Prenatal Presence: Health Departments and Rural Telemedicine Unite” Presented at 2010 15th Annual International Meeting and Exposition of the American Telemedicine Association, San Antonio, Texas, May 16 – 18, 2010.

Elizabeth Kim, M.D; Terri Teague-Ross, M.S.; Stacy Pitsch, R.N., Rachel Ott, B.A and Whit Hall, M.D. “A Well-Rounded Relationship: Evaluation of Telemedicine Neonatal Rounds”. Presented at 2010 15th Annual International Meeting and Exposition of the American Telemedicine Association, San Antonio, Texas, May 16 – 18, 2010.

Janet Bronstein, Ph.D.; David Fletcher, M.B.A., Judith McGhee, M.D., M.P.H., Curtis Lowery, M.D.; and Rachel Ott, B.A. “Evaluating the Impact of a Call Center on the Likelihood of Medicaid Patients Receiving Appropriate Levels of Care” Presented at 2010 15th Annual International Meeting and Exposition of the American Telemedicine Association, San Antonio, Texas, May 16 – 18, 2010.

Rosalyn Perkins, A.P.N., Danny Wilkerson, M.D.; and Terri Imus, R.N. “Anesthesia Care Delivered via Telemedicine.” Presented at 2010 15th Annual International Meeting and Exposition of the American Telemedicine Association, San Antonio, Texas, May 16 – 18, 2010.

Sarah Rhoads, D.N.P., A.P.N., Curtis Lowery, M.D.; M. Kathryn Stewart, M.D., M.P.H., Karen Kim Yeary, Ph.D. and Rachel Ott, B.A.. “Reaching the Unreachable: Interactive Video Strategies in Rural Research” Presented at 2010 15th Annual International Meeting and Exposition of the American Telemedicine Association, San Antonio, TX, May 16 – 18, 2010.

Shannon Lewis, R.N., Tina Benton, R.N., Stacy Pitsch, R.N., Terri Teague-Ross, MS and Sarah Rhoads, J. “Counting beds and shuffling babies: Coordinating labor and delivery and NICU bed space across Arkansas”. Poster presentation at Association of Women’s Health, Obstetrical and Neonatal Nursing Annual Convention, Las Vegas, NV, September 2010.

Gordon Low, A.P.N. Sarah Rhoads, DNP, A.P.N., Lisa Harmon, A.P.N. and Tesa Ivey, A.P.N. “No longer an island: Rural nurse practitioners gain support through telehealth.” Presented at Association of Women’s Health, Obstetrical and Neonatal Nursing Annual Convention, Las Vegas, September 2010. Selected as the Innovative Program Paper Award for the 2010 AWHONN Convention.

Sarah Rhoads, Tesa Ivey and Margaret Glasgow. “Speaking the same language: Is it possible to educate every obstetric nurse and physician in Arkansas on the current fetal heart monitoring terminology?” Poster presentation at Association of Women’s Health, Obstetrical and Neonatal Nursing Annual Convention, Las Vegas, September 2010.

Donna Williams, R.N. Tesa Ivey, A.P.N., Tina Benton, R.N. and Sarah Rhoads, DNP, A.P.N. “Another set of eyes: Remote fetal monitoring surveillance aids the busy labor and delivery unit”. Poster presentation at Association of Women’s Health, Obstetrical and Neonatal Nursing Annual Convention, Las Vegas, September 2010.

Stephanie Wyatt, A.P.N., Shannon Barringer, C.GC., Mandi Dixon, R.D.M.S. and Rachel Ott, B.S. “Connecting the dots for patients and families: Prenatal diagnosis and care of the high risk obstetrical patient” Presented at Association of Women’s Health, Obstetrical and Neonatal Nursing Annual Convention, Las Vegas, September 2010.

Broadband Technology Opportunities Program

The year 2010 was particularly monumental in affecting the entire state's health care delivery. In August, the National Telecommunications and Information Administration of the U.S. Department of Commerce awarded UAMS \$102 million in federal funding to support the creation of the Arkansas Healthcare, Higher Education, Public Safety & Research Integrated Broadband Initiative. ANGELS led the initiative, grant development and program creation, which consists of more than 470 partners and will serve all 75 Arkansas counties. The statewide program will allow ANGELS to provide upgraded bandwidth and/or equipment to facilitate broadband programs in rural areas, specifically linking all of Arkansas to health care specialists, teachers and researchers. This means that ANGELS will be able to help more high-risk obstetric patients and provide more obstetricians with better professional connections and resources, ultimately improving the antenatal care for women who might not otherwise have access to such care in rural areas of the state.

The Principal Investigator of this award is Curtis Lowery, the Director of ANGELS and the Center for Distance Health. The ANGELS staff showed unbeatable teamwork throughout the year-and-a-half-long application process for the federal funding. Through leadership and teamwork, the group successfully orchestrated the massive coordination of hundreds of partners to create a program proposal that won UAMS its largest federal grant ever.

2010 has been a year of great leaps in health care for rural Arkansans, and ANGELS has played an integral role in that leap. It is because of the experience, fortitude, innovation and motivation of the ANGELS team that the Arkansas Healthcare, Higher Education, Public Safety, & Research Integrated Broadband Initiative was funded and can better serve Arkansans.

ANGELS Evaluation 2010 Overview

To ensure ANGELS is achieving its deliverables and benefiting the people of Arkansas, the program continually evaluates data from Medicaid, the Arkansas Health Department and UAMS. During a weekly conference call, representatives from the Division of Medical Services at Medicaid, the Health Department and UAMS discuss ways the collected data can be put to best use. Additionally, in an effort to advance the field of telemedicine and promote best practices, ANGELS presents the findings at academic and industry conferences, such as the proposals that were presented at the American Telemedicine Association Annual Meeting and Exposition, and publishes articles in peer-reviewed journals.

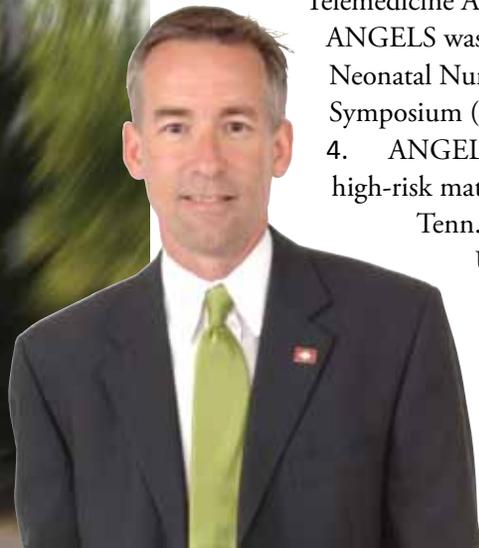
During 2010, ANGELS composed a paper on improving perinatal regionalization for preterm deliveries in a Medicaid population, which was accepted for publication by Health Services Research. Also, ANGELS collaborated with the Center for Medicare and Medicaid Services (CMS) and the National Initiative for Children's Healthcare Quality (NICHQ) to report on the development and initial outcomes of the Telemedicine Outreach Utilizing Collaborative Healthcare (TOUCH) program. Outreach continues to be a driving force as ANGELS has created briefs for the provider community to highlight the information that they might find the most beneficial for their practices. Also, working with various stakeholders throughout Arkansas, empirical evidence can be used to improve practice patterns, verify program compliance and demonstrate the value of ANGELS.

This past year may very well stand as the largest ever in ANGELS' continuing history; however, no matter the size or number of grants and contracts in future years, it is certain the program will continue to build bigger and better for the benefit of Arkansas' at-risk women and children. For now, all of our "angels" within ANGELS should be proud to know their dedication and hard work has enabled the program to extend its reach to new partners through new services and improved resources.

ANGELS Outreach

Once again ANGELS has stayed on the fore-front of leading the way for Maternal-fetal Telemedicine for the nation. We continue to host programs from all over the nation, as well as travel to many different meetings to share our experience. Yet we still kept the patients and health care providers here in Arkansas our most important priority. Just a few of these accomplishments:

1. Everett Magann, M.D. joined the ANGELS team in 2010, allowing us to start several new clinics. These include El Dorado AHEC and Millard-Henry Clinic in Russellville for 2010.
2. We received several telehealth grants, including the Delta Interactive Solution to Collaborate over Video for Education and Resources for Maternal Child Health Leadership (DISCOVER MCH Leadership) grant with Sarah Rhoads as the principal investigator. Health Resources and Services Administration (HRSA) awarded \$300,000 over three years for educational outreach in the eight-state Mississippi Delta region that includes Arkansas, Alabama, Louisiana, Mississippi, Tennessee, Missouri, Kentucky and Illinois. Another grant received from the Office of Advancement of Telehealth (OAT) is the South Central Telehealth Resource Center. This grant is just more than \$900,000 over a three-year period and will allow ANGELS to be a resource for Telehealth for Arkansas, Tennessee and Mississippi.
3. Multiple presentations and speaking engagements both within Arkansas and nationally were done in 2010. We have worked closely in Arkansas with the state Health Information and Technology commission (SHARE), as well as with the Arkansas Research and Educational Optical Network (AREON) in expanding our network all across the state. Nationally we presented at both the American Telemedicine Association's Annual (San Antonio) and Mid-Year (Baltimore, MD) meetings. ANGELS was also asked to present at the Association of Women's Health, Obstetrics and Neonatal Nurses (AWHONN) annual meeting (Las Vegas), Northwest Medical Informatics Symposium (Spokane, WA), and the Sixth National Learning Congress (Grapevine, TX).
4. ANGELS continues to host groups throughout the year that come for training in setting up high-risk maternal programs such as ours. Just a few that we hosted are Erlanger Health Systems, Tenn.; Integris Health, Okla.; Oregon Health and Sciences University, Ore.; Indiana University School of Medicine, Ind.; and Texas Health Presbyterian, Texas. We continue to grow with our Fetal Heart Telemedicine program across the state by leveraging our ANGELS sites, as well as expand our pediatric programs systematically. As more connections are being made with technology, the patients and health care providers of Arkansas will continue to benefit.



Michael Manley, M.N.Sc., R.N.
ANGELS Outreach Coordinator



Inspiring HOPE

After losing her daughter, a challenge helped bring new rewards

Avie and Scooter Hardin felt an eerie sense of déjà vu last year. When she came home from a run in which she didn't feel quite right, Avie took a pregnancy test that came back positive. The run, the way she felt, even the day – two days after Mother's Day – were the same as in 2008, when her first pregnancy was revealed.

“We were thrilled, and I was scared to death at the same time,” said Avie, a kindergarten school teacher.

In Avie's first pregnancy, preeclampsia struck without warning, taking the life of their daughter at 23 weeks.

Preeclampsia usually involves a rapid rise in blood pressure that can lead to seizure, stroke, multiple organ failure and death of the mother and/or baby. Thousands of women and babies die or get very sick each year as a result of the disorder.

Following that pregnancy, Avie was referred to Paul Wendel, M.D., at the University of Arkansas for Medical Sciences (UAMS), home to the state's only board-certified maternal-fetal medicine specialists. Part of the ANGELS program, Wendel and his team took Avie on as a patient giving her a guarded prognosis in a future pregnancy.

On her first visit, Wendel surprised Avie by challenging her to run a half marathon.

Avie embraced the challenge. Trying for another pregnancy became secondary. In March 2010, she completed the 13.1 mile Little Rock Half Marathon in 2 hours, 54 minutes.

Two months later, after the positive home pregnancy test, she set an appointment with Wendel, and she was wearing her half-marathon medal when he walked in. "I wanted him to know that I could do this – that I was serious," she said.

During the visit, Wendel gave her the due date, which happened to be the same as for the daughter she had lost.

Wendel took every precaution, she said, with thorough exams every two weeks, including high-definition ultrasounds when indicated.

"He sat down and gave me as much time as I needed to talk everything through," Avie said. "Anytime I had questions I could e-mail my advanced practice nurse, Stephanie Wyatt, and within five minutes she would respond. I never felt like I was alone."

But as with the previous pregnancy, preeclampsia and preterm labor developed suddenly – this time in the 26th week. Wendel was able to hold off delivery for four days, allowing time for two steroid shots to help strengthen the baby's lungs.

Harrison Luther Hardin was born Oct. 10, 2010. He weighed 2 pounds, 2 ounces and had to fight through chronic lung disease, apnea and a level 3 brain bleed before he could go home 93 days later.

"The only way I could help him was to give him my breast milk," Avie said.

When Harrison was stable enough for stimulation, after about a month, Avie got to hold him. She eagerly participated in UAMS' Kangaroo Care Program, in which mothers and their pre-term babies have skin-to-skin contact, with the baby on the mother's chest.

"It was amazing; his vitals would improve dramatically almost as soon as he was on my chest," Avie said.

UAMS' care for her and her son was as good as it gets, she said.

"The level of compassion and empathy was beyond anything we ever expected," she said. "Every person we came in contact with went the extra mile, and I consider them lifelong friends."

Only four months after he was born, Harrison weighed nearly 10 pounds. Although developmentally delayed, he was right on track for his gestational age. With physical and speech therapy, he should be caught up by about age 2, Avie said.

"It's been a roller coaster, but the important thing is he's OK," she said. "I hope our story can inspire those who are considered high risk during pregnancy as well as give hope to people who have experienced loss."



While Avie and Scooter live in Little Rock with convenient access to a specialist, not all pregnant Arkansans are so fortunate. The ANGELS Program enables all women in Arkansas with high-risk pregnancies the same level of care that Avie and Harrison received. Had Avie lived in Fayetteville, Jonesboro or Texarkana, she would have been cared for by a local OB-GYN with co-management and help by a UAMS maternal-fetal specialist. She would have been able to visit with the specialist via interactive video and her ultrasounds would have been performed locally and viewed in real time by the specialist.

ANGELS Biographies

Angela Graves, M.N.Sc, A.P.N. Women's Health Nurse Practitioner

Working with high-risk pregnancy patients in the ANGELS program presents some challenging cases for nurse practitioner Angela Graves.

“You see some challenging, difficult cases. There are complications or other health problems but it’s rewarding to provide the care these women and their unborn babies need,” she said.

Originally from Texarkana, Texas, Graves said that at 18 she found herself choosing between teaching or nursing as possible career paths. She opted for nursing at the time and has not looked back. “And I still get to teach, whether it’s my patients, colleagues, medical/nursing students or peers, so it’s the best of both worlds,” she said.

After working for two years as a critical care nurse, she went to work in OB/GYN, Labor and Delivery and eventually the University Women’s Health Center, where she sees high-risk patients in collaboration with maternal fetal medicine specialists. In the four years she has been involved with the ANGELS program, she said she has seen explosive growth as it has reached out to care for patients across the state through its telemedicine and education resources.

“ANGELS is committed to providing exceptional care to an underserved female population in the state,” she said. “I’m proud to be a part of that.”



Amy Phillips knew she wanted to be a doctor – even as a child.

By the time she earned her medical degree in 2004, the North Little Rock native said it was women’s health that interested her. With obstetrics and gynecology, she liked that she could care for patients throughout their life, providing familiarity and continuity of care.

As a physician now on the UAMS OB-GYN staff, Phillips consults on ANGELS cases. She also helps review the ANGELS guidelines used by physicians around Arkansas as a resource of best practices to care for high-risk pregnancies.

She believes in the statewide reach of the ANGELS program. “The ability of ANGELS to ensure high-risk pregnancy patients receive the care they need no matter their geographic location in Arkansas is amazing,” she said.

Phillips graduated medical school summa cum laude. She stayed at UAMS for her residency in obstetrics and gynecology and joined the faculty in 2008. Her specialties include vulvar disorders in addition to general obstetric and gynecologic care.

Amy M. Phillips, M.D. Assistant Professor, UAMS Department of Obstetrics and Gynecology



Adam Sandlin, M.D.
Chief Resident, Department
of Obstetrics and Gynecology

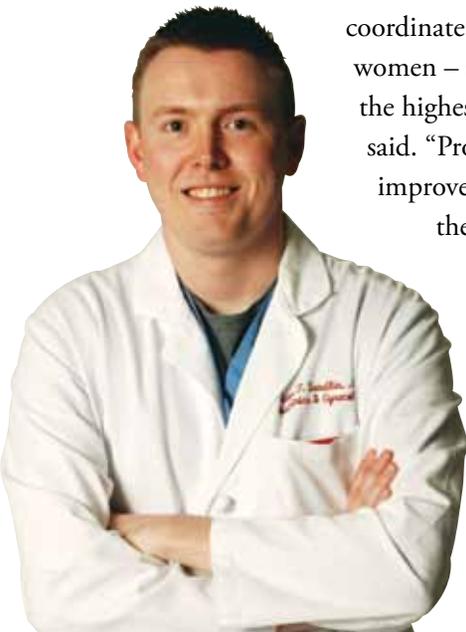
Adam Sandlin said his wife's first pregnancy may have had the most direct role in leading him into obstetrics and gynecology.

While a third-year medical student, he was reading up on the physiology of pregnancy to answer some of his wife's questions. "Pregnancy is so complex and unique, I realized it was the specialty I wanted to work in," he said.

Serving the final year in his medical residency, Sandlin is the chief resident in the Department of Obstetrics and Gynecology. As an upper-level resident, the Maumelle native helps the ANGELS team as a liaison between the ANGELS nurses and an outside physician. He helps coordinate the transport of high-risk pregnancy patients to UAMS.

"Before ANGELS, Arkansas had no efficient system to coordinate the quick and safe transport of pregnant women – as well as their infants – who are in need of the highest level of obstetrical and neonatal care," he said. "Providing access to the care they needed has improved outcomes for these women and their infants."

Following completion of his residency, Sandlin will begin a fellowship in maternal-fetal medicine at UAMS.



Paul Wendel has been with the ANGELS program since Day One back in 2003.

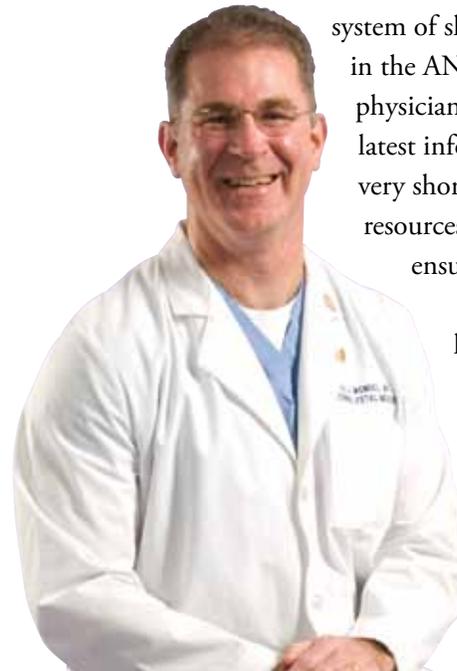
Wendel lends his expertise in maternal-fetal medicine, high-risk pregnancies and multiple births. He sees high-risk patients at UAMS and consults with physicians around the state on high-risk cases.

Wendel, who has been at UAMS for 18 years, said his style is to build a strong relationship with his patients.

"I really like to get to know my patients, to know where they are coming from," he said. Getting as much history and information about a patient will usually lead him to any underlying health problems that could increase risk in a pregnancy.

ANGELS creates the same type of relationships with its system of sharing information between the specialists in the ANGELS program and the primary care physicians around the state. "We can disseminate the latest information in maternal-fetal medicine in a very short period of time thanks to the telemedicine resources and ANGELS call center," he said. "This ensures our patients get the care they need."

Originally envisioned as a vehicle for lowering the number of premature births in Arkansas, Wendel said ANGELS has grown beyond expectations. He credited the technology and drive of those in the program as well as the participating physicians across the state.



Paul J. Wendel, M.D.
Maternal-Fetal Specialist,
Department of Obstetrics
and Gynecology

It's the ANGELS spirit – promoting the innovative use of technology and collaboration to serve the greater good – that helps Arkansas women and their babies secure care they otherwise might not receive.

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Outreach Nurse





Maternal-Fetal Medicine Team

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