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

On the cover: Constance Chang

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Leadership

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Director, Division of Medical Services, Arkansas Department of Human Services

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

(Not Pictured) Debra Garrison, J.D., Program Administrator, Division of Medical Services, AR DHS
Throughout 2016, ANGELS continued to increase access to quality perinatal care and provider and patient education in Arkansas through telemedicine. Emphasizing safety and quality, ANGELS seeks to standardize healthcare through provider and patient resources, including online education, teleconsultation, evidence-based guideline development and dissemination, and case management. As ever, ANGELS provides the ability to positively affect patients based on their needs, not their location.

In April 2016, ANGELS held its first Arkansas Perinatal Outcomes Workgroup (POWER) to identify and adopt perinatal best practices. With 28 of the 39 delivering hospitals represented statewide, this workgroup shared current evidence-based protocols and procedures being used in their respective institutions. The group identified two topics for standardization: “Oxytocin administration and related fetal monitoring” and “barriers to accomplishing changes in a facility.” We now have a developed network for sharing information and group support. In the coming year, ANGELS will implement maternal safety bundles in obstetric hemorrhage and hypertension at Arkansas’ delivering hospitals by customizing approaches in obstetrical emergencies in the effort to decrease maternal morbidity and mortality. ANGELS and POWER leaders will work through this process to equalize care in all Arkansas’ delivering hospitals in these areas and beyond.

Additionally, in 2016, ANGELS partnered with the Arkansas Department of Health to facilitate an educational effort in response to the infiltration of Zika into the United States. The first Zika teleconference was held through ANGELS’ regular high-risk obstetrical case conferences in February of 2016, which was then followed by a webinar series hosted by the Arkansas Department of Health. To keep all providers abreast of Zika best practices, a workgroup met monthly to share and disseminate findings. In times of uncertainty, epidemic and emergency, ANGELS has the capacity to research and compile evidence-based recommendations and disseminate those best practices across Arkansas readily to promote standardization of care for our at-risk and high-risk patients. Our mediums to disseminate are multifaceted, utilizing web-based, real-time, interactive video and our provider network which allows all participants to engage, learn and discuss emerging issues in perinatal care.

It is my privilege to lead such a remarkable team that utilizes new ideas and processes to reduce perinatal adverse events and bolster patient- and family-centered care throughout UAMS and Arkansas. Like you, I am looking forward to another year of great achievements with our team.

Respectfully,

Curtis L. Lowery, M.D.
Director, ANGELS
The ANGELS Education Team provides educational opportunities such as on-site rural education, simulation drills, teleconferences and interactive, online training modules for busy health care providers. Continuing Education and support has been provided to health care professionals in all 75 Arkansas counties.

Education Team

*Back Row:* Brian Lee, Brent Neumeier, Adam Cherepski, Kesha James
*Middle Row:* Kim Miller, Kimberly Lamb, Barbara Smith, Tina Pennington, Susan Smith-Dodson, Margaret Glasgow, Kathy Aldrich, Jo Ann Grace
*Front Row:* Sarah Rhoads, Wendy Ross

1,762
CE Hours Awarded for ANGELS’ Modules
Healthcare Provider Statistics

<table>
<thead>
<tr>
<th>Activity</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended Live Events</td>
<td>4,044</td>
</tr>
<tr>
<td>Completed Enduring Materials</td>
<td>4,488</td>
</tr>
<tr>
<td>Accessed ANGELS Modules</td>
<td>3,008</td>
</tr>
<tr>
<td><strong>Total Provider Participants</strong></td>
<td><strong>11,540</strong></td>
</tr>
</tbody>
</table>

ANGELS Education Activities

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIVE Teleconferences and Events</td>
<td>193</td>
</tr>
<tr>
<td>Archived Video or Online Module</td>
<td>73</td>
</tr>
<tr>
<td><strong>Total ANGELS Education Activities</strong></td>
<td><strong>266</strong></td>
</tr>
</tbody>
</table>

Top 5 Accessed ANGELS Educational Modules:

1. The Zika Virus: What You and Your Patients Need to Know
2. Bowel Injuries: What to Do When Your Case Turns to Poop
3. Liver and Gallbladder Disease in Pregnancy
4. Newborn Congenital Anomalies: Nursing Care after Delivery and During Stabilization
5. Neonatal Resuscitation Program Updates: What is New with the 7th Edition?

Event Topics:

1. Basic Fetal Heart Monitoring
2. AWHONN Intermediate Fetal Heart Monitoring
3. AWHONN Advanced Fetal Heart Monitoring
4. AWHONN Fetal Heart Monitoring Instructor Course
5. STABLE
6. APRN Statewide Teleconference
7. OB Simulation Drills
8. Breastfeeding Symposium
9. Neonatal Resuscitation Program (NRP)
10. ONE Team – statewide weekly teleconference providing education by nurses and for nurses

Coming from the perspective of a presenter for ONE Team and also as a nurse who attends the teleconferences, I am so glad we have ONE Team as a forum for nurses to present topics relevant to our specialty. The nurse-to-nurse interaction provides an opportunity for all of us to learn from each other.

Although the Education Team attempts to have complete attendance numbers each month, the nature of our state-wide educational efforts provides a challenge to get 100 percent of these numbers in a month’s time frame. At the end of each year, we get a summary from the Office of Continuing Education of health care providers attending our events. Our year-end totals are larger and depict the accurate numbers. The monthly numbers give an in-room snapshot of attendees and not statewide attendance.

Teleconferences Offered Each Month

<table>
<thead>
<tr>
<th>Teleconference</th>
<th>Dial-In Number</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONE Team</td>
<td>068773</td>
<td>Every Friday (except 5th Friday)</td>
<td>Noon - 1 p.m.</td>
</tr>
<tr>
<td>PedsPLACE</td>
<td>070231</td>
<td>Thursday Weekly</td>
<td>12:10 - 1:10 p.m.</td>
</tr>
<tr>
<td>OB/GYN Grand Rounds</td>
<td>060130</td>
<td>Every Other Wednesday</td>
<td>8 - 9 a.m.</td>
</tr>
<tr>
<td>HROB Teleconference</td>
<td>Call to Register 501.686.8666</td>
<td>Thursday Weekly</td>
<td>7 - 8 a.m.</td>
</tr>
</tbody>
</table>
Breastfeeding Education

The ANGELS Education Team provides breastfeeding education for providers and mothers through leadership and participation in the following programs:

- Breastfeeding Promotion Taskforce
- Arkansas Breastfeeding Coalition
- UAMS Baby Friendly Committee
- Baby Friendly Modules on Learn On Demand
- Breastfeeding Modules on Learn On Demand
- Breastfeeding Modules on Patients Learn
- Assist with Coordination of the Annual Arkansas Lactation Symposium

A pilot program is planned for 2017 for lactation home visits after the new mother’s discharge from the hospital. Lactation consultants will visit her to support, assess and educate on issues related to breastfeeding. The visits will be conducted via a secure portal to the mother’s phone, laptop or tablet. If the mother needs further assistance, she can have additional visits or an in-person appointment can be arranged at a facility with lactation support.
Zika is a virus that can cause severe birth defects when acquired during pregnancy. In 2016, the number of Zika cases increased across the country, which prompted efforts to educate Arkansas' health care providers and childbearing population about the virus.

A group with representatives from the Arkansas Department of Health, Arkansas Children’s Hospital and ANGELS was organized to collaborate on educational materials and discuss the status of Zika cases. The group met monthly and developed a reference card set and clinic poster that was mailed to delivering hospitals, OB providers, county health units and regional health care providers. The ANGELS Outreach Team distributed materials during their training classes. A digital version of the card set and poster is available on the ANGELS web site.

The Arkansas Department of Health also presented a webinar series to educate health care providers and the public. Other Zika presentations were made during regularly scheduled ANGELS teleconferences and information was shared through the ANGELS newsletter.

Arkansas Department of Health Zika Webinar Series Live Attendees: 255
Zika - What People Need to Know: 100
Zika - What Providers Need to Know: 155

Arkansas Department of Health Zika Webinar Series Enduring Materials Attendees: 231
Zika - What People Need to Know: 99
Zika - What Providers Need to Know: 132

Educational Materials via Mail Distribution: 1,540
- Zika Reference Cards: 810
- Zika Poster: 730

Zika Presentations via Teleconference Attendees: 311
- High-Risk Obstetrics
- Connecting Across Professions
- ONE Team
- OB Grand Rounds
- Pediatric Grand Rounds
- Peds Place
Evidence-Based Guidelines support the ANGELS mission by defining best practices that meet the needs of Arkansas’ women and children for more than 200 high-risk obstetrical, neonatal and pediatric conditions. Since 2003, guideline development has been a collaborative effort that has included more than 200 Arkansas expert authors from multiple disciplines, Arkansas reviewers and out-of-state physician peer reviewers. Health care professionals from 61 Arkansas counties access the guidelines. While the guidelines are developed to support Arkansas’ health care providers, users represent 43 states and 19 countries.

The guidelines can be accessed from a computer or mobile device at https://angelsguidelines.com. Providers can participate in guideline development by sending comments and suggestions for improvement to cdheducation@uams.edu, or by using the ‘Leave a Reply’ form on the website for specific guidelines.

**Facts about the Evidence-Based Guidelines:**

- Quick summary of assessment, diagnosis and management of obstetrical pediatric and neonatal illnesses and conditions
- Reviewed annually by content experts and specialty providers to ensure the most current practice recommendations
- Frequently used as a quick reference or local resource in the office or in the hospital
- 10 new guidelines published each year on various obstetrical, pediatric and/or neonatal topics
- Available in an easy-to-navigate, mobile-friendly format
- Available anytime, anywhere
Outreach Efforts in 2016:

- Presented guidelines to **645** practicing health care professionals, students in OB rotations and advanced practice nursing students
- Exhibited at **8** conference with **2014** combined attendees
- Provided information in **14** counties during on-site training by the ANGELS Education Team
- Mailed **1454** postcards and fliers to OB Providers, Pediatricians, Delivering Hospitals, County Health Units, and Regional Program Providers
- Provided weekly guideline updates through High Risk Obstetrics, PedsPLACE and ONE Team teleconferences with email follow-up to **1284** combined attendees

Health care professionals from **61** of 75 Arkansas counties have accessed the guidelines

ANGELS Guidelines web site was accessed **29,175** times with **47,161** page views
The Outreach Education Team travels the state to conduct OB Simulation drills in the management of rare obstetric emergencies. Health care professionals who are educated and trained to manage rare obstetric emergencies can positively impact outcomes for mothers and babies.

In 2016, the Outreach Education Team traveled to 24 sites across Arkansas to provide various platforms of obstetric education. In addition to the team’s focus on targeted low-frequency, high-risk obstetric emergencies, the simulation structure featured a mock code simulation. To organize the mock code simulation, the Outreach Team partnered with local ambulance services and fire departments.

The high-fidelity manikin was transferred to the emergency service stretcher, loaded into an ambulance and presented unannounced as a patient experiencing the previously taught obstetric emergency. The mock code simulations allowed evaluation of staff knowledge retention, facility processes and efficiency in meeting unexpected demands. This ambush-style technique received positive feedback from participants. Debriefing was done after each simulation, whether scheduled or ambush, to allow participants to self-evaluate their performance and identify areas of improvement. Due to the unannounced nature of the mock codes, continuing education credit was not offered.

If you would like an OB Simulation drill at your facility, please contact cdheducation@uams.edu or call 1.866.273.3835.
Medical facilities participating in the OB Simulation drills:

- Benton
- Fulton
- Jackson
- Cleburne
- Poinsett
- Mississippi
- Craighead
- Greene
- Independence
- Lawrence
- Sharp
- Clay
- Izard
- Randolph
- Van Buren
- Stone
- Camden
- Washington
- Madison
- Newton
- Searcy
- Stone
- Independence
- Little Rock
- Maumelle
- North Little Rock
- Morris
-359x55

Health care professionals attended and evaluated the simulations:

<table>
<thead>
<tr>
<th>Role</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.D.s (OB/GYN, Family Practice, Emergency Medicine)</td>
<td>32</td>
</tr>
<tr>
<td>Nurses (C.R.N.A., A.P.R.N., C.N.M., R.N., L.P.N.)</td>
<td>441</td>
</tr>
<tr>
<td>Other Medical Professionals (Paramedic, Emergency Medical Technician, Respiratory Therapist, Scrub Tech, Nursing Tech, Nursing Student)</td>
<td>82</td>
</tr>
</tbody>
</table>

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STABLE

STABLE is an instructional program that educates and trains nurses working in neonatal critical care. The program uses evidence-based practices to establish continuity of care while stabilizing newborn infants in distress. The goal of the program is to reduce mortality and morbidity of infants born in Arkansas medical facilities.

Medical Facilities Participating in STABLE:

- Conway Regional Health System
- White River Medical Center
- St. Mary’s Regional Medical Center

“I am traveling throughout Arkansas teaching STABLE to our smaller hospitals. Arkansas has a few metropolitan areas with the larger referral NICUs, but most of the state is rural, so I am now reaching those whom it benefits the most.”

Tina C. Pennington, BSN, RNC-NIC
Clinical Services Manager - Center for Distance Health Neonatal Outreach Coordinator

56 Trained and Certified in STABLE Principles
Fetal Monitoring Courses

The UAMS Outreach Team offers online and face-to-face instruction in all levels of fetal monitoring.

An online basic fetal monitoring course module is available on learnondemand.org and the basic course is presented to obstetric intern physicians and new graduate hires at UAMS as requested.

Margaret Glasgow, R.N.C.-OB, also presents on-site intermediate, advanced and instructor trainer courses using curriculum from the Association of Women’s Health, Obstetric, and Neonatal Nurses (AWHONN). These courses assist health care professionals and ensure that current, evidence-based care is being provided for the obstetric patients of Arkansas.

For more information, call 501.526.8098 or email Margaret Glasgow at glasgowmargarete@uams.edu.

On-Site Fetal Monitoring Courses

- 22

On-Site Fetal Monitoring Course Attendees

- 126

Basic Fetal Monitoring Online Module Users

- 36

Neonatal Resuscitation Program (NRP)

UAMS and the American Heart Association (AHA) have partnered to offer the Neonatal Resuscitation Program (NRP). This online, self-study course provides an evidence-based approach to resuscitation of newborns to physicians, nurses, respiratory therapists and other providers who care for newborns at the time of delivery. Focus is placed on methodology, critical leadership, communication and teamwork. In January 2017, the program introduced changes in the 7th Edition.

After a clinician has completed the online, self-study course, the Outreach Team assists with skill assessments, which can be scheduled at any facility in Arkansas.

In 2017, Tina Pennington, B.S.N., R.N.C.-N.I.C., joined the Outreach Education Team. Tina brings extensive NICU knowledge and experience, which will allow the team to expand neonatal education offerings.

For more information, call 501.686.7576, or email Tina Pennington at penningtontinac@uams.edu.

NRP Education Mega-Code Check-Offs

- 3

Attendees

- 14
The Arkansas Perinatal Outcomes Workgroup using Education and Research (POWER) meeting was held in April 2016 at the Rockefeller Institute. The event, open to all hospitals in Arkansas that provide obstetric services, focused on gathering input from maternal/infant nursing leadership and identifying ways to improve perinatal outcomes through statewide initiatives. Through small group discussion, participants identified areas of patient care that could be improved. POWER will encourage delivering hospitals to continue to collaborate and provide the most efficient evidence-based care to achieve the best outcomes for the mothers and babies of Arkansas.

Identified Categories of Improvement

- Evidence-based policies and procedures for oxytocin administration and related fetal monitoring
- Barriers to accomplishing change within a facility

Maternal Safety Bundles

University of Arkansas for Medical Sciences (UAMS) Antenatal and Neonatal Guidelines, Education and Learning System (ANGELS) and Center for Distance Health (CDH) will host a networking event in April 2017 for every facility in the state of Arkansas that provides obstetric services. The topic for the 2017 event is implementing patient safety bundles. The focus will be Postpartum Hemorrhage Safety Bundle and Hypertensive Emergencies in Pregnancy Safety Bundle.

Each facility participating in the workgroup will receive components of both safety bundles, to include web addresses of national groups spearheading implementing safety bundles, supporting literature and hyperlinks to other supporting literature. The workgroup will introduce the facilities to the concept of safety bundles, then begin working to prepare the facility to adopt the bundle. The facility will identify aspects of the bundle already in place and those aspects needing to be developed. One of the steps it to identify potential barriers to the implementation of the bundle.

With the goal of every facility implementing these two safety bundles, each facility in the state will be assigned a staff mentor to facilitate the process. The staff will hold regular virtual meetings to assess progress and identify areas needing support towards the implementation of both safety bundles.
In 2016, the ANGELS Call Center once again experienced an increase in calls, including calls for clinic appointments and referrals for maternal fetal-medicine evaluations.

Call center policies were reviewed and compared with information disseminated in the clinics to ensure consistency with guidelines and recommendations that affect our obstetrical and gynecological patients. In addition, we reviewed and updated information contained in our CAMP guidelines (Centralized Antepartum Monitoring Program) to ensure that the women enrolled in that program have rapid and easy access to doctors and nurses if needed.

We also looked for new ways to use technology to reach patients in convenient ways. Use of HIPAA-secured text messaging and software allowed face-to-face interaction with callers and enabled patients to “show” doctors and nurses their physical concerns.

175,728
Calls were managed by the ANGELS Call Center in 2016; which included:

42,646 ANGELS Appointment Center and 133,082 ANGELS Call Center calls
## Call Center DATA

<table>
<thead>
<tr>
<th>Month</th>
<th>Total # Urgent Care Visits w/ Telephone Triage</th>
<th>Total # Non-Urgent Care Visits w/ Telephone Triage</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>428</td>
<td>622</td>
</tr>
<tr>
<td>February</td>
<td>369</td>
<td>722</td>
</tr>
<tr>
<td>March</td>
<td>404</td>
<td>702</td>
</tr>
<tr>
<td>April</td>
<td>379</td>
<td>629</td>
</tr>
<tr>
<td>May</td>
<td>416</td>
<td>723</td>
</tr>
<tr>
<td>June</td>
<td>437</td>
<td>659</td>
</tr>
<tr>
<td>July</td>
<td>451</td>
<td>702</td>
</tr>
<tr>
<td>August</td>
<td>462</td>
<td>701</td>
</tr>
<tr>
<td>September</td>
<td>404</td>
<td>620</td>
</tr>
<tr>
<td>October</td>
<td>425</td>
<td>675</td>
</tr>
<tr>
<td>November</td>
<td>412</td>
<td>596</td>
</tr>
<tr>
<td>December</td>
<td>422</td>
<td>597</td>
</tr>
<tr>
<td><strong>2016 Total</strong></td>
<td><strong>5,009</strong></td>
<td><strong>7,948</strong></td>
</tr>
</tbody>
</table>

***Please note that the totals in the above chart are obtained strictly from Call Records (UAMS and ADH pts.) which had a Call Outcome of 911 or to be seen in ED or L&D by Primary or Secondary Triage***

**676**
Urgent Care Visits Avoided with Telephone Triage

**575**
OB Transport Requests

**417**
Provider-to-Provider Consults

**12,957**
Nurse Triage Calls
Telemedicine Network and Clinics

Telemedicine Sites

Telemedicine Team

Rosalyn Perkins, M.N.Sc., A.P.R.N.
Mandi Dixon, R.D.M.S.
Margaret Glasgow, B.S.N., R.N.C.-O.B., C.S.M.
Lori Heil, R.D.M.S.
Stacey Johnson, A.P.R.N.
Jeni Warrior, A.P.R.N.

3,309
Total Telemedicine Visits

Telemedicine Visits

OB
Colposcopy - 894
Fetal Echocardiography - 136
HROB - 247
Other - 128
Diabetes - 40

Total Telemedicine Visits

OB Ultrasounds - 1,848

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Colposcopy

Colposcopy Sites:
Boone County - Harrison
Cross County – Wynne
Desha County – Dumas
Hempstead County – Hope
Johnson County – Clarksville
Lawrence County - Walnut Ridge
Lonoke County - Lonoke
Ouachita County - Camden
Washington County Health Department – Fayetteville

Colposcopy Team

W.C. Hitt, M.D.
Tesa Ivey, A.P.R.N.
Delia James, A.P.R.N.
Michelle Jernigan, A.P.R.N.
Gordon Low, A.P.R.N.
Janna Michael, A.P.R.N.
Jeni Warrior, A.P.R.N.

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Telemedicine Network and Clinics

Telemedicine in the Nursery

Telenursery

Whit Hall, M.D., professor of neonatology in the UAMS College of Medicine, leads virtual census rounds three times a week in 26 nursery sites statewide (including UAMS). These rounds include neonatology and subspecialty consultations, coordination of transports and back transports, follow up on neonatal and maternal transports, collaboration and education.

Mother-Baby Connections

Using telemedicine technology, postpartum mothers are connected with their babies when they are transferred to Arkansas Children’s Hospital (ACH). When a mother delivers a baby that needs to be transferred to ACH for treatment, the mother typically remains hospitalized for 24 hours or more at UAMS or her distant hospital. Telemedicine technology enables mothers and babies to stay connected while receiving necessary health care.

138
UAMS Signed-On and Led Telenursery Virtual Rounds

515
Telenursery Rounds Census Participants Between All Sites

18
Back Transports from UAMS to Referring Hospital (not including transfer decisions made outside of telenursery rounds)
Arkansas has one of the highest rates of opiate exposure during pregnancy in the country. Expectant mothers with a history of opiate exposure represent a complex clinical challenge, and often require a multi-disciplinary approach to pain management through delivery and close observation of the baby in the early neonatal period following delivery.

The ANGELS Call Center serves as a primary source of referrals for the Women’s Mental Health Program and the expansion of services provided for pregnant women with substance use disorders and pain management in pregnancy.

Shona Ray-Griffith, M.D., and Jessica Coker, M.D., oversee the program for substance use disorders during pregnancy, which includes options for medication-assisted treatment. The program, part of the Perinatal Opiate Project, collaborates with obstetrics, anesthesia and neonatology to improve outcomes for women and neonates exposed to opiates during the perinatal period.

Additionally, Shona Ray-Griffith, M.D., directs a program for the management of chronic pain disorders during the perinatal period. This program focuses on balancing benefits of treatments with the risks of in utero exposure to the fetus.

In both programs, expectant mothers who require pain medication and those misusing/abusing opiates and similar drugs receive comprehensive evaluations and individualized treatment plans, which include a risk/benefit analysis to review treatment options, mediation management, group and individual therapy, treatment planning for management through delivery, and in some cases, hospitalization for opiate detoxification.

Primary goals of Women’s Mental Health Program/Perinatal Opiate Project:

- Develop evidence-based guidelines for the management of pain during pregnancy
- Improve the care of women
- Reduce obstetrical complications
- Reduce neonatal distress
Telemedicine Network and Clinics

Diabetes Care in Pregnancy

The ANGELS program continues to provide diabetes care for pregnant women throughout the state of Arkansas. The UAMS Obstetrical Center for Management of Hyperglycemia in Pregnancy was recently reaccredited as an American Association of Diabetes Educators (AADE) Diabetes Education Accreditation Program (DEAP) for the third consecutive year. This AADE DEAP accreditation status ensures that the diabetes education provided to our patients remains in compliance with national standards. Three certified diabetes educators (CDE) participate in the direct care of over 200 obstetrical patients each year in Little Rock with additional patients receiving care and education via telemedicine.

Benefits of Diabetes Education

While obstetricians provide for overall patient care, diabetes educators empower patients to manage their diabetes. They teach, coach and guide patients so they understand how diabetes affects their pregnancy. Self-management skills such as monitoring blood glucose, interpreting the results and adopting healthy eating habits are especially important for newly diagnosed gestational diabetes patients. Patients with pre-existing type 1 or type 2 diabetes learn how pregnancy affects their diabetes, along with pregnancy-specific blood glucose targets and meal plans. Effective education can improve pregnancy outcomes and has the potential to decrease health care costs by decreasing hospital admissions.

WIN: Online Diabetes Education

Web-Based Instruction on Nutrition (WIN) is a series of three interactive education modules available to expectant mothers with diabetes: 1) Introduction to Gestational Diabetes, 2) Management of Hyperglycemia in Pregnancy, 3) Preventing Type 2 Diabetes: Tips for Prevention and Management after Delivery. The online modules are available in English and Spanish at patientslearn.org. After completing a short registration process, women can work through each module at their own pace. Patients have the opportunity to get additional information by clicking on the ASK THE EXPERT link, which puts patients in touch with an ANGELS diabetes educator. These instructional modules can be used as stand-alone education or as a supplement and/or review of face-to-face teaching. This option is especially helpful to women living in rural areas of the state.
Telemedicine Consultations

Patients can receive individualized diabetes education via telemedicine if time or travel restrictions prohibit a drive to UAMS. This option for co-management ensures that patients receive the same high-quality care available in a face-to-face setting. In the past year, telemedicine diabetes consultations have been delivered via interactive video to patients at several distant sites including the health departments in Craighead, Hempstead, Sevier and Washington counties as well as the Magnolia and Texarkana regional health centers. To find out how your patients can access diabetes education via telemedicine, please contact ANGELS at 1.866.273.3835.

26%
C-Section rate for diabetes patients managed by this program compared to 34% national rate

143
Women completed the WIN Educational Modules in 2016

40
Rural women were case managed by TM in 2016

Nutrition Education Team

Left to right: Nafisa Dajani, M.D.; Pam Prutzman, M.S., R.D., L.D.; Brooke Keathley, A.P.R.N., CDE; Denise Ragland, Pharm.D., CDE; Andrea Tappe, R.D., L.D., CDE
Arkansas Fetal Diagnosis and Management (AFDM)

Arkansas Fetal Diagnosis and Management (AFDM) is a multidisciplinary program developed for pregnant women and their families who have been given a diagnosis of a fetus with a known congenital anomaly or genetic or chromosomal abnormalities.

The AFDM Team coordinates cases by providing treatment options and plans for the delivery and care of a newborn. The multidisciplinary team meets regularly to discuss individualized plans for each patient, and the team is notified of scheduled deliveries with proposed plans of care. Follow-up is provided to referring physicians.

CAMP - Centralized Antenatal Monitoring Project – is designed to assist legally consenting, stable antepartum patients with selected high-risk conditions remote from delivery. The program enables patients with a compromised infant to stay in close proximity of a care center that can offer specialized maternal-fetal medicine, obstetric services and neonatal services, including a neonatal intensive care nursery. All expectant mothers who may benefit from CAMP must be approved by a UAMS maternal-fetal medicine specialist. CAMP is established at the Markham House in Little Rock.

AFDM Team

Paul J. Wendel, M.D.
Sara Peeples, M.D.
Lori Gardner, R.N.

ANGELS Sonographers

Lisa Caine, R.D.M.S.
Mandi Dixon, R.D.M.S.
Bill Hickey, R.D.M.S.
Lynne Tate, R.D.M.S.

UAMS Sonographers

489

New Cases Admitted into AFDM Program
Arkansas Reproductive Genetics Team

Starting at left: Nafisa Dajani, M.D.; Paul Wendel, M.D.; Curtis L. Lowery, M.D.; E. “Pat” Magann, M.D.; James Alexander, M.D.; Adam Sandlin, M.D.

Maternal-Fetal Medicine Team

Starting at left: Shannon Barringer, M.S., C.G.C. (Not Pictured); Jordan Hills
Sarah R. Green, M.S., C.G.C.
Noelle R. Danyechuk, M.S., C.G.C.
Christopher Ciliberto, M.S., C.G.C.
Stephanie Jez, M.S.
Angie Hunton, B.S.N., R.N.C.

3,477 Patient Visits

494 Abnormalities diagnosed

Maternal-Fetal Medicine Fellows

Starting at left: Kelly Cummings, M.D.; Pamela Simmons, M.D.; Dawn Hughes, M.D.
Case Management

286
Live Deliveries

134
Babies Transferred to ACH

20
AFDM Cases Admitted to CAMP

132
Neonatology Consults

Outreach Case Management

A.P.R.N. Case Management Team

Left to right: Stephanie Wyatt, Edwina Walthall, Brooke Keathley, Gordon Low, Stacey Johnson, Delia James, Angela Graves
Not pictured: Mary Devine, Shannon Graham, Janna Michael
Patientslearn.org is an educational web portal that offers more than 50 course modules designed to help patients learn how to manage their illnesses and conditions. The portal offers education on a variety of health topics, including women’s health, high-risk pregnancy, pediatrics and primary care.

Course development is continuously taking place with different departments across the UAMS campus, as well as some outside entities.

The site, which launched in March 2015, has users from 52 Arkansas counties.

Top 5 – Most Accessed Modules:
1. Childbirth Education
2. Labor and Delivery Virtual Tour
3. Breastfeeding 101
4. Folic Acid in Pregnancy
5. WIN: Gestational Diabetes Overview

579
Registered Users

68
Interactive Modules Available (39 are ANGELS’ Modules)

52
of the 75 counties in Arkansas have Registered Users
A Patient’s Story
In 2014, Jackie Gosselin and her husband, Chris, were excited about expecting their third child. The couple, already the parents of two daughters, learned at Jackie’s 20-week ultrasound that the baby, a boy, had an issue with a kidney. Her OB/GYN, Kristin Markell, M.D., of Her Health at Washington Regional Medical Center in Fayetteville, recommended a level 2 ultrasound through the ANGELS telemedicine program.

Jackie said, “This was my first experience with telemedicine. I was at the UAMS NW campus, and the doctor was at UAMS in Little Rock. Using a camera, she was able to read and discuss the ultrasound results with us right away.”

Nafisa K. Dajani, M.D., maternal fetal medicine specialist, diagnosed the Gosselins’ baby with hydronephrosis, swelling of a kidney due to a build-up of urine, which occurs in 1 in 100 pregnancies.

Throughout her pregnancy, Jackie received medical care in her hometown with the support of Markell and the UAMS telemedicine program. On July 22, 2014, she gave birth to John Cooper at Washington Regional Medical Center. While the Gosselins’ and their prenatal care team hoped that the kidney issue would resolve on its own as the baby matured, John Cooper required additional medical care and had surgery on his kidney in August 2016. Now, he is a happy and healthy member of the Gosselin family.

In 2015, the Gosselins learned that they were expecting their fourth child. At Jackie’s 20-week ultrasound, the couple learned that the baby had a heart defect.

Jackie said, “This news was totally unexpected, especially after all we had gone through with John Cooper.”

Jackie and Chris followed the advice of Markell and traveled to UAMS in Little Rock for additional tests. The baby was diagnosed with Tetralogy of Fallot, a heart defect. UAMS pediatric cardiologist, Thomas Best, M.D., talked with the couple about what could happen at birth and the possibility of open heart surgery.

Once again, Jackie returned home and received medical care in her home town with the support of Markell and the UAMS telemedicine program. The couple’s second son, Harrison, was born on April 24, 2016, at UAMS, then transferred to Arkansas Children’s Hospital NICU. At ten weeks, he underwent open heart surgery. Today, the Gosselins are preparing for Harrison’s first birthday.

Jackie said, “All of our family lives in Florida. Although we have support from our church and friends, watching our children was a lot to ask so that we could make a six-hour round trip to Little Rock. I needed several ultrasounds, which would have required several trips. I was able to have my level 2 ultrasounds at UAMS NW. I could take care of my children, and my husband didn’t need to take off work. He could even come over on his lunch break to attend my telemedicine appointments. Thanks to the ANGELS telemedicine program, we were able to get immediate results and talk to the doctor about our concerns. It was wonderful to receive care at home and not have to travel. It was a great experience for our family.”
To evaluate the ANGELS program and determine its effect on mothers, babies and the health care system, the ANGELS Evaluation and Research Team has created a database of claim, birth certificate and hospital discharge records. With data from 2012 and 2013, the team updated the standard metrics in the ANGELS dashboard used to analyze trends from two years prior to the implementation of ANGELS through nearly 11 years of the program’s operation.

Based on these metrics, the team shows a general continuation in the improvement of birth outcomes for Arkansas’ Medicaid-covered population between 2001 and 2013. Neonatal mortality improved in the years since ANGELS’ implementation, with a clear downward trend across the years in spite of some yearly variation.

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Evaluation and Research Team

David Fletcher, M.B.A.  Sarah Rhoads, D.N.P., Ph.D.  A.P.R.N.
Janet Bronstein, Ph.D.
Rachel Ott, B.A.
Tina Pilgreen, M.S.
Christian Lynch, M.P.H.
Hari Eswaran, Ph.D.
The team also tracks pre-term deliveries that occur in hospitals with the Neonatal Intensive Care Units (NICU) these fragile babies need. We have seen a general increase in the portion of deliveries in NICU hospitals since ANGELS began and a sizable rebound in the portion of the most premature babies born in NICU hospitals after a slight decline in 2012.

The rate of postpartum complications in Medicaid deliveries decreased significantly two years following ANGELS’ implementation, with the lower rate maintained for the next five years before increasing in 2013. With the detailed data available in the ANGELS database, evaluators were able to isolate postpartum hemorrhaging as the primary reason for this increase in 2013. ANGELS has developed programs to respond to these conditions, such as POWER (Prenatal Outcomes Workgroup using Education and Research), which works with hospital teams to address barriers to evidence-based practice and decrease maternal morbidity and mortality throughout the state. Subsequent evaluations will determine whether these educational interventions have contributed to the reduction of postpartum complications, while also tracking ANGELS’ overall impact on outcomes and access to specialty care for Medicaid recipients.
Before deciding to conceive a second child, Ashley King and her husband, James, knew it was important to have an understanding of neonatal alloimmune thrombocytopenia, a life-threatening platelet disease that affects fetuses and newborns. The disease is caused by an inherited gene from both mother and father.

When their son, Levi, was born at Washington Regional Medical Center in October 2014, he had a dark purple hue to his skin. He was examined by Marla K. Harrison Lightburn, M.D., a neonatologist at the University of Arkansas for Medical Sciences (UAMS), who made a preliminary diagnosis of neonatal alloimmune thrombocytopenia. Lightburn recommended that Levi be transferred by med flight to the NICU at Arkansas Children’s Hospital. The Kings traveled to Little Rock to be with their son. Levi spent 11 days in the NICU undergoing tests, which indicated no signs of brain bleeds or other problems. He eventually began to generate his own platelets and was able to go home.

To ensure appropriate genetic counseling and testing, Lightburn arranged an appointment for the couple with Paul Wendel, M.D., maternal-fetal medicine specialist at UAMS, and Shannon Barringer, M.S., C.G.C., with the Arkansas Reproductive Genetics Program at UAMS.

Ashley said, “Using telemedicine, we were able to have our genetics visit at Washington Regional, which is located seven minutes from our home. During the consultation, we talked with our health care team all at one time and received guidance about steps we could take before having another child. Through genetic testing, we learned that Levi did not have neonatal alloimmune thrombocytopenia, which was a blessing.”

Since Levi’s birth, Ashley’s husband, James, started a new job and also learned that he had a kidney condition that required dialysis. Ashley said, “Telemedicine allowed us to get the information we needed for the health of our family without James taking a full day off of work, being away from his doctors or getting childcare for Levi. The ANGELS Telemedicine Program was convenient and connected us with the genetics specialists who could provide clarity about our situation.”
Neonatal Education Courses

Tina Pennington, B.S.N., R.N.C.-NIC, has joined the Outreach Education Team. Tina brings more than 18 years of NICU knowledge and experience to her role. She is a certified instructor for both NRP and STABLE, and she can facilitate more courses on and off site. UAMS is currently offering facilities the new simulation and instructor mentoring components of NRP that many new instructors are finding difficult to arrange. STABLE is offered as a distance learning class through interactive video, or can be taught live at distance sites if the facility requests it. Other expansions will be neonatal emergency modules tied to the current OB emergency scenarios with more focus on improving neonatal outcomes and the development of standardized neonatal competencies for Arkansas’ delivering hospitals.

Obstetric Patient Safety Program

Margaret Glasgow, B.S.N. R.N.C. - OB, received training in AWHONN’s Obstetric Patient Safety Program. This pilot program trained instructors on the most up-to-date, evidence-based skills to promote patient safety. The targeted course will assist clinicians with implementing the national consensus postpartum hemorrhage safety bundle, which will launch in 2017. AWHONN plans to roll out education on other obstetric emergencies in the near future.

Lake Village

Autumn Bennett, WHNP-BC, has joined the ANGELS team to provide services to women in the Lake Village area. Autumn is a women’s health nurse practitioner offering primary and specialty services in gynecology and prenatal care. She brings more than 15 years of experience in labor and delivery to her role. She obtained her Master’s degree from UAMS in women’s health and is currently working on a dual certification in Adult/Geriatrics Primary Care Post Master’s certification.

The facility will increase access to care and health promotion services for the community. A few of the services to be offered include telemedicine consultations for the management of high risk OB conditions, such as chronic hypertension, thyroid dysfunction, diabetes and education.