

Arkansas Department of Health

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Governor Mike Beebe

Paul K. Halverson, DrPH, FACHE, Director and State Health Officer

November 5, 2009

Senate and House Interim Committee on Public Health,
Labor and Welfare
State Capitol Building
Little Rock, AR 72201

Dear Sir/Madam:

The Infant Hearing Program at the Arkansas Department of Health submits the 2008 annual report on behalf of the Universal Newborn Hearing Screening, Tracking, and Intervention Board, as specified by Act 1559 of 1999. Pursuant to this Act, the report is sent to the House and Senate Interim Committees on Public Health, Welfare and Labor.

If you have questions regarding the report, please call me at 501-280-4761.

Sincerely,

Millie Sanford, M.S., CCC-A
Coordinator, Infant Hearing Program
Arkansas Department of Health
4815 West Markham Street, Slot 20
Little Rock, AR 72205

Enclosure

MS/nd



EHDI Annual Report

Arkansas Early Hearing
Detection and Intervention

Annual Report

January 2008 - December 2008

**Submitted by:
Arkansas Department of Health
Infant Hearing Program
Child and Adolescent Health**

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Infant Hearing Program

The Infant Hearing Program (IHP) at the Arkansas Department of Health (ADH) serves as the state Early Hearing Detection and Intervention Program (EHDI). Funding of the IHP is provided through three (3) sources: 1) the Health Resources and Services Administration (HRSA) Universal Newborn Hearing Screening grant, 2) the Centers for Disease Control and Prevention (CDC) EHDI Cooperative Agreement, and 3) the HRSA Maternal and Child Health Block Grant. In conjunction with the national and international Early Hearing Detection and Intervention initiative, the IHP shares the vision to establish norms regarding the importance of the newborn hearing screen, follow-up audiological evaluations, and culturally appropriate early intervention.

1. **Program Purpose:**

The focus of the Infant Hearing Program is to ensure quality developmental outcomes for infants identified with hearing loss. The IHP works with hospitals, early intervention programs, parents and stakeholders to assure the provision of hearing screening to newborns and follow-up services for those identified with hearing loss.

2. **Program Goals:**

All newborns will be screened for hearing loss before 1 month of age, preferably before hospital discharge.

All infants who screen positive will have a diagnostic audiologic evaluation before 3 months of age.

Our Message to You

Enabling legislation for the Infant Hearing Program (IHP), also known as the Early Hearing Detection and Intervention (EHDI) Program, is Arkansas Act 1559 of 1999. Effective since September 2000, this Act mandates newborn hearing screens at birthing hospitals. The IHP submits an annual report to the Universal Newborn Hearing Screening, Tracking and Intervention Advisory Board. This report contains information from Arkansas's eighth year of Universal Newborn Hearing Screening. Information in this report provides a close look at hearing screening activities in birthing hospitals throughout the State and results of follow-up screening. The data collected during 2008 will outline strengths and weaknesses of the IHP Program, thereby directing the development and expansion of goals toward improvement.

A successful statewide IHP Program depends on collaboration among many entities, both state and private. We thank you for your support of newborn hearing screening efforts in Arkansas.

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All infants who screen positive will have a diagnostic audiologic evaluation before 3 months of age.

All infants identified with hearing loss will receive appropriate early intervention services before 6 months of age (medical, audiological, and early intervention).

All infants and children with late onset, progressive or acquired hearing loss will be identified at the earliest possible time.

3. Program Services:

The Infant Hearing Program maintains a comprehensive tracking database system to assure that all newborns are screened for hearing loss before hospital discharge; that infants are tracked for timely follow-up evaluations; those identified with hearing loss are enrolled in Early Intervention; families have access to family-to-family support; and that children with confirmed hearing loss are linked to a medical home.

4. State Law:

Hearing screening for newborns in Arkansas is mandated by Act 1559 of 1999. The IHP, located in the ADH's Center for Health Advancement, is the program that oversees the regulatory component of the mandate.

5. Conclusions:

Hospital Performance (**Tables 1, 2 and 3**)

- **Table 1, Table 2 and Table 3** detail the overall performance of Arkansas's birthing hospitals' (those greater than 50 births per year) newborn hearing screening performance, January -December, 2008.

Post-Discharge Testing (Table 4)

- **Table 4** provides details for 2008 on the number of hearing tests performed post-discharge. The total proportion returning for post-discharge rescreening or diagnostic audiological testing decreased slightly, from 66% in 2007 to 65.5% in 2008.

Diagnostic Testing (Figures 5, 6 and 7)

- **Figures 5, 6 and 7** provide details on the number of children diagnosed with a permanent hearing loss, number of diagnostic evaluations performed and ages at time of evaluation.

For more information:

Phone **501-280-4740**
Fax: **501-280-4170**
Website **www.arhealthyhearing.com**

Organizational Profile

Within the Arkansas Department of Health, there are four Centers: the Center for Health Protection, the Center for Health Advancement, the Center for Local Public Health and the Center for Public Health Practice. The Infant Hearing Program (IHP), Arkansas's EHDI, is located in the Center for Health Advancement, Family Health Branch, as part of the Child and Adolescent Health Section.

Agency programs which collaborate with EHDI are also housed in the Family Health Branch and include Lay Midwifery reporting and licensing, Metabolic Newborn Screening, Sudden Infant Death Syndrome (SIDS), and the ConnectCare Program.

Current Program Team

Millie Sanford, M.S., CCC-A, Program Coordinator – Millie assumed the role of Coordinator of the Infant Hearing Program in July 2001. Prior to that she served as Coordinator of the Vision and Hearing Screening Program and as a clinical audiologist within the Arkansas Department of Health. She has been with the Agency for 16 years and brings to the Coordinator’s position a vast working knowledge of clinical audiology and program management.

Stacy Webb, RN, Follow-up Consultant – Stacy became a part of the Infant Hearing Program in 2005. Prior to this time, she served in the capacity of Nurse Associate with Federal Occupational Health where she performed many health assessments including audiograms. Stacy brings 19 years of nursing experience and expertise to her position as Follow-up Consultant. She plays a pivotal role in ensuring every child born in Arkansas receives a newborn hearing screen and other services as needed.

Nancy Dunlap, Health Program Specialist – Nancy joined the Program in May, 2009. She has over 30 years experience in State Government. She brings exceptional experience to the Program in the areas of fiscal and biennial budget preparation, the creation and maintenance of data bases for health care facilities, as well as grant application preparation, review and approval.

Parent-to-Parent Consultant – Vacant.

Joanie Ward, Medical Secretary – Joanie has extensive experience with the Infant Hearing Program. She was hired in 1987 specifically to work with the “baby program”. Her position includes responsibility for data entry via optical image scanning, data entry of follow-up hearing screening results, and daily letter generation for notification of parents with infants needing follow-up testing.

Shirley Brewer, Secretary II – Shirley has been with the Arkansas Department of Health for 26 years. She has worked in various positions during her employment. Her involvement includes experience in data processing, WIC, Vital Records, AIDS/STD and presently Child and Adolescent Health. She has served in the capacity of secretary for the Infant Hearing Program since 1998.

2008 Program Highlights

- **Linkage to Electronic Birth Certificate (EBC)**

The EHDI Program and the Arkansas Department of Health's (ADH) Vital Records' (VR) Section began plans toward development of an Electronic Vital Records System (EVRS) with linkage of an electronic infant hearing screen module. The pre-implementation phase for EHDI involved the development of functional requirements for hearing screen and demographic data fields compatible with the design of the EBC.

- **Matching Process**

EHDI and Vital Records/Health Statistics collaborated in a matching process for birth certificates and hearing screen forms. The "matching process" identifies infants who have a birth certificate but for whom the EHDI program does not have information. The average matching ratio for hearing screen to birth certificate data for 2008 was 97%. This process will end upon implementation of the EBC.

- **Needs Assessment**

The EHDI program undertook activities to increase stakeholder participation and provide input from communities. The University of Arkansas at Little Rock, Institute of Government, conducted a needs assessment to identify challenges/barriers for non-return of infants needing follow-up testing. The Institute selected ten (10) counties based on the geographic and demographic diversity of the state. Eighteen (18) hospitals over a ten (10) county area participated in the study. Evaluation methods consisted of: 1) telephone interviews, 2) closed-ended, in-person questioning, and 3) open-ended, in-person interviews.

A report on the findings “Study of Outreach Activities Regarding Infants Lost-to-Follow-up in a Selected Number of Arkansas Counties” was completed in November, 2008. Copies of the Report can be obtained from the IHP Program.

- **IHP Website**

The EHDI Program worked with the Information Network of Arkansas (INA) to provide enhancements to the Program’s existing website at www.arhealthyhearing.com. The enhancements provide a user-friendly, on-line environment for primary care physicians, audiologists, parents, and other stakeholders. Other additions include: 1) accessibility in both English and Spanish, 2) a direct contact link to program staff for feedback, 3) a link for brochures with parent information, 4) links to sites for materials and information to download, and 5) follow-up provider sites and site maps for additional hearing screening/diagnostic follow-up.

- **Site Visits**

Staff conducted site visits to birthing hospitals across the state to provide: independent chart reviews, a standardized script to be used by hearing screening personnel, and individualized training. The site visits allow for quality assurance through a combination of observation and interaction with staff and the assessment of hospital programs.

- **IHP Sponsored Advertisements**

The IHP purchased a full-page advertisement in the 2008 *Happy Birthday Baby Book*, a project co-sponsored by the Arkansas Department of Health and Baptist Health. The free booklet includes valuable information for the care of mother and baby. Approximately 15,000 expectant mothers receive the booklet annually.

- **IHP Brochures**

IHP developed and disseminated new parent information brochures. These brochures provided general information for parent awareness of hearing screening and specific information regarding newborns/infants who failed the hearing screen.

- **Otoacoustic Emmissions (OAE) and Automated Auditory Brainstem Response (AABR) Equipment Loaner Program**

The program consists of three (3) OAEs and two (2) AABRs. During the period of January 2008 through December 2008, the OAE equipment was loaned for a total of 351 days and the AABR equipment was loaned for a total of 256 days to various hospitals statewide.

- **Provision of Educational Materials**

Selected pediatricians and Community Health/Education Centers received copies of The Pediatric Resource Guide to Infant and Childhood Hearing Loss, published by the Center for Early Intervention on Deafness.

- **IHP Sponsored Conferences and Workshops**

The EHDI Program provided several trainings to stakeholders. In July 2008, Cultural Competency training was offered to Early Intervention providers working with infants and children with hearing loss. Additionally, the IHP hosted a workshop for the Universal Newborn Hearing Screening (UNHS) nurses working in birthing hospitals.

Future Goals

- Incorporation of evaluative measures into the design and implementation of IHP's linkage to the Electronic Birth Certificate.
- Utilization of the nationally recognized Goal Attainment Scale (GAS) to rate each birthing hospital before/after sending unmatched records report. GAS usage allows the Program to identify hospitals needing assistance, measure achievement of intervention goals, and track progress.
- Expansion of collaborative relationships for system change. In collaboration with the Audiology and Speech Pathology Consortium program through the University of Arkansas for Medical Sciences/University of Arkansas at Little Rock (UAMS/UALR) and the Department of Audiology and Speech Pathology at Arkansas Children's Hospital (ACH), a contractual agreement will be developed for a pilot project. This Pilot Project will expand the number of facilities providing quality hearing screen component services by using non-traditional sites, and enhancing training of graduate students from the UAMS/UALR Audiology doctoral program through work at sites with an experienced, licensed pediatric audiologist.
- Continuing collaboration with the University of Arkansas at Little Rock's (UALR) Survey Research Department to develop, distribute, and analyze a survey tool targeting Primary Care Physicians (PCPs). The survey focuses on newborns/infants who failed the hearing screen to determine referral protocols, state reporting per the mandate, and the provision of in-office physiological hearing screening. Survey results will assist in determining if under-reporting by infants' PCPs is a significant factor in the number of Arkansas's infants lost to follow-up.

- Continued dialogue with Part C administration about the need for reciprocal exchange of data through a Memorandum of Agreement (MOA) between the Arkansas Department of Health's Infant Hearing Program and the First Connections, Early Intervention Program at the Arkansas Department of Human Services.
- Continuation of the equipment loaner program, as well as the addition of equipment, for loan to birthing hospitals when equipment malfunction is experienced. The equipment loaner program serves to reduce the number of children who did not receive a hearing screen before discharge. Existing loaner equipment consists of three (3) Otoacoustic Emissions (OAE) instruments and two (2) Automated Auditory Brainstem Response (AABR) hearing screeners.
- Revision of written guidelines for birthing hospitals based on the recommendations of the Joint Committee on Infant Hearing (JCIH) 2007.
- Provision of cultural competency materials and training for Part C, Early Intervention Service providers.
- Monitor usage of EHDI's website, www.arhealthyhearing.com, in English and Spanish, to determine benefits resulting from website enhancements. The website contains a numbering mechanism for counting "hits" to the website, as well as user-friendly information applicable to primary care physicians, audiologists, parents, and other stakeholders involved in the EHDI process.
- Exploration of recommendations resulting from a formal needs assessment conducted by the University of Arkansas at Little Rock, Institute of Government. The "Study of Outreach Activities Regarding Infants Lost-to-Follow-up in a Selected Number of Arkansas Counties", completed in November 2008, provided the Program with the unique perspective of stakeholder knowledge from this segment of participants regarding challenges and barriers.

- Collaboration with key stakeholders to identify themes, ideas, and barriers through the provision of five regional meetings across the state to solicit input from community leaders to include: parents, physicians, educators, early intervention providers, non-traditional EHDI hospital personnel (risk managers, social workers, etc.), and Community Health Centers.

Hospital Performances

Each birthing hospital designates a person to be responsible for its newborn hearing screening program to act as the point of contact between the facility and the Arkansas Early Hearing Detection and Intervention (EHDI) program. The hospital must ensure that all screening personnel are trained to carry out the newborn hearing screening using appropriate technology.

The hospitals disseminate brochures, provided by the EHDI program, and screening results to the parent prior to discharge, including locations at which audiological follow-up can be obtained by the parent of the newborn. Written results of the newborn screening or parent refusal of the hearing screen are provided by the hospital to the child's primary care physician. Hospitals have the option of faxing hearing screen results to the Arkansas EHDI program's secure (HIPAA compliant) fax machine or to forward them by mail no later than the fifteenth (15th) day of the month following the month in which the test was conducted.

Ideally, hospitals' referral rates (children who do not pass the hearing screen) are not expected to exceed 5%, although hospitals with referral rates as high as 5-10% are considered acceptable according to established guidelines. Over the course of the eight (8) years of EHDI existence, hospital referral rates show steady improvement toward the expected rate due to improved screening techniques.

Hospital Performances 2008

Table 1. Summary data reported by Arkansas's forty-four (44) Universal Newborn Hearing Screen (UNHS)* hospitals.

State Totals Jan 2008 - Dec 2008	Forms Received	Hearing Screens Performed Before Hospital Discharge	Parental Refusal of Screen	%
Total Births: 39,500	39,135	38,725	14	.035%

Hearing Screens Passed		Hearing Screens Referred	
	%		%
36,855	95.2%	1,870	4.8%

**UNHS hospitals, as defined by Act 1559 of 1999, are those having more than 50 births per calendar year.*

For detailed descriptions and explanations please refer to the following: pages 16 – 17.

Hospital Performance 2008

Table 2. Summary table for overall performance of Arkansas's 44 UNHS hospitals

Percentage of Newborn Hearing Screening Forms Received by the IHP (39,135) compared to Total Births (39,500)	→ 99%
Percentage of Infants Receiving Hearing Screens Prior to Hospital Discharge (38,725) compared to Total Forms Received (39,135)	→ 99%
Percentage of All Babies Born in Arkansas Receiving a Newborn Hearing Screen (38,822)	→ 98%

Figure 1. Percent distribution of screening methods used by UNHS hospitals 2008

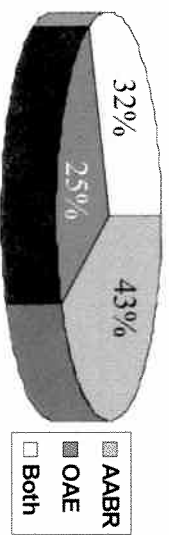


Table 3. Screening methods used by UNHS hospitals 2008

UNHS Hospital Screening Method	# of hospitals	% of hospitals
Hospitals - Otoacoustic Emissions (OAE) Method	11	25%
Hospitals - Automated Auditory Brainstem (AABR) Method	19	43%
Hospitals with OAE and AABR Methods	14	32%
Total Hospitals	44	100%

Post-Discharge Hearing Screen Analysis 2008

Hospitals with Post Discharge Hearing Screening Programs 30

Figure 2. Comparison of birthing hospitals with post-discharge hearing screens programs versus those without outpatient screening programs

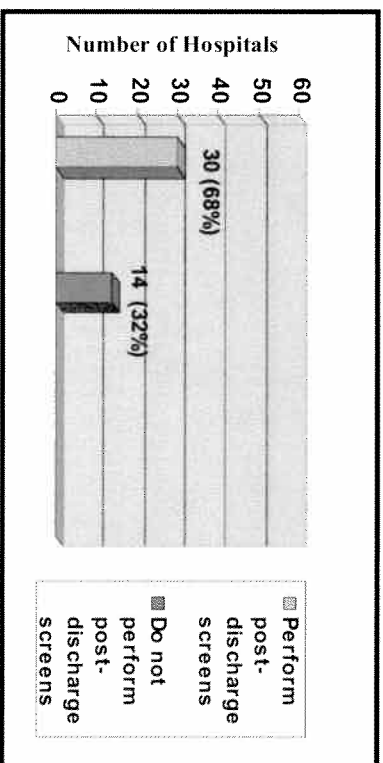


Table 4. Summary performance data for Arkansas's birthing hospitals and audiological sites that provides post-discharge hearing rescreens

# of Post-Discharge Rescreens Performed	% of Infants Returning for Post-Discharge Rescreens
1,178	63%*
# of Infants who Passed the Post-Discharge Rescreens	% of Infants who Passed the Post-Discharge Rescreens
1,044	89%*
# of Infants who Did Not Pass the Post-Discharge Rescreens	% of Infants who Did Not Pass the Post-Discharge Rescreens
134	11%

*Percentage based on number of infants that did not pass the Initial Screen (1,870) and the number of infants returning for a Post-Discharge Rescreen

* Note: Of the 1,870 infants who did not pass the initial screen, 69 received an audiological diagnostic evaluation rather than a post-discharge rescreen. The number contributed to an overall post-discharge return rate for 2008 of 65.5%.



Figure 3. Percent distribution of infants who passed post-discharge rescreens compared to those infants who did not pass

Diagnostic Information 2008

Figure 5 Infants/Children diagnosed with a unilateral (in one ear) or bilateral (in both ears) permanent hearing loss in 2008

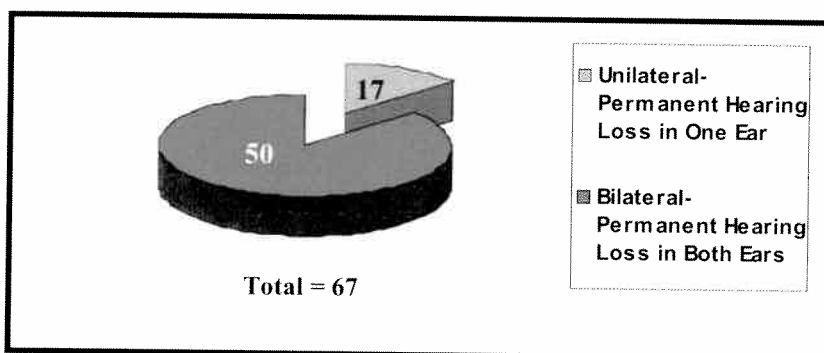


Figure 6 Number of diagnostic evaluations performed and type* of diagnostic outcomes

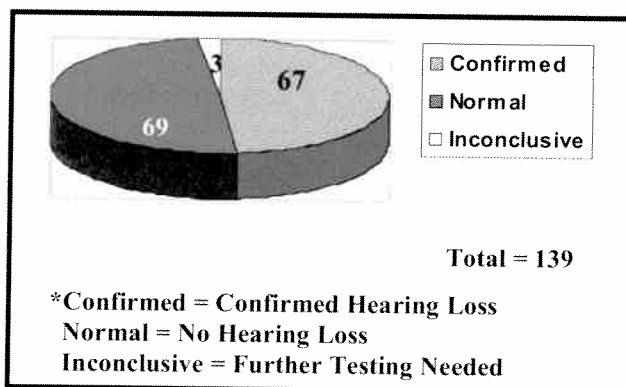
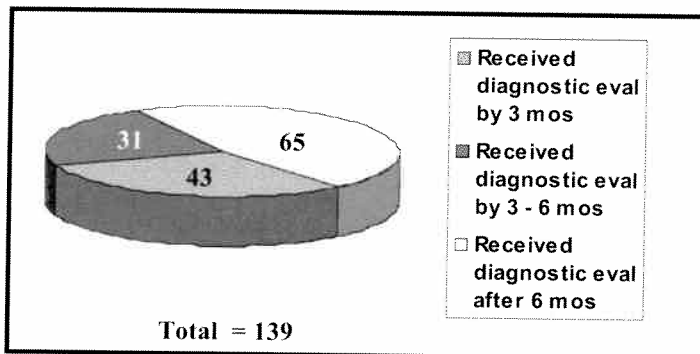


Figure 7 Numbers and ages of infants receiving diagnostic evaluations



Providers of Follow-up Infant Hearing Screening

Batesville

Batesville Surgery & Specialty Clinic, 501 Virginia Drive, S-A, Batesville, AR 72501
870-698-1846

Benton

Saline Audiological Associates, #5 Medical Park Dr., Suite 101, Benton, AR 72015
501-778-3868

Conway

Central Arkansas ENT Clinic, 2200 Ada Avenue, Suite 202, Conway, AR 72034
501-327-3929/800-419-3929

Ear, Nose, & Throat Center of Conway, 2425 Dave Ward Drive, S-101, Conway, AR 72034
800-304-5158/501-932-7600

Crossett

Audiology Resources
To make appointment please call 870-862-5339 (El Dorado number) or 800-628-6927

El Dorado

Audiology Resources, 530 West Faulkner, El Dorado, AR 71730
870-862-5339 or 800-628-6927

South Arkansas Audiology, 613 Thompson St., El Dorado, AR 71730
870-863-6995/800-531-3277

Fayetteville

Ear, Nose, & Throat Clinic, 4255 Venetian Lane, Fayetteville, AR 72703
479-521-1238

Fort Smith

AR Center for ENT & Allergy, 1500 Dodson Avenue, Fort Smith, AR 72901
479-709-7405

Center for Hearing, Ltd., 4300 Rogers Avenue, Suite 15, Fort Smith, AR 72903
479-785-3277

Cooper Clinic Audiology, 6801 Rogers Avenue, Fort Smith, AR 72903
479-478-3541

Forrest City

Memphis Hearing Aid and Audiological Services, 1501 Dawson Rd., Forrest City, AR 72335
870-270-9491 or 901-682-1529

Hope

Audiology Resources
To make appointment please call 870-862-5339 (El Dorado number) or 800-628-6927

Hot Springs

Tina Pullin, First Step, 407 Carson St., Hot Springs, AR 71901
501-624-6468

Jonesboro

Otolaryngology & Facial Surgery Center, 621 E. Matthews Ave., Jonesboro, AR 72401
870-932-6799

Little Rock

Arkansas Children's Hospital Audiology, 800 Marshall, Little Rock, AR 72202
501-364-4319

Arkansas Otolaryngology Center, 10201 Kanis Road, Little Rock, AR 72205
501-227-5050

Little Rock Audiology Services, 500 S. University, #405, Little Rock, AR 72205
501-664-5511

Magnolia

Audiology Resources
To make appointment please call 870-862-5339 (El Dorado number) or 800-628-6927

Mountain Home

Ear, Nose & Throat Associates, 626 Burnett Drive, Mt. Home, AR 72653
870-424-4200

Paragould

William Bulkley, M.D., P.A., 1000 W. Kingshighway, Suite 3, Paragould, AR 72450
870-240-8020

Pine Bluff

South Arkansas Hearing Services, 1408 West 43rd, Pine Bluff, AR 71603
870-535-3002

Rogers

NW Arkansas Ear, Nose & Throat Clinic, 5204 West Redbud, Rogers, AR 72758
479-636-0110

Searcy

Scott Ballinger, M.D., 1907 E. Beebe-Capps Expressway, Searcy, AR 72143
501-305-2251

Springdale

Ear, Nose, & Throat Center of the Ozarks, 601 W. Maple Avenue, Suite 213, Springdale, AR 72764
479-750-2080

West Memphis

Mark Clemons, M.D., 228 Tyler, Suite 100, West Memphis, AR 72301
870-732-3142

Memphis, TN

Baptist Memorial Hospital, 6025 Walnut Grove Road, Memphis, TN 38120
901-226-5682