

## Alabama Early Hearing Detection and Intervention (EHDI) Program

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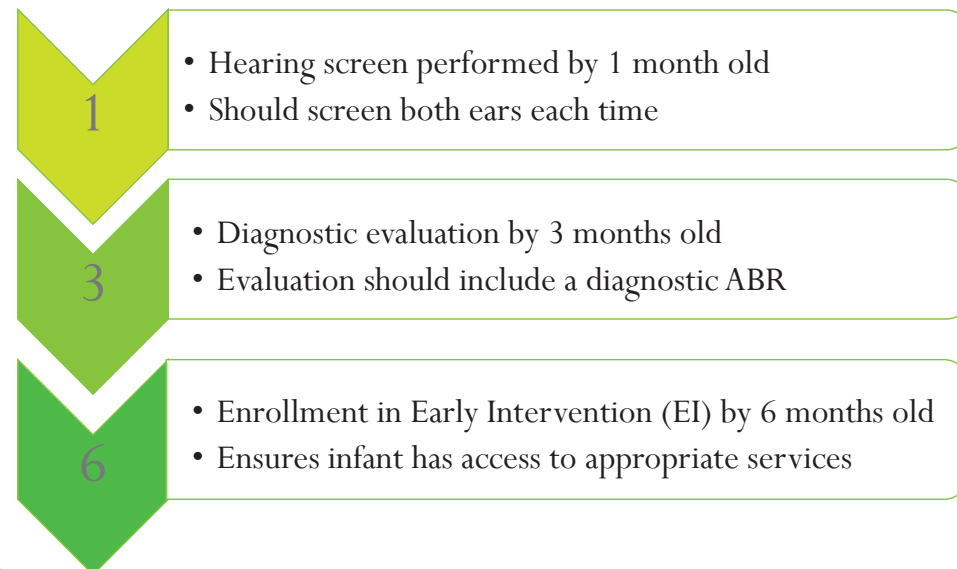
## History of Newborn Hearing Screening

- 2000 – Congress first authorized the Early Hearing Detection and Intervention (EHDI) programs
- 2001 – Alabama Department of Public Health established Universal Newborn Hearing Screening (UNHS) within the Newborn Screening Program
  - Hospitals began voluntary hearing screening
- 2008 – UNHS became mandated as part of newborn screening in Alabama

## Alabama's Newborn Hearing Screening

- Alabama's EHDI Program today
  - 100% grant funded
    - Health Resources and Services Administration (HRSA)
    - Centers for the Disease Control (CDC) and Prevention
  - Follows established guidelines and best practices
    - Joint Committee on Infant Hearing (JCIH)
      - 1-3-6
    - American Speech-Language-Hearing Association (ASHA)
      - Type, Degree, and Configuration of Hearing Loss

## Joint Committee on Infant Hearing (JCIH)



## American Speech-Language-Hearing Association (ASHA)

- Type of Hearing Loss
  - Conductive hearing loss
  - Sensorineural hearing loss (SNHL)
  - Mixed
- Degree of Hearing Loss
  - Seven classifications ranging from normal to profound
- Configuration of Hearing Loss
  - Defines degree and pattern of hearing loss across different frequencies

## Alabama EHDI Program

- 100% Automated Auditory Brainstem Response (AABR) capability
- 96% electronically upload hearing results
  - Links directly to newborn blood spot record
  - Reduces errors in reporting
  - Increases timeliness of follow-up testing and intervention

## Alabama EHDI Program

- Recent developments within EHDI program
  - Learning Communities
    - Will address the importance of family engagement within the EHDI system
    - Kick-off meeting May 10, 2018 in Mobile area
  - Hearing Advisory Work Group
    - Multidisciplinary group convened to create a more efficient and cohesive EHDI system
  - Partnering with family organizations
    - Currently identifying agencies to partner with for increased family engagement

## EHDI - Hospital Recommendations

- Initial hearing screen at 12 to 18 hours of age
- Maximum of 2 inpatient hearing screens
- Outpatient testing should be AABR, when needed
- Upload hearing results **every** day that a hearing screen is done
- Screen both ears each time
- Schedule outpatient testing prior to discharge, when needed, and notify parents of date, time, and place
- “Referral Physician” listed on blood spot form should be the medical provider who will care for infant after discharge
- Parents who refuse hearing screens should be educated on importance of infant hearing and sign refusal form

# EHDI - Audiologist Recommendations

- Complete outpatient hearing screens by 1 month of age
- Schedule diagnostic testing, when needed, by 3 months of age
- Refer infants with hearing loss to Early Intervention (EI) as soon as possible and by 6 months of age
- Educate families regarding hearing loss diagnosis and importance of early intervention, when applicable
- Report all screening and diagnostic results via fax using the form provided by the Alabama EHDI Program

# Screening Forms

- Let's Review

# Outpatient Reporting Forms

## Re-screen Newborn Hearing Results Form

ALABAMA NEWBORN HEARING PROGRAM  
PHONE 334.206.2944 FAX 334.206.3791  
Hearing re-screen should be completed before one month of age



## Diagnostic Hearing Evaluation Form

ALABAMA NEWBORN HEARING PROGRAM  
PHONE 334.206.2944 FAX 334.206.3791  
Diagnostic testing should be completed before three months of age



NEWBORN'S NAME		DATE OF BIRTH	
HOSPITAL OF BIRTH		HOSPITAL ID NUMBER	
MOTHER'S OR GUARDIAN'S NAME (as noted per hospital records)		HOME PHONE NUMBER	
HOME ADDRESS		PHYSICIAN PHONE NUMBER	
PRIMARY CARE PHYSICIAN		ADDRESS	
ADDRESS		TEST SITE	
BIRTH		HEARING SCREEN PERFORMED AT BIRTH FACILITY OR HOME BIRTH	
BEFORE 1 MONTH		REPEAT SCREENING RESULTS	

NEWBORN'S NAME		DATE OF BIRTH	
HOSPITAL OF BIRTH		HOSPITAL ID NUMBER	
MOTHER'S OR GUARDIAN'S NAME (as noted per hospital records)		HOME PHONE NUMBER	
HOME ADDRESS		PHYSICIAN PHONE NUMBER	
PRIMARY CARE PHYSICIAN		ADDRESS	
ADDRESS		TEST SITE	
BEFORE 3 MONTHS		DIAGNOSTIC TEST DATE	
BEFORE 6 MONTHS		ENROLLMENT IN EARLY INTERVENTION	

COMMENTS/FOLLOW-UP PLAN:  
The completed form should be returned as soon as the hearing re-screen/initial diagnostic audiological evaluation is completed. Fax to the Newborn Hearing Screening Program at 334-206-3791.  
\*If refer, infant should have diagnostic testing by three months of age per the Joint Committee on Infant Hearing.

COMMENTS/FOLLOW-UP PLAN:  
The completed form should be returned as soon as the hearing re-screen/initial diagnostic audiological evaluation is completed. Fax to the Newborn Hearing Screening Program at 334-206-3791.  
\*If refer, infant should have diagnostic testing by three months of age per the Joint Committee on Infant Hearing.

## Re-screen Newborn Hearing Results Form

ALABAMA NEWBORN HEARING PROGRAM  
PHONE 334.206.2944 FAX 334.206.3791  
Hearing re-screen should be completed before one month of age



NEWBORN'S NAME		DATE OF BIRTH	
HOSPITAL OF BIRTH		HOSPITAL ID NUMBER	
MOTHER'S OR GUARDIAN'S NAME (as noted per hospital records)		HOME PHONE NUMBER	
HOME ADDRESS		PHYSICIAN PHONE NUMBER	
PRIMARY CARE PHYSICIAN		ADDRESS	
ADDRESS		TEST SITE NAME	
BIRTH		HEARING SCREEN PERFORMED AT BIRTH FACILITY OR HOME BIRTH	
BEFORE 1 MONTH		REPEAT SCREENING RESULTS	

COMMENTS/FOLLOW-UP PLAN:  
The completed form should be returned as soon as the hearing re-screen/initial diagnostic audiological evaluation is completed. Fax to the Newborn Hearing Screening Program at 334-206-3791.  
\*If refer, infant should have diagnostic testing by three months of age per the Joint Committee on Infant Hearing.

# Hearing Screen Reporting Form

# Diagnostic Evaluation Reporting Form

**Diagnostic Hearing Evaluation Form**  
 ALABAMA NEWBORN HEARING PROGRAM  
 PHONE 334.206.2944 FAX 334.206.3791  
 Diagnostic testing should be completed before three months of age.

NEWBORN'S NAME: Baby Boy Doc DATE OF BIRTH: 3/30/2018  
 HOSPITAL OF BIRTH: Hospital HOSPITAL ID NUMBER: XXXX  
 MOTHER'S OR GUARDIAN'S NAME (as noted per hospital records): Jane Doc HOME PHONE NUMBER: 123-4567  
 ADDRESS: 123 Main Street Town, AL 12345

TEST SITE  
 Audiology Provider Name: Doctor XYZ Phone: 123-4567 Fax: 123-4567  
 Address: 123 Main Street

**Before 3 Months** Pediatric Diagnostic Audiology Evaluation  
 DIAGNOSTIC TEST DATE: 5/22/2018 Please select all that apply. **Both ears should be tested at each visit.**  
 Method:  ABR  AABR  OAE  TEOAE  DPOAE  
 Normal Hearing  
 Hearing Loss Confirmed (Please Complete Section Below)

**Before 6 Months** Enrollment in Early Intervention  
 Date of Referral to EI: 5/24/2018 Enrollment Date: \_\_\_\_\_  
 Medical Referral:  Otolaryngologist  Geneticist  Ophthalmologist  Pediatrician  
 Other (specify): \_\_\_\_\_  
 Additional Audiology Services: \_\_\_\_\_

UNILATERAL LOSS	RIGHT EAR	dB HL	SEVERITY/TYPE	Sensorineural	Conductive*	Mixed	Unspecified	Auditory Neuropathy
		16 to 25	Slight					
	26 to 40	Mild						
	41 to 55	Moderate			X			
	56 to 70	Moderately Severe						
	71 to 90	Severe						
	91+	Profound						
		Unknown Severity						
BILATERAL LOSS	LEFT EAR	dB HL	SEVERITY/TYPE	Sensorineural	Conductive*	Mixed	Unspecified	Auditory Neuropathy
		16 to 25	Slight					
	26 to 40	Mild			X			
	41 to 55	Moderate						
	56 to 70	Moderately Severe						
	71 to 90	Severe						
	91+	Profound						
		Unknown Severity						

\*Includes fluid in the middle ear, ear infections, poor eustachian tube function, hole in eardrum, earwax, swimmer's ear, foreign body in the ear canal, and malformation of the outer ear, ear canal, or middle ear per the American Speech-Language Hearing Association.  
 COMMENTS/FOLLOW UP (please add other descriptors associated with hearing loss):  
Scheduled follow up with ENT for head Type B tympan bilaterally.

The completed form should be returned as soon as the hearing re-screen/initial diagnostic audiological evaluation is completed. Fax to the Newborn Hearing Screening Program at 334-206-3791.  
 NBSHearing Diagnostic Reporting Form 2018

# Outpatient Reporting Forms - Reporting Issues

- Reported result for right ear only
  - Omitted left ear result in error?
  - Only re-screened right ear?
    - Both ears should be screened every time

<b>BIRTH</b>	HEARING SCREEN PERFORMED AT BIRTH FACILITY OR HOME BIRTH	Inpatient Screen Date: <u>3/31/2018</u> Right Ear: <input type="checkbox"/> Pass <input checked="" type="checkbox"/> Refer <input type="checkbox"/> Not Tested Left Ear: <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Refer <input type="checkbox"/> Not Tested Method: <input checked="" type="checkbox"/> ABR <input type="checkbox"/> OAE <input type="checkbox"/> TEOAE <input type="checkbox"/> DPOAE	Infants who fail initial OAE screen may have an OAE or AABR re-screen. Infants who fail initial AABR screen <b>must</b> have an AABR re-screen.
<b>BEFORE 1 MONTH</b>	REPEAT SCREENING RESULTS Inpatient <input type="checkbox"/> Outpatient <input checked="" type="checkbox"/>	DATE SCREENED: <u>4/12/2018</u> <b>Both ears should be tested even if only one ear did not pass the initial screen.</b> Right Ear: <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Refer <input type="checkbox"/> Not Tested Left Ear: <input type="checkbox"/> Pass <input type="checkbox"/> Refer <input type="checkbox"/> Not Tested Method: <input checked="" type="checkbox"/> ABR <input type="checkbox"/> OAE <input type="checkbox"/> TEOAE <input type="checkbox"/> DPOAE *Date referred for diagnostic evaluation: _____	RISK FACTORS FOR DELAYED HEARING LOSS: <u>none</u> <input type="checkbox"/> NICU admission <input type="checkbox"/> Received ototoxic medications <input type="checkbox"/> Transfused <input type="checkbox"/> Other If any risk factors present, refer for an audiology assessment by 24 to 30 months of age.

# Outpatient Reporting Forms - Reporting Issues

- Reported Otoacoustic Emissions (OAE) result after referred by AABR
  - An outpatient AABR should follow a referred inpatient AABR

<b>BIRTH</b>	HEARING SCREEN PERFORMED AT BIRTH FACILITY OR HOME BIRTH	Inpatient Screen Date: <u>3/31/2018</u> Right Ear: <input type="checkbox"/> Pass <input checked="" type="checkbox"/> Refer <input type="checkbox"/> Not Tested Left Ear: <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Refer <input type="checkbox"/> Not Tested Method: <input checked="" type="checkbox"/> ABR <input type="checkbox"/> OAE <input type="checkbox"/> TEOAE <input type="checkbox"/> DPOAE	Infants who fail initial OAE screen may have an OAE or AABR re-screen. Infants who fail initial AABR screen <b>must</b> have an AABR re-screen.
<b>BEFORE 1 MONTH</b>	REPEAT SCREENING RESULTS Inpatient <input type="checkbox"/> Outpatient <input checked="" type="checkbox"/>	DATE SCREENED: <u>4/12/2018</u> <b>Both ears should be tested even if only one ear did not pass the initial screen.</b> Right Ear: <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Refer <input type="checkbox"/> Not Tested Left Ear: <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Refer <input type="checkbox"/> Not Tested Method: <input type="checkbox"/> ABR <input type="checkbox"/> OAE <input type="checkbox"/> TEOAE <input checked="" type="checkbox"/> DPOAE *Date referred for diagnostic evaluation: _____	RISK FACTORS FOR DELAYED HEARING LOSS: <u>none</u> <input type="checkbox"/> NICU admission <input type="checkbox"/> Received ototoxic medications <input type="checkbox"/> Transfused <input type="checkbox"/> Other If any risk factors present, refer for an audiology assessment by 24 to 30 months of age.

# Outpatient Reporting Forms - Reporting Issues

- Repeat screening method is not marked
  - Mark all screening methods that apply
  - Method is needed to ensure JCIH guidelines are followed

<b>BIRTH</b>	HEARING SCREEN PERFORMED AT BIRTH FACILITY OR HOME BIRTH	Inpatient Screen Date: <u>3/31/2018</u> Right Ear: <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Refer <input type="checkbox"/> Not Tested Left Ear: <input type="checkbox"/> Pass <input checked="" type="checkbox"/> Refer <input type="checkbox"/> Not Tested Method: <input checked="" type="checkbox"/> ABR <input type="checkbox"/> OAE <input type="checkbox"/> TEOAE <input type="checkbox"/> DPOAE	Infants who fail initial OAE screen may have an OAE or AABR re-screen. Infants who fail initial AABR screen <b>must</b> have an AABR re-screen.
<b>BEFORE 1 MONTH</b>	REPEAT SCREENING RESULTS Inpatient <input type="checkbox"/> Outpatient <input checked="" type="checkbox"/>	DATE SCREENED: <u>4/12/2018</u> <b>Both ears should be tested even if only one ear did not pass the initial screen.</b> Right Ear: <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Refer <input type="checkbox"/> Not Tested Left Ear: <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Refer <input type="checkbox"/> Not Tested Method: <input type="checkbox"/> ABR <input type="checkbox"/> OAE <input type="checkbox"/> TEOAE <input type="checkbox"/> DPOAE *Date referred for diagnostic evaluation: _____	RISK FACTORS FOR DELAYED HEARING LOSS: <u>none</u> <input type="checkbox"/> NICU admission <input type="checkbox"/> Received ototoxic medications <input type="checkbox"/> Transfused <input type="checkbox"/> Other If any risk factors present, refer for an audiology assessment by 24 to 30 months of age.

## Outpatient Reporting Forms – Reporting Issues

- Overall lack of information
  - Left ear result?
  - Hearing loss confirmed?
  - Bilaterally or unilaterally?
  - Referral to EI or additional appointment scheduled?

Before 3 Months	Pediatric Diagnostic Audiology Evaluation	DIAGNOSTIC TEST DATE: 7/22/2018 Method: <input checked="" type="checkbox"/> ABR <input type="checkbox"/> AABR <input type="checkbox"/> OAE <input checked="" type="checkbox"/> TEOAE <input type="checkbox"/> DPOAE <input type="checkbox"/> Normal Hearing <input type="checkbox"/> Hearing Loss Confirmed (Please Complete Section Below)	Please select all that apply. <b>Both ears should be tested at each visit.</b>				
Before 6 Months	Enrollment in Early Intervention	Date of Referral to EI: _____ Enrollment Date: _____ Medical Referral: <input type="checkbox"/> Otolaryngologist <input type="checkbox"/> Geneticist <input type="checkbox"/> Ophthalmologist <input type="checkbox"/> Pediatrician <input type="checkbox"/> Other (specify): _____ Additional Audiology Services: _____					
UNILATERAL LOSS RIGHT EAR	dB HL	SEVERITY/TYPE	Sensorineural	Conductive*	Mixed	Unspecified	Auditory Neuropathy
	16 to 25	Slight					
	26 to 40	Mild					
	41 to 55	Moderate				<input checked="" type="checkbox"/>	
	56 to 70	Moderately Severe					
	71 to 90	Severe					
	91+	Profound					
Unknown Severity							
BILATERAL LOSS LEFT EAR	dB HL	SEVERITY/TYPE	Sensorineural	Conductive*	Mixed	Unspecified	Auditory Neuropathy
	16 to 25	Slight					
	26 to 40	Mild					
	41 to 55	Moderate					
	56 to 70	Moderately Severe					
	71 to 90	Severe					
	91+	Profound					
Unknown Severity							

\*Includes fluid in the middle ear, ear infection, poor eustachian tube function, hole in eardrum, ear wax, swimmer's ear, foreign body in the ear canal, and malformation of the outer ear, ear canal, or middle ear per the American Speech-Language Hearing Association.

COMMENTS/FOLLOW UP (please add other descriptors associated with hearing loss):  
\_\_\_\_\_  
\_\_\_\_\_

The completed form should be returned as soon as the hearing re-screen/initial diagnostic audiologic evaluation is completed. Fax to the Newborn Hearing Screening Program at 334-206-3791.  
NBS Hearing Diagnostic Reporting Form 2018

## EHDI - Clinician Recommendations

- Check hospital hearing screen result at initial office visit
  - If referred in one or both ears
    - Educate family on importance of repeat hearing screening
    - Ensure outpatient hearing screen scheduled by 1 month of age
    - Follow up on result of outpatient hearing screen
    - Report to Alabama EHDI Program on audiology form
  - If refused inpatient screen
    - Educate on importance of hearing screening
    - Schedule screening within 1 month of age, if parents agree
    - Have parent sign refusal form, if declines
  - If passed inpatient screen
    - Assess birth history for any risk factors that could contribute to late-onset hearing loss and refer accordingly

## EHDI – Care Coordination Recommendations

- Ensure all scheduled appointments follow JCIH timeline
  - 1 > Outpatient hearing screen by one month of age
  - 3 > Diagnostic evaluation by 3 months of age
  - 6 > Enrollment in Early Intervention (EI) by 6 months of age
- Ensure appropriate testing is completed
  - All hospitals have AABR capability
  - Outpatient AABR should follow an inpatient AABR
- Refer to EI as soon as possible and by 6 months of age
  - Educate family on EI referral and benefits of enrollment
- Provide all contact information for DHR follow up when an infant is placed in foster care

## EHDI – Reporting Recommendations

- When reporting results
  - Provide accurate and complete information
    - Ensure that the *birth* name is included
    - Verify that the date of birth is recorded accurately
    - Provide the most up-to-date contact information for the family
  - Accurate and complete information helps to ensure timely and efficient identification and intervention

## Alabama EHDI Program Role

- Gather data and correlate
- Manage and coordinate with providers on infants who refer initial screen
- Send letters to those who refer and have risk factors
- Educate on JCIH 1-3-6
- Refer infants to Early Intervention
- Manage website to provide families and providers with up-to-date information

## Alabama EHDI Mission Statement

- All babies born in Alabama will receive a hearing screen and results tracked to ensure early identification, treatment and intervention of infants with hearing loss.

## Questions?

Mary Ellen Whigham, EHDI Coordinator (334) 206-2944

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