

# EARS

## From Multiple Perspectives

**Julie Schulte**, EHDI Follow-up Coordinator

**Gayla Hutsell Guignard**, EHDI Program Director

**Lisa Kovacs**, Guide By Your Side Program Coordinator

**Valari Koziel**, EHDI Regional Audiology Consultant



Indiana State  
Department of Health

# Presentation Overview

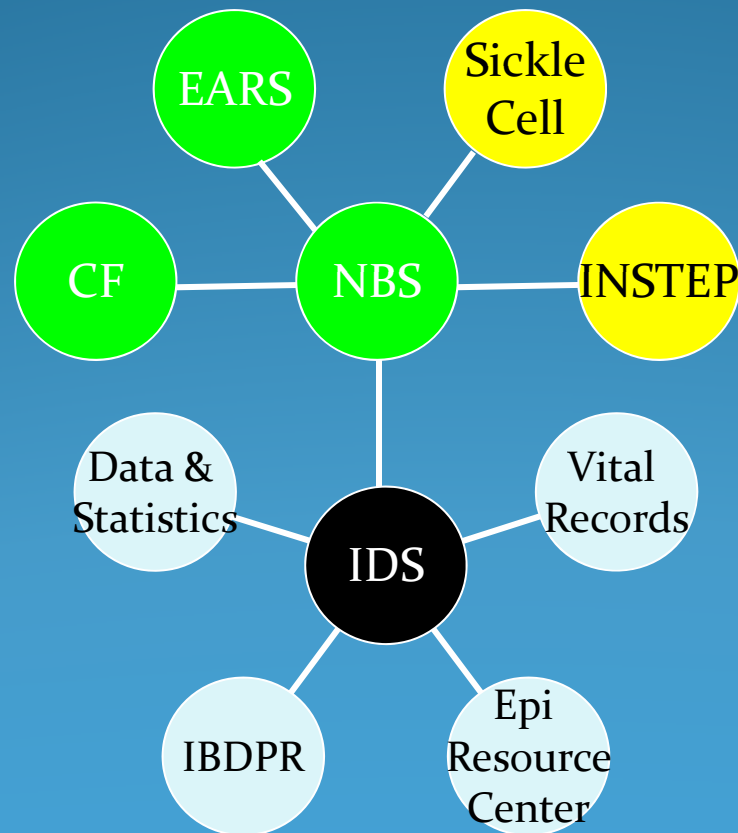
- What is EARS?
- Why was EARS created?
- Who uses EARS
  - Hospitals
  - EHDI Staff
  - Audiologists
  - Guide By Your Side
- Conclusions

# What is EARS?

EHDI Alert Response System

Web-based Data System

Integrated into the Integrated Data System (IDS)



# Why was it created?

To improve.....

- Follow-up on babies

  - Not screened

  - Not passing UNHS

  - At Risk for delayed onset of hearing loss

- Communication among

  - Hospital staff

  - EHDI staff

  - Audiologists

  - Guide By Your Side & Families

  - First Steps – System Points of Entry

- Data reporting capabilities

# Hospitals Report “Exceptions”

- Not Screened

- 1 Deceased
- 2 & 10 Transferred
- 3 Hospital Error
- 4 NICU
- 5 Unauthorized Refusal
- 6 Religious Objection
- 7 Equipment Problems
- 8 & 9 Screening Next Month

ID	Code	MRN	Go	Infant Name	DOB	Mother Name
36077	1	MRN, name, DOB, mother's info				
36104	2	MRN, name, DOB, mother's info				

Code	Direction	Location	Date
10	In From	University Hospital (IU MED CNTR)	11/11/2009 12:00:00 AM

ALL
  Transfers IN Only
  Transfers OUT only
  Most Recent

Internet | Protected Mode: On

- Some Exceptions are considered “Hold Overs”

PID & Name Male 10/27/2009 1 8

METHODIST HOSPITAL (Indianapolis) has reported: Code = 11(Passed) Screened =

PID & Name

METHODIST HOSPITAL (Indianapolis) has reported these UNHS results for this child:  
 Code=11 - Passed  
 screen date =12/13/2009 12:00:00 AM  
 Refer to =

# Hospitals Report “Exceptions”



- Babies with Screening Results

11 Transferred In and Passed UNHS

12 Passed UNHS but At Risk

13 Not Passing UNHS





14 Not Passing UNHS & At Risk

36083		11	Child's name, DOB, mother's info, home phone	ALLEN, JAYME	317-274-4715	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	1/8/2010
36078		12	Child's name, DOB, mother's info, home phone	ALLEN, JAYME	317-274-4715	<input type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input type="checkbox"/> D	1/20/2010
36089		13	Child's name, DOB, mother's info, home phone	ALLEN, JAYME	317-274-4715	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	1/14/2010



# EHDI Staff Receive Alerts

From different sources.....

Monthly Summary Report (MSR) from hospitals

	MSR	Did Not Pass - Child's Name
	MSR	Did Not Pass - Child's Name
	MSR	Passed At Risk - Child's Name
	MSR	Passed At Risk - Child's Name




Diagnostic Audiology Evaluation (DAE) forms

	DAE	Send Tool Kit - Child's Name
	DAE	DAE Follow-up Appt. Lapsed: Call Audiologist - Child's Name


# EHDI Staff Receive Alerts

From different sources.....

Letters, Phone Responses, Secured Email

	Letter Response	Delayed Alert: Letter Response Due Today - Child's Name
	PHONE	Phone Response Due - Child's Name
	EMAIL	Email Response Due - Child's Name

User Defined Alerts (UDA)

	UDA	Did not pass UNHS.
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# EHDI Staff Responds to Alerts

Review Child Health Information Profile (CHIP)

Demographics

File Status

Alerts

Responses

UNHS Results

DAE Data

Notes

**HOME** **EHDI - Child Health Information Profile**

**Name** Child's Name **PID** [Redacted]

**Gender** M **Race** UNKNOWN

**DOB** 09/01/2007 **Ethnicity** UNKNOWN **Death** N/A

**Birth Order** **Birth Facility** WILLIAM WISHARD MEMORIAL HOSPITAL **Gestational Age** 35

**Plurality** 1 **Birth Defects** No Confirmed Birth Defects **Transfused?**  Yes  No  NOS

[Edit Child Data](#)

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**Mother's Name** Mom's Name **Address** [Redacted] **Add**

**Phone** Home address and phone **MID** [Redacted]

[Edit Mother Data](#)

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**Father's Name** , **Address** **Phone**

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**PCP's Name** ENT CLINIC, RILEY **Address** , **Phone** 317-274-8615

[File](#) | [Outcomes](#) | [Responses](#) | [UNHS Data](#) | [DAE Data](#) | [Notes](#) | [New DAE](#) | [OLD UNHS](#)

**Alerts**

PRIORITY	SOURCE	MESSAGE	CREATED	DELAY TO	ASSIGNED TO	RESOLVED
	EMAIL	Email Response Due - Child's Name	2/11/2010	2/12/2010	Julie Schulte	
	DAE	Send Tool Kit, Close File - Child's Name	9/3/2009	9/3/2009	Molly Pope	9/3/2009 3:05:54 PM

# EHDI Staff Responds to Alerts

## In the Alert Response Center (ARC)

Source	Message
PHONE	Phone Response Due - Child's Name
<p data-bbox="779 1279 1864 1328"><input checked="" type="radio"/> Email    <input type="radio"/> Fax    <input type="radio"/> Phone    <input type="radio"/> Letters    <input type="radio"/> Finalize Case</p>	

# Audiologists & EARS

- Approximately 1/3 of pediatric audiologists have been trained to submit diagnostic audiology evaluation (DAE) forms electronically
- Additional trainings scheduled for March & April
- Accounts must be reviewed and verified by EHDI staff before access to EARS is granted – security code and registration key are provided by EHDI staff

## Diagnostic Audiologic Evaluation (DAE) Results

**Initial Report**

**Follow-Up Report**

If child has been seen previously at the facility and a DAE was submitted, choosing “Follow-up Report” will pre-populate demographic information

# Audiologists & EARS

## Demographic Information

<b>Child's</b>	
<b>Office ID (MRN)</b>	5465754
<b>Last Name</b>	smith
<b>Birth Date</b>	02/11/2010
<b>Birthing Facility</b>	ST. VINCENT WOMEN'S HOSPITAL
<b>UNHS Results</b>	<input type="radio"/> Pass <input checked="" type="radio"/> Did Not Pass <input type="radio"/> Unknown
<b>First Name</b>	john
<b>Gender</b>	<input checked="" type="radio"/> M <input type="radio"/> F
<b>Birth Mother's</b>	
<b>Last Name</b>	smith
<b>Address</b>	1234 sunny way
<b>City/State/Zip</b>	indianapolis IN 46260
<b>First Name</b>	julie
<b>Phone</b>	(317) 999 - 9999
<b>Email</b>	

## PCP Information & Evaluation Date

<b>Primary Care Physician for (smith, john):</b>	
<input type="radio"/>	AMES, TIMOTHY
<b>Date:</b>	02/12/2010
<b>Audiologic Evaluation</b>	02/12/2010

# Audiologists & EARS

## Risk Factors

Case History/Risk Factors:  Yes  No

(check all that apply)

<input type="checkbox"/> Family History of Permanent Childhood Hearing Loss	<input type="checkbox"/> Mechanical Ventilation
<input type="checkbox"/> Craniofacial Anomalies	<input type="checkbox"/> CMV
<input type="checkbox"/> Bacterial Meningitis	<input type="checkbox"/> in utero infection
<input type="checkbox"/> Parental Concern	<input type="checkbox"/> Rubella
<input type="checkbox"/> Special Care/NICU (greater than 5 days)	<input type="checkbox"/> Herpes
<input checked="" type="checkbox"/> Hyperbilirubinemia requiring exchange transfusion	<input type="checkbox"/> Toxoplasmosis
<input type="checkbox"/> Ototoxic Medications	<input type="checkbox"/> Other <input type="text"/>
<input type="checkbox"/> Genetic Syndromes associated with hearing loss <input type="text"/>	<input type="checkbox"/> Syphilis
<input type="checkbox"/> ECMO	

# Audiologists & EARS

## Methods of Evaluation:

(check all that apply)

<input checked="" type="checkbox"/> Click ABR	<input checked="" type="checkbox"/> Toneburst ABR	<input checked="" type="checkbox"/> Bone Conduction ABR	<input type="checkbox"/> Screening ABR	<input type="checkbox"/> ASSR
<input type="checkbox"/> TEOAE	<input type="checkbox"/> BOA	<input type="checkbox"/> VRA	<input type="checkbox"/> CPA	<input checked="" type="checkbox"/> DPOAE
<input type="checkbox"/> MEMR	<input checked="" type="checkbox"/> High Frequency Tympanometry	<input type="checkbox"/> Tympanometry (220/226)	<input type="checkbox"/> Soundfield	<input type="checkbox"/> Conventional

Ear:	Type
Left:	--Select One--
Right:	--Select One--
	Normal
	Temporary Conductive Loss (Pending)
	Permanent Conductive Loss (Congenital Anomaly)
	Mixed Loss
Recommendations/	Sensorineural Loss
	Auditory Neuropathy
with PCP:	Undetermined

Degree
--Select One--
--Select One--
Normal (0-20 dB HL)
Mild(21-40 dB HL)
Moderate(41-55 dB HL)
Moderate-Severe(56-70 dB HL)
Severe(71-90 dB HL)
Profound (90+ dB HL)
Undetermined

# Audiologists & EARS

## Additional Recommendations/Resources:

Medical Follow-up with PCP:	<input checked="" type="radio"/> Yes <input type="radio"/> No	Enrolled in First Steps: <input checked="" type="radio"/> Yes <input type="radio"/> No	Referred to First Steps? <input type="radio"/> Yes <input checked="" type="radio"/> No
Medical Follow-up with ENT:	<input checked="" type="radio"/> Yes <input type="radio"/> No	ENT Provider: <input type="text"/>	
Referral for Genetics:	<input checked="" type="radio"/> Yes <input type="radio"/> No	Genetics Provider: <input type="text"/>	
<input type="checkbox"/> Referral for Vision Screening/Evaluation		<input type="checkbox"/> Other Devices <input type="text"/>	<input type="checkbox"/> Other EI Services <input type="text"/>
<input type="checkbox"/> Communication Assessment (Spoken/Visual)		<input type="checkbox"/> Family Resource Guide	<input type="checkbox"/> Audiologic Monitoring in <input type="text"/> months?
<input type="checkbox"/> Hearing Aid(s)		<input type="checkbox"/> SKI*HI Parent Advisor/Family Education	<input checked="" type="checkbox"/> Audiologic Monitoring in <input type="text"/> 4 weeks?
<input type="checkbox"/> Cochlear Implant (s)			
Scheduled Follow-up Date: <input type="text"/> <input style="font-size: 0.8em; vertical-align: middle;" type="button" value="?"/>			

## Results Communicated to:

<input checked="" type="checkbox"/> ISDH	<input checked="" type="checkbox"/> First Steps	<input checked="" type="checkbox"/> PCP	<input checked="" type="checkbox"/> ENT	<input checked="" type="checkbox"/> Parent/Family	<input type="checkbox"/> Other( <input type="text"/> )
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# Guide By Your Side

## GBYS Background

- GBYS began matching families in September, 2009
- GBYS Parent Coordinator works within the EHDI Program
- 12 Parent Guides across the state of Indiana
- To date 30 families have been matched with a Parent Guide








## EHDI & GBYS Process

- DAE form submitted electronically or via paper
- EHDI Audiologist
  - Reviews DAE and confirms diagnosis
  - Batches letter for Parent Tool Kit
  - Assigns a new alert for the GBYS Parent Coordinator to call family
- GBYS Parent Coordinator contacts family and offers GBYS
  - If family agrees, the family is matched
  - 6 Visits – at least one in person –frequency & location to be determined by family



# GBYS & EARS

## EHDI Long-term Follow-up (ELF) Form

<b>Name of Informant:</b>	
<b>Role of Informant:</b>	--Select-- ▾
<b>Last Updated:</b>	
<b>Last Updated By:</b>	
<b>Brief EHDI explanation provided?</b>	<input type="radio"/> Yes <input type="radio"/> No
<b>Guide by Your Side</b>	
<b>First contact:</b>	<input type="text"/> 
<b>Participating:</b>	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown
<b>Enrolled:</b>	<input type="text"/> 
<b>First Visit:</b>	<input type="text"/> 
<b>Completed:</b>	<input type="text"/> 
<b>Enrolled in First Steps?</b>	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown
<b>Date Enrolled in FS (use approximate if specific date is unknown):</b>	<input type="text"/> 
<b>ED Team Eval</b>	
<b>Scheduled:</b>	<input type="text"/> 
<b>Occurred:</b>	<input type="text"/> 
<b>Signed Reciprocal Release:</b>	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown
<b>Technology Used:</b>	<input type="checkbox"/> Hearing Aid <input type="checkbox"/> Cochlear Implant <input type="checkbox"/> FM System <input type="checkbox"/> Other (specify in comments)
<b>Fitting of amplification:</b>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure about pursuing <input type="radio"/> Not Yet Received <input type="radio"/> Left Ear <input type="radio"/> Right Ear <input type="radio"/> Both <input type="radio"/> Loaner <input type="radio"/> Personal

# GBYS & EARS

## EHDI Long-term Follow-up (ELF) Form

SPOE		--Select--
EI Services Received:		<input type="checkbox"/> Audiology <input type="checkbox"/> Speech/Language/Hearing Therapy (First Steps) <input type="checkbox"/> Speech/Language/Hearing Therapy (Private) <input type="checkbox"/> Developmental Therapy (First Steps) <input type="checkbox"/> Deaf/HOH Parent-Infant Program (State) <input type="checkbox"/> Deaf/HOH Parent-Infant Program (private) <input type="checkbox"/> SKI*HI Program <input type="checkbox"/> Occupational Therapy (First Steps) <input type="checkbox"/> Occupational Therapy (private) <input type="checkbox"/> Physical Therapy (First Steps) <input type="checkbox"/> Physical Therapy (private) <input type="checkbox"/> Other
EI Service Frequency (#/period):		0 / --Select--
Enrolled in NECAP NECAP Reports Other Diagnosis/Health	Genetic Eval and Counseling:	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown <input type="radio"/> Recommended
	ENT Eval:	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown <input type="radio"/> Recommended
	Vision Eval:	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown <input type="radio"/> Recommended
	Primary Household Language:	<input type="radio"/> English <input type="radio"/> Spanish <input type="radio"/> ASL <input type="radio"/> Other (Specify in Comments)
	Mother Hearing Status:	<input type="radio"/> normal <input type="radio"/> Hard of Hearing <input type="radio"/> Deaf
	Father Hearing Status:	<input type="radio"/> normal <input type="radio"/> Hard of Hearing <input type="radio"/> Deaf
	Child's Primary Communication Methodology:	--Select--
	Connection with Family Support Organization:	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown <input type="radio"/> Recommended
	If yes, please specify:	<input type="text"/>
	Children with Special Healthcare Services info. Received:	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown <input type="radio"/> NA
	Parent Toolkit Received:	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Unknown
	Religious Waiver Received Date:	<input type="text"/>
	Child Moved Out of State:	State moved to <input type="text"/> Date state notified by ISDH <input type="text"/>

# (H)EARS Challenges

- Matching incoming data – Vital Records, NBS, EHDI, etc.
- Managing the high number of alerts – but can triage among staff
- Reporting mechanism for EHDI staff not yet completed
- Training hospital and audiology staff to enter all appropriate information (i.e., PCP not attending physician, phone # for families)

# (H)EARS the Successes

- Improved accuracy and reporting (direct data entry)
- Increased timeliness of data sharing, contacting families, PCPs, audiologists, etc. through direct data entry and alerts
- Reduced loss to follow-up and documentation of children
- Easy to access, paperless, “active” system that “works” for the user
- Improved documentation of follow-up activities through ELF form, responses, and notes sections
- Foundation for other Newborn Screening applications

# (H)EARS the Real Conclusion



# For More Information....

Julie R. Schulte, MA, CCC-A

888-815-0006 (Toll Free)

317-233-1264 (Phone)

317-234-2995 (Fax)

[Juschulte@isdh.in.gov](mailto:Juschulte@isdh.in.gov)

[www.hearing.in.gov](http://www.hearing.in.gov)