

# **Integrated Data Systems: Successes & Challenges in the Indiana EHDI Program**

**Gayla Hutsell Guignard, EHDI Program Director  
Julie Schulte, EHDI Follow-up Coordinator**

# Presentation Overview



# Presentation Overview

- **EARS**
  - **Day-to-day use**
  - **Data items reported**
  - **Reports**
- **Successes/Benefits**
- **Challenges**
- **Next Steps**
- **Discussion**

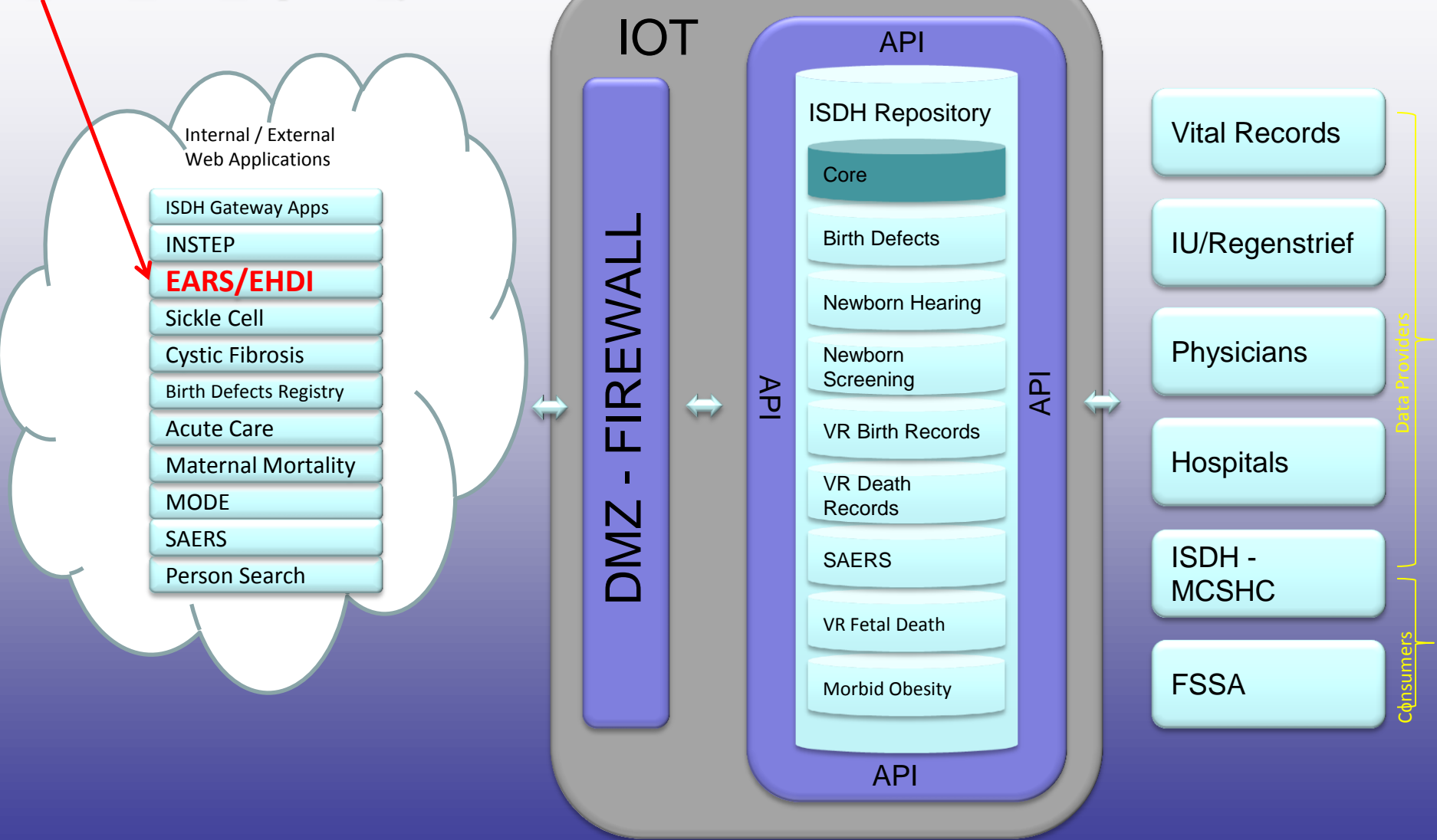


# What is EARS?

**EHDI Alert Response System**

# What is EARS?

## EHDI Alert Response System



# Why was it created?

**To improve.....**

**Follow-up on babies**

**Not screened**

**Not passing UNHS**

**At Risk for delayed onset of hearing loss**

**Diagnosed with 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”

## Exception Codes

<b>Not Screened Due To:</b>			
1. Deceased/Terminal	2. Transferred Out	3. Hospital Error	4. NICU
5. Unauthorized Refusal	6. Religious Refusal	7. Equipment Failure	8. Initial Screen Next Month
9. Rescreen Next Month			
<b>New Patient Intake:</b>	<b>Pass UNHS:</b> (previously reported as not screened or transferred IN)	<b>Did Not Pass UNHS:</b> (complete Refer To section)	
10. Transferred IN	11. Passed	12. Passed At Risk	13. Did Not Pass
			14. Did Not Pass At Risk
<b>Use the following values to define to whom the child was referred, check all that apply.</b>			
A. First Steps	B. Primary Care Physician	C. Audiologist	D. Ear, Nose & Throat Physician

## Children who did not receive hearing screening....

**Deceased**


**NICU**

**Hospital Error**

	PID	Child's Name	DOB	Mothers Name	317-555-1212	ALLEN, JAYME	317-274-4715
1							
4							
3						BYRN, ROBERT	765-289-2353

# Hospital Report “Exceptions”

Children who did not pass UNHS or have risk factors....

	Code	MRN <input type="text" value="MRN"/> <a href="#">Go</a>	Infant Name	DOB	Mother Name	Mother Phone	Physician Name	Physician Phone
	13	<input type="text" value="MRN"/>	<input type="text" value="Child's Name"/>	7/18/2010	<input type="text" value="Mother's Name"/>	<input type="text" value="Phone #"/>	HAVEN, ROBERT	765-386-7301

Some exceptions are considered “Hold-overs”

PID	<input type="text" value="Rabbits, Chase"/>	Male	5/21/2010	1	9	<input type="text"/>	<input type="radio"/> Out (code 2) <input type="radio"/> In (code 10)	Trans. Date <input type="text"/>	<input type="text" value="Select Facility"/>
PID	<input type="text" value="5 Walling, Dry"/>	Male	7/3/2010	1	4	<input type="text"/>	<input type="radio"/> Out (code 2) <input type="radio"/> In (code 10)	Trans. Date <input type="text"/>	<input type="text" value="Select Facility"/>

Indiana Hospital  
has reported: Code = 4(NICU) Screened = N/A Refer to = N/A Transfer History



# EHDI Staff Receive Alerts



## Children who did not receive hearing screening....

Priority	Source	Message
	MSR	Hospital Error - Child's Name
	MSR	Hospital Error - Child's Name
	MSR	Religious Refusal - Child's Name
	MSR	Religious Refusal - Child's Name

## Children who did not pass UNHS or have risk factors....


	MSR	Did Not Pass - Child's Name
	MSR	Did Not Pass At Risk - Child's Name (Exception Update)

## Children who are diagnosed with hearing loss....


	DAE	Send Tool Kit - Child's Name
	DAE	Send Tool Kit - Child's Name

# EHDI Staff Receive Alerts

## Additional Follow-up...

	<b>EMAIL</b>	Email Response by	Child's Name
	<b>EMAIL</b>	Email Response Due	Child's Name
	<b>DAE</b>	DAE Follow-up Appt. Lapsed: Call Audiologist	Child's Name
	<b>Letter Response</b>	Delayed Alert: Letter Response Due Today	Child's Name

## Clerical Staff Assistance ...

	<b>BATCH</b>	Batched Letters Are Ready For Printing.
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# EHDI Staff Processes Alerts

## Review of Child Health Profile (CHIP)

Demographics

File Status

Alerts

Responses

UNHS Results

GBYS Data

DAE Data

Notes

**HOME** EHDI - Child Health Information Profile

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<b>Name</b>	RABBITS, CHASE BENNETT	<b>Race</b>	BLACK OR AFRICAN AMERICAN	<b>PID</b>	
<b>Gender</b>	M	<b>Ethnicity</b>	NON-HISPANIC, FILIPINO, PORTUGUESE	<b>MRN</b>	
<b>DOB</b>	05/12/2010	<b>Birth Facility</b>	COMMUNITY HOSPITAL MUNSTER	<b>Death</b>	N/A
<b>Birth Order</b>	1	<b>Birth Defects</b>	<input type="text" value="No Confirmed Birth Defects"/>	<b>Gestational Age</b>	25
<b>Plurality</b>	1			<b>Transfused?</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NOS

[Edit Child Data](#)

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<b>Mother's Name</b>	RABBITS, MAMA	<b>Address</b>	<input type="text" value="1234 SUNNY WAY, INDIANAPOLIS, IN 46268, County:LAKE"/>	<b>Add</b>	
<b>Edit Mother Data</b>		<b>Phone</b>	317-555-1212	<b>MID</b>	3363578

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<b>Father's Name</b>	Rabbits, DADA	<b>Address</b>		<b>Phone</b>	
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<b>PCP's Name</b>	<input type="text" value="GOOD, DOCTOR"/>	<b>Address</b>	1234 DOCTOR DRIVE, INDIANAPOLIS IN 46268	<b>Phone</b>	317-555-1212
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[File](#) | [Outcomes](#) | [Responses](#) | [UNHS Data](#) | [DAE Data](#) | [Notes](#) | [New DAE](#) | [OLD UNHS](#)

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**Alerts**


PRIORITY	SOURCE	MESSAGE	CREATED	DELAY TO	ASSIGNED TO	RESOLVED
✘	MSR	Did Not Pass At Risk - <span style="background-color: #e0ffe0; padding: 2px;">Child's Name</span>	7/29/2010	7/29/2010	Laura Gutwein	

# Diagnostic Audiology Evaluation

## 2010 DAE Data

- 2,501 DAEs submitted
- 2,250 individual children
- 107 audiologists
- 81.5% submitted electronically

Printed 2/1/2011 3:01:07 PM by jschulte for PID #5099884

 <b>DIAGNOSTIC AUIGIOLOGY EVALUATION (DAE)</b> State Form 53233 (R/05-09) Indiana's Early Hearing Detection and Intervention (EHDI) Program <small>Document generated by EARS. Question? Contact the EHDI Program at 888-815-0006.</small>			
<b>Patient Information:</b>		Office ID	47676
Child's Last Name	RABBIT	Child's First Name	ROGER
Date of Birth (month/day/year)	03/10/2010	Child's Gender	Male
Birthing Facility	ADAMS MEMORIAL HOSPITAL	UNHS Results	Did Not Pass
Birth Mother's Last Name	RABBIT	Birth Mother's First Name	ROBERTA
Mother's Current Address	1234 HOPPY LANE CARMEL, IN 46032	Mother's Phone Number	(317) 564-5654
		Mother's Email	RRABBIT@YAHOO.COM
Primary Care Physician (PCP) Name	DOCTOR GOOD	PCP Current Address & Phone Number	1234 DOCTOR DRIVE INDIANAPOLIS, IN 46268 (317)555-1212
<b>Date of Evaluation:</b> 04/01/2010 (Initial Report)			
Audiologist	JULIE SCHULTE	Email	JUSCHULTE@ISDH.IN.GOV
Clinic Name & Current Address (Street, City, State, & Zip)		Phone Number	(317)233-1264
INDIANA STATE DEPARTMENT OF HEALTH 2 N MERIDIAN ST INDIANAPOLIS, IN 46204			
<b>Case History:</b>			
Family History of Permanent Childhood Hearing Loss			
<b>Methods of Evaluation:</b>			
Click ABR, Toneburst ABR, Bone Conduction ABR, DPOAE, High Frequency Tympanometry			
<b>Audiologic Results:</b>			
Left Ear Type	Left Ear Degree	Right Ear Type	Right Ear Degree
Sensorineural Loss	Moderate(41-55 dB HL)	Sensorineural Loss	Moderate(41-55 dB HL)
Comments: Medical clearance with ENT on 4/1/10 and hearing aid fitting after.			
<b>Additional Recommendations / Resources:</b>			
PCP: DOCTOR GOOD (317)555-1212	Referred to First Steps, Hearing Aid(s), SKI*HI Parent Advisor/Family Education, Guide By Your Side		
	Audiological Monitoring: in [ 2 ] weeks?		
<b>Results Communicated to:</b> PCP, ENT, Parent/Family, First Steps			

# Short-term Follow-up Guide By Your Side Outcomes Form in EARS

- Parent Program Coordinator sits within the EHDI program
- 12 Parent Guides located across the state
- Provides up to 6 visits
  - First visit in person
  - Remaining meetings at location and frequency requested

Primary Household Language:	<input type="text" value="English"/>		
Mother Hearing Status:	<input type="text" value="--Select--"/>	<input type="radio"/> Deaf	Father Hearing Status:
Other State Identifier :	<input type="text" value="English"/>		<input checked="" type="radio"/> Normal <input type="radio"/> Hard of hearing <input type="radio"/> Deaf
Follow-up Outcomes	<input type="text" value="Spanish"/>		
	<input type="text" value="ASL"/>		
	<input type="text" value="Other (Specify in comments)"/>		
			<input type="button" value="SAVE DATA"/>
Other Diagnosis/Health Condition	<input type="text" value="None"/>		

# Guide By Your Side

## Outcomes Form in EARS

**Technology**

**Hearing Aid**  Yes  No  Unknown

**FM System**  Yes  No  Unknown

---

**Hearing Aid**

**Type**  Loaner  Personal

**Place of use** Both Home and School

**Date fitted:** --Select--

**Laterality:** Both Home and School

---

**FM System: Place of use** --Select--

**Cochlear Implant**  Yes  No  Unknown

**Other**  (Specify in comments)

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**Cochlear Implant**

**Date of Activation:**

**Date of CI Surgery:**

**Place of Use** --Select--

**Laterality:** --Select--

Left  
Right  
Both  
Unknown

**Early Intervention**

**ED Team Evaluation**

**Scheduled:**

**Enrolled in Part C services :**  Yes  No  Referred  Unknown

**Non-Part C services :**  Yes  No  Unknown

**Enrolled in Part B services :**  Yes  No  Unknown

**Location of intervention Services :** --Select--

**EI Services Received :**

Audiology  Speech/Language/Hearing Therapy (First Steps)  Speech/Language/Hearing Therapy (Private)  Deaf/HOH Parent-Infant Program (State)  Deaf/HOH Parent-Infant Program (private)  SKI\*HI Program  Occupational Therapy (private)  Physical Therapy (First Steps)  Physical Therapy (private)  Other

**Occurred:** 11/01/2010

**SPOE** CLUSTER B

**Date of IFSP :** 11/12/2010

**Enrolled in Non-Part B services :**  Yes  No  Unknown

**Child's Primary Communication Methodology:** --Select--

--Select--  
Listening and Spoken Lanhuage(only)  
Cued Speech / Language  
Total Communication  
American Sign Language  
Unknown  
Other

# Guide By Your Side Outcomes Form in EARS

**Referrals**

**Connection with Family Support Organization:**  Yes  No  Unknown  Recommended

**Genetic Eval and Counseling:**  Yes  No  Unknown  Recommended

**ENT Eval:**  Yes  No  Unknown  Recommended

**Vision Eval:**  Yes  No  Unknown  Recommended

**Other Provider or Service:**  Yes  No  Unknown  Recommended

**Please specify Other Service/provider :**

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**Children with Special Healthcare Services info. Received:**  Yes  No  Unknown  NA

**Parent Toolkit Received:**  Yes  No  Unknown

**If yes, please specify:**

**Received Genetic Eval/Counseling :**  Yes  No  Unknown

**Received ENT Eval:**  Yes  No  Unknown

**Received Vision Eval :**  Yes  No  Unknown

**Received Other services :**  Yes  No  Unknown

**How was child referred to GBYS:**

**Specify Other**

**Guide by Your Side**

**First contact:**

**Enrolled:**

**Completed:**


**Parent Guide**

**Child Moved Out of State:** State moved to

**Name of Informant:**


**Last Updated:**

**Participating:**  Yes  No, but PC follow-up  Declined Follow-up

**First Visit:**  

**Visits**

**Signed Release Onfile**  Yes  No  Refused

**Date state notified by ISDH**  

**Role of Informant:**

**Last Updated By:**

# Other EARS Features

## Secured Email

Print	PID	Received	From	Subject	Message Preview	Reply To
 	5042647	2/2/2011	Julie Schulte	ISDH EHDI Follow-up	Please follow-up on the child below. If you hav	juschulte@isdh.in.gov

-----ISDH USE Please Do Not Remove -----

Mother Name: MAMA DENISE RABBITS  
 Address: 1234 SUNNY WAY, INDIANAPOLIS, IN 46268  
 Child Name: CHASE BENNETT RABBITS  
 Child DOB: 05/12/2010  
 Child Sex: Male  
 Phone: (317) 555-1212  
 County:  
 PID: 5042647  
 Alert Id =42285

Upload an attachment:

[Show my previous documents.](#)

**Attachments:**  
 0 file(s) attached.



# Other EARS Features Reports

## Alert Processing

Source	Priority	Created	Alert Message	Resolved	Resolved
dae	high priority	11/9/10	dae follow-up appt. lapsed: call audiologist -	12/1/10	** passed dae **
uda	high priority	12/2/10	batch letters	12/2/10	f/up letter: 85 oos did
nodelay	high priority	12/2/10	finalize case -	12/2/10	f/up letter: 85 oos did
letter	high priority	12/2/10	delayed alert: letter response due today -	12/2/10	ehdi file finalized

## MSR Submissions

Reporting Period	Opened	Closed	Late	Contact on file	Created By	Closed By
12 2010	11/10/2010	01/05/2011	No	MSR Contact	MSR Contact	MSR Contact
11 2010	10/08/2010	12/03/2010	No	MSR Contact	MSR Contact	MSR Contact
10 2010	09/02/2010	11/10/2010	No	MSR Contact	MSR Contact	MSR Contact
9 2010	08/04/2010	10/08/2010	No	MSR Contact	MSR Contact	MSR Contact
8 2010	07/01/2010	09/02/2010	No	MSR Contact	MSR Contact	MSR Contact

**Additional reports completed by NBS IT support staff in a timely manner**



# Benefits

## EARS & Integration

- **For hospitals**

- Only enter “exceptions” on the MSR
- If child is already known, fields will be pre-populated
- Easy tracking of sick babies (transferred and NICU) through Hold-over list

- **Audiologists**

- If child is already known, fields will be pre-populated
- Enables EHDI to assist in timely manner with families who do not return

# Benefits

## EARS & Integration

- **EHDI Staff**
  - **Reduced data entry**
  - **Increased contact with families and professionals**
  - **Access to IBDPR reported conditions**
  - **Automatic notification of deceased children**
  - **Automatic update of adopted children**
  - **Access to other contact information if names or addresses have changed**
  - **Improved timeliness of follow-up procedures**
  - **Improved data reporting accuracy and capability**

# Challenges

## EARS & Integration

- **Security**
- **Managing of account creation**
- **Matching data from different sources**
  - **Current match rate about 85% after adding additional fields in March 2010**
- **Identifying & merging of duplicate files**
- **Multiple births**
- **“Ownership” of specific data fields**
- **“Place in line” when changes are needed**



# Next Steps

- **Additional “canned” and ad hoc reports**
- **Improved matching by including blood spot “K-number” to optional MSR fields**
- **Additional data item collection as part of the iEHDI contract**
- **GBYS Parent Guide access to EARS**
- **PCP access to newborn screening data**



# Discussion...

# Contact Us

**Gayla Hutsell Guignard**

**317-234-3358**

**[ghutsell@isdh.in.gov](mailto:ghutsell@isdh.in.gov)**

**Julie Schulte**

**317-233-1264**

**[juschulte@isdh.in.gov](mailto:juschulte@isdh.in.gov)**

**Website**

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

**Toll Free**

**888-815-0006**



***Early Hearing Detection & Intervention Program***