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Data Analyst for ISDH



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Technology

The Web-Based *EHDI* Datamart

Managing Data – Optimizing Outcomes

- ❖ Data Integration
- ❖ Process Improvement
- ❖ Workflow Management

❖ Data Integration

The Problem...



The Solution...

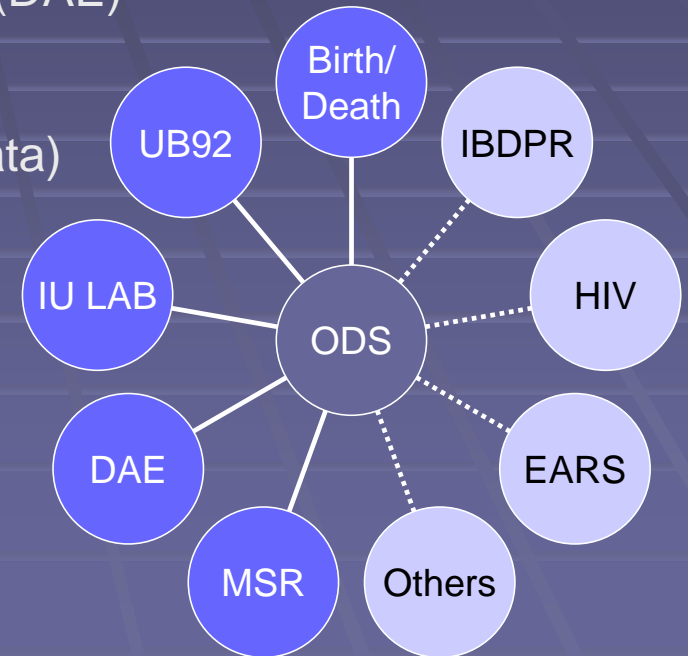
Operational Data Store (ODS)

❖ Fixed Data Sources (One Way Data Feeds)

- Vital Statistics – Birth & Death
- Hospitals– Reportable Birth Defects (UB92)
- IU Lab – Newborn Screening Dried Blood Spot & Hearing Screening Data
- Audiologists – Diagnostic Audiology Evaluations (DAE)
- Hospitals – Monthly Summary Reporting (MSR)

❖ Dynamic Datamarts (Contributing Consumers of Data)

- IBDPR
- HIV
- EARS
- OTHERS



❖ Data Integration – The Magic

Indiana's Early Hearing Detection and Intervention (EHDI) Program Diagnostic Audiology Evaluation (DAE) Form

Please use this form to report to the Indiana State Department of Health 1) any baby requiring follow-up from Universal Newborn Hearing Screening (UNHS), 2) any baby who did not receive UNHS, and any additional children diagnosed with permanent hearing loss. You may complete this form via the internet at www.sdkfsidji.org or by faxing it to 317-234-2995. If you have additional questions please contact the EHDI Program at 888-815-0006.

Patient Information:

Child's First Name:	Child's Last Name:
Child's Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female	Date of Birth:
Birth Facility:	UNHS Results: <input type="checkbox"/> Pass <input type="checkbox"/> Did Not Pass <input type="checkbox"/> Unknown
Birth Mother's First Name:	Birth Mother's Last Name:
Address:	Mother's Phone Number:
	Mother's Email:
Primary Care Physician (PCP) Name:	PCP Address & Phone Number:

Case History:

<input type="checkbox"/> Well Baby Nursery	<input type="checkbox"/> Special Care/NICU (more than 48 hours)
<input type="checkbox"/> Family History of Childhood Hearing Loss	<input type="checkbox"/> Hyperbilirubinemia requiring exchange transfusion
<input type="checkbox"/> Craniofacial Anomalies	<input type="checkbox"/> Otolotoxic Medications
<input type="checkbox"/> Bacterial Meningitis	<input type="checkbox"/> Genetic Syndrome associated with hearing loss (_____)
<input type="checkbox"/> Parental Concern	<input type="checkbox"/> Metabolic/Genetic/ECMO
<input type="checkbox"/> Congenital Infection <input type="checkbox"/> CMV <input type="checkbox"/> Syphilis <input type="checkbox"/> Rubella <input type="checkbox"/> Herpes <input type="checkbox"/> Toxoplasmosis <input type="checkbox"/> Other (_____)	

Audiologic Evaluation: Date of Evaluation: ____/____/____

Audiologist: _____ Phone Number: _____ Email: _____
Clinic Name & Address: _____

Methods of Evaluation:

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

Audiologic Results:

Left Ear Type:	Left Ear Degree:	Right Ear Type:	Right Ear Degree:
<input type="checkbox"/> Normal	<input type="checkbox"/> Normal (0-20 dB HL)	<input type="checkbox"/> Normal	<input type="checkbox"/> Normal (0-20 dB HL)
<input type="checkbox"/> Conductive	<input type="checkbox"/> Mild (21-40 dB HL)	<input type="checkbox"/> Conductive	<input type="checkbox"/> Mild (21-40 dB HL)
<input type="checkbox"/> Mixed	<input type="checkbox"/> Moderate (41-55 dB HL)	<input type="checkbox"/> Mixed	<input type="checkbox"/> Moderate (41-55 dB HL)
<input type="checkbox"/> Sensorineural	<input type="checkbox"/> Severe (71-90 dB HL)	<input type="checkbox"/> Sensorineural	<input type="checkbox"/> Severe (71-90 dB HL)
<input type="checkbox"/> Auditory Neuropathy	<input type="checkbox"/> Profound (91 + dB HL)	<input type="checkbox"/> Auditory Neuropathy	<input type="checkbox"/> Profound (91 + dB HL)
<input type="checkbox"/> Undetermined/Pending	<input type="checkbox"/> Undetermined/Pending	<input type="checkbox"/> Undetermined/Pending	<input type="checkbox"/> Undetermined/Pending

ENT Information: Referral Yes No Genetics Information: Referral Yes No

ENT Name: _____ Provider: _____
ENT Phone Number: _____ Provider Phone Number: _____

Additional Recommendations/Resources:

<input type="checkbox"/> Medical Follow-up with PCP	<input type="checkbox"/> Hearing Aid(s)	<input type="checkbox"/> Cochlear Implant(s)	<input type="checkbox"/> Family Resource Guide
<input type="checkbox"/> Vision Evaluation/Screening	<input type="checkbox"/> Communication Assessment (Signed/Spoken)	<input type="checkbox"/> Audiologic Monitoring in ____ months?	
<input type="checkbox"/> First Steps	<input type="checkbox"/> Other Ei Services	<input type="checkbox"/> SKI*HI Parent Advising	<input type="checkbox"/> Audiologic Monitoring in ____ weeks?

Results Communicated to:

ISDH PCP First Steps ENT Parent/Family Other (_____)

DAE FORM

+

INDIANA STATE DEPARTMENT OF HEALTH

878400

Certificate of Birth

This Certifies, that according to the records of the State Department of Health

Name _____

Was born in _____

Child of _____

Birthplace of father _____ Birthplace of mother _____

Record was filed _____ Certificate Number 113- _____



NOT VALID UNLESS MACHINE SIGNED WITH MULTI-COLORED RIBBON
IT IS UNLAWFUL TO REPRODUCE THIS RECORD

State Form 35431 (R/1-92) SDH06-010

Vital Statistics

❖ Data Integration – The Magic

UNIVERSAL NEWBORN HEARING SCREENING PROGRAM

BABIES TRANSFERRED INTO YOUR FACILITY
AND
DATES/RESULTS OF HEARING SCREENING

Monthly Summary Reporting Data

RECEIVING HOSPITAL'S NAME: _____



<u>CHILD'S HOSPITAL ID (MRN)</u>	<u>BABY'S NAME (First and Last)</u>	<u>DATE OF BIRTH</u>	<u>BIRTHING HOSPITAL</u>	<u>DATA TESTED AND RESULT</u>
17 64	Halcc Boy	12 -05	Hancock memorial	12-31-05 passed
17 87	Fr rl	12 -05	Ball Memorial	Still here
17 46	Mitch Boy	12 -05	Riverview	Still here
17 57	Holz w Boy	12 -05	Hancock Co	Still here
17 27	Edwa Girl	12 -05	Hendricks	Still here
17 88	Hutch Girl	12 -05	St Clare	Still here
17 29	Mill iirl	12 -05	St Mary's	Still here

Fax or email to Bess Godard, Universal Newborn Hearing Screening Program,
Indiana State Department of Health at 317-234-2995 (FAX) or
e-mail at bgodard@isdh.state.in.us

❖ Data Integration – The Results

Child
Health
Information
Profile

=

- Fully Customizable
- Data Driven
- Program Area Specific
- Web Based Component



❖ Process Improvement

The Solution:

EHDI
ALERT
RESPONSE
SYSTEM

- Custom Built, Web Based Application
- Founded on the CHIP Concept
- Includes Role Based Security
- Single Sign On – Portal Access

❖ Process Improvement

EARS: The *EHDI* Datamart

➤ Ensures User Authorization

The screenshot shows a Microsoft Internet Explorer browser window displaying the ISDH Healthnet Datacenter Portal. The browser's address bar shows the URL: [ISDH Healthnet Datacenter Portal - Microsoft Internet Explorer provided by Indiana State Dept. of Health](#). The page features a navigation menu with 'Main' selected. On the left, there is an 'Account Login' section with fields for 'Username' and 'Password', and buttons for 'Sign In', 'Register', and 'About'. Below this is a 'Forgot Your Password?' link and a 'Go To External' link. The main content area is titled 'Healthnet Portal Announcements' and contains four news items:

- Medical Error Program Now Available.** *12/21/2005*
The Medical Error application is now available for hospitals to use. A few tips when registering: When assigning professional roles to yourself, the preferred method is by Role Category. Once you've selected this, select the 'Hospital Administrative' role category. You'll now find various hospital related roles in the role drop down list. If you'd like to assign additional roles, select the role in the list, then click 'assign'. To remove a role, click the red 'remove' link for the professional role in question.
- IHAN - How to sign up additional contacts** *8/10/2005*
To sign up additional IHAN contacts that you want to receive an alert the same time as your IHAN Coordinator, add those users through the registration processes just as if you were the user. Access the registration process by clicking on the 'Register' button on the left hand menu (only visible if you're logged off). Use the contacts security code you received in the email.
- Indiana Safety Net** *5/5/2004*
Get the health and safety tips you need in one convenient location! Tips for Consumers, Children, Recreation and more! [read more...](#)
- The Bioterrorism Threat: Indiana Responds** *5/5/2004*
The Bioterrorism Threat: Indiana Responds -- a collection of three public broadcasting reports -- will detail specific bioterrorism threats in Indiana, examine our preparedness for an attack, and outline the ways in which Hoosiers should respond in the event of an attack. [read more...](#)

❖ Process Improvement

EARS: The *EHDI* Datamart

- Ensures User Authorization
- Eliminates Paper Forms

Early Hearing Detection And Intervention

Previous Profiles ▾

UNIVERSAL NEWBORN HEARING SCREENING

BALL MEMORIAL HOSPITAL INC

MONTHLY SUMMARY REPORTING - 4/2006

UNHS EXCEPTIONS REPORTING

Use the most relevant of the following codes to define why the child is listed on this page.

1. Death	2. Transferred Out	3. Hospital Error	4. NICU	5. Unauthorized Refusal
6. Religious Refusal	7. Equipment Failure	8. Rescreen Next Month	9. Initial Screen Next Month	

New Patient Intake:	Pass UNHS: (previously reported as not screened or transferred IN)	Did Not Pass UNHS: (complete Refer To section)
10. Transferred IN	11. Passed	12. Passed At Risk
	13. Did Not Pass	14. Did Not Pass At Risk

Use the following values to define to whom the child was referred, check all that apply.

A. First Steps	B. Primary Care Physician	C. Audiologist	D. Ear, Nose & Throat Physician
----------------	---------------------------	----------------	---------------------------------

Reason Code

Medical Record #

Infant First Name Last Name Sex Sex DOB

Mother First Name Last Name Phone () -

Primary Care Phys. No Name Selected

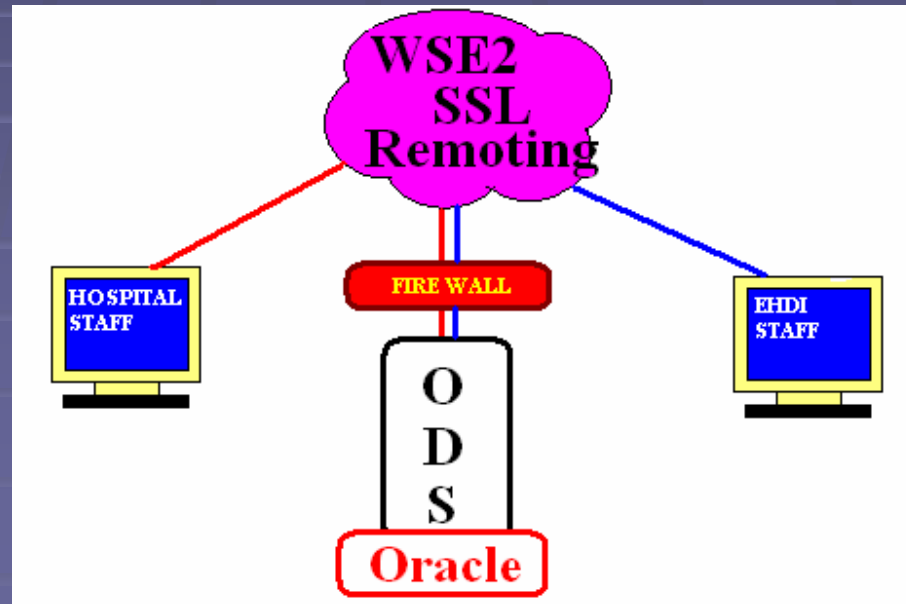
Comments [Reset](#)

[Add New Exception](#)

❖ Process Improvement

EARS: The *EHDI* Datamart

- Ensures User Authorization
- Eliminates Paper Forms
- Provides Real-Time Data Access



❖ Workflow Management

- Identify the current workflow
- Break down into logical units
- Evaluate & Establish Protocols
- Design, Develop & Implement Solution

EHDI
ALERT
RESPONSE
SYSTEM

EARS: The EHDI Datamart

❖ How It works

- User logs into the secured Indiana Health Data Center

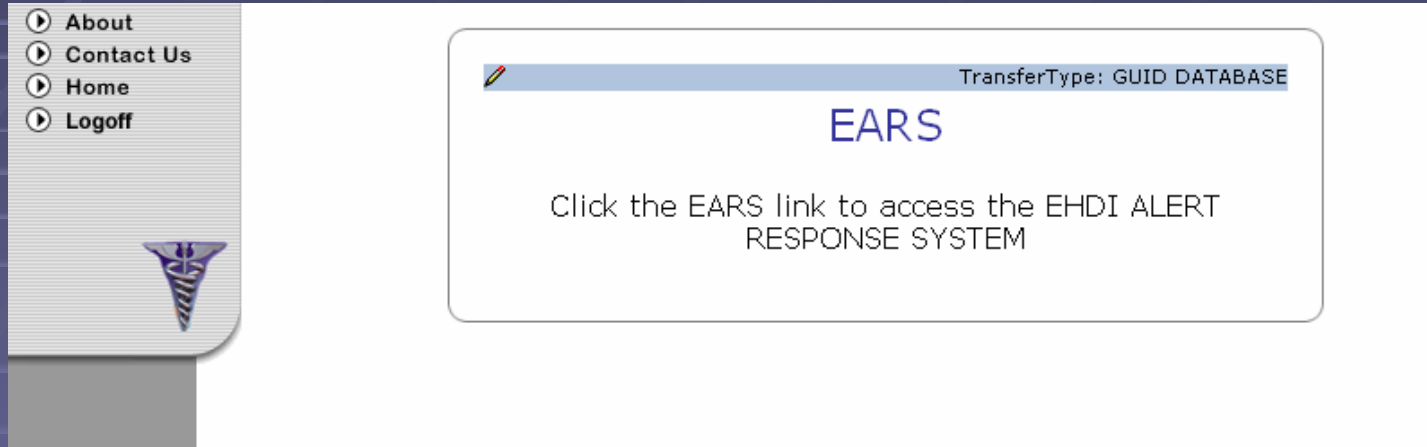
The screenshot shows a web browser window titled "ISDH Healthnet Datacenter Portal - Microsoft Internet Explorer provided by Indiana State Dept. of Health". The browser's address bar and menu bar are visible. The main content area features a blue header with "Indiana Health Data Center Portal" and "ISDH Local Access". On the left, there is a sidebar with "Account Login" fields for "Username" and "Password", and buttons for "Sign In", "Register", and "About". Below the login section is a "Forgot Your Password?" link and a "Go To External" button. The main content area is titled "Healthnet Portal Announcements" and contains four news items, each with a date and a small icon:

- Medical Error Program Now Available.** 12/21/2005
The Medical Error application is now available for hospitals to use. A few tips when registering: When assigning professional roles to yourself, the preferred method is by Role Category. Once you've selected this, select the 'Hospital Administrative' role category. You'll now find various hospital related roles in the role drop down list. If you'd like to assign additional roles, select the role in the list, then click 'assign'. To remove a role, click the red 'remove' link for the professional role in question.
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EARS: The *EHDI* Datamart

❖ How It works

➤ User Accesses **EARS**



EARS: The EHDI Datamart

❖ How It works

➤ Both Menu and Page Access Are Role Based

Healthnet Portal

- My Account
- Data Entry

- MSR - New ?
- MSR - Update ?

EHDI

- Log Off

Healthnet Portal

- My Alerts!
- My Account
- Data Entry
- NBS Main Menu
- EHDI Admin

- Send Alert ?

EHDI

- Log Off

- My Alerts!
- My Account
- Data Entry
- NBS Main Menu
- EHDI Admin

- Send Alert ?

EHDI

- Log Off



Indiana State
Department of Health



Early Hearing Detection
and Intervention Program



We're sorry.

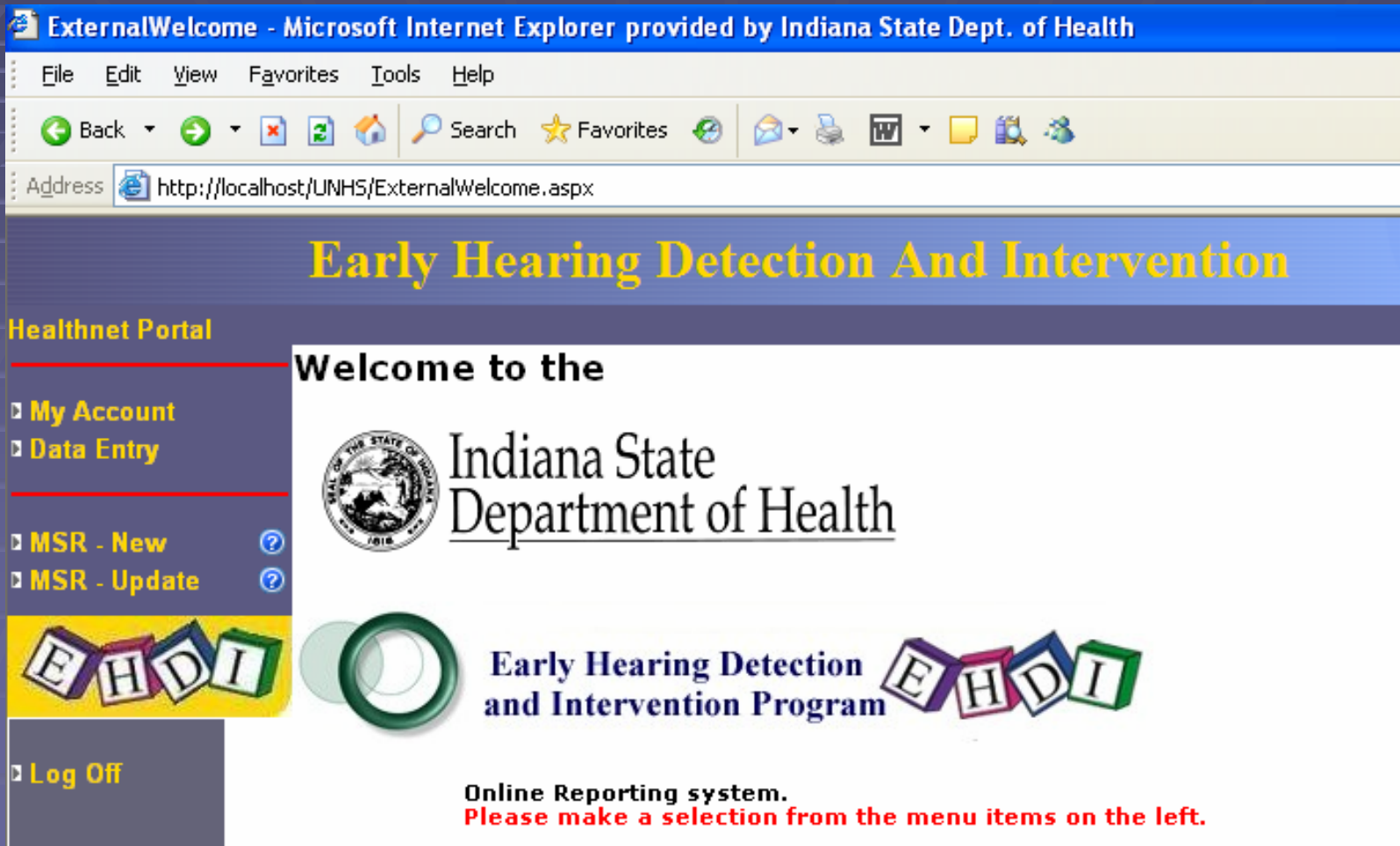
You are not authorized to access the request page of the EARS System.

If you feel you have received this message in error,
please contact Julie Schulte at jschulte@isdh.in.gov.
You may also call Julie @ 317.234.3358

EARS: The EHDI Datamart

❖ How It works

- The External User adds a New MSR Or DAE



ExternalWelcome - Microsoft Internet Explorer provided by Indiana State Dept. of Health

File Edit View Favorites Tools Help

Back Search Favorites


Address <http://localhost/UNHS/ExternalWelcome.aspx>



Early Hearing Detection And Intervention

Healthnet Portal

- My Account
- Data Entry
- MSR - New
- MSR - Update
- Log Off

Welcome to the

 Indiana State Department of Health

 **Early Hearing Detection and Intervention Program** 

Online Reporting system.
Please make a selection from the menu items on the left.

EARS: The EHDI Datamart

❖ How It works

➤ MSR Exception Data Entry

Early Hearing Detection And Intervention

UNIVERSAL NEWBORN HEARING SCREENING

ST. VINCENT HOSPITAL & HEALTH SERVICES

MONTHLY SUMMARY REPORTING - 4/2006

UNHS EXCEPTIONS REPORTING

Use the most relevant of the following codes to define why the child is listed on this page.

Not Screened Due To:

- | | | | | |
|----------------------|----------------------|------------------------|------------------------------|-------------------------|
| 1. Death | 2. Transferred Out | 3. Hospital Error | 4. NICU | 5. Unauthorized Refusal |
| 6. Religious Refusal | 7. Equipment Failure | 8. Rescreen Next Month | 9. Initial Screen Next Month | |

New Patient Intake:

- | | | | | |
|--------------------|------------|--------------------|------------------|--------------------------|
| 10. Transferred IN | 11. Passed | 12. Passed At Risk | 13. Did Not Pass | 14. Did Not Pass At Risk |
|--------------------|------------|--------------------|------------------|--------------------------|

Use the following values to define to whom the child was referred, check all that apply.

- | | | | |
|----------------|---------------------------|----------------|---------------------------------|
| A. First Steps | B. Primary Care Physician | C. Audiologist | D. Ear, Nose & Throat Physician |
|----------------|---------------------------|----------------|---------------------------------|

Reason Code	12 Passed At Risk	Date Screened		Referred To:	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
Medical Record #	abc123							
Infant First Name	Test	Last Name	Data	Sex	Male	DOB	04/01/2006	
Mother First Name	Mother	Last Name	Data	Phone	(317) 555-4444			
Primary Care Phys.	SCHOEFF, ALAN							
Comments	This is a sample for the EHDI conference							


[Add New Exception](#)

EARS: The EHDI Datamart

❖ How It works

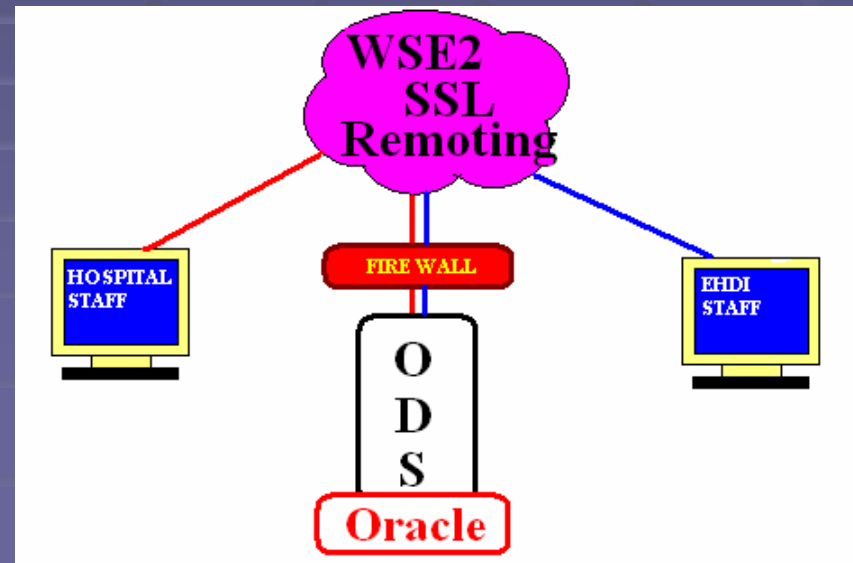
- Entry is visually displayed for the user

Add New Exception

Code	MRN	Infant Name	DOB	Mother Name	Mother Phone	Physician Name	Physician Phone	Transfers In/Out	Referred To	Screen Date	Comments	
 1	abc123	DATA, TEST	4/1/2006	DATA, MOTHER	317-555-4444	SCHOEFF, ALAN	317-555-4444		<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D		This is a sample for the EHDI conference	X

[Continue](#)

- Within seconds ISDH EHDI staff is alerted and a digital “file” is opened!



EARS: The EHDI Datamart

❖ How It works

- ISDH staff logs on and is presented with ALERTS

Early Hearing Detection And Intervention

Previous Profiles ▾

Priority	Source	Message	Alert Date
	MSR	Hospital Error - False Being	4/20/2006 4:05:22 PM
	MSR	Hospital Error - AL Click here to resolve this alert.	4/5/2006 4:51:00 PM
	MSR	Passed At Risk - Fake Person	4/5/2006 3:04:53 PM

EARS: The EHDI Datamart

❖ How It works

➤ Staff Reviews **CHIP** and Selects Alert to Resolve


My Alerts EHDI - Child Health Information Profile

Demographics

Name False Being	Gender F	ODS ID 4340569
Address	Race White	SSN
Birth 12/31/2005	Ethnicity Spanish, Other Hispanic	
Death	Siblings <input type="text" value="No Siblings"/>	

Mother's Name False Being's Mother	Address 123456 Some Street, Carmel By The Sea, IN, 44444	Phone 317-555-4444
Father's Name False Being's Father	Address 123456 Some Street, Carmel By The Sea, IN, 44444	Phone 317-555-4444
PCP's Name Marcus Welby, MD	Address Another Fake Address, IN, 47201	Phone 317-444-4444




Birth Data

Birth Facility Big Birthing Hospital of Indiana	Facility Type	Birth Order 1	Plurality 1
Birth Weight 3690 Gr	Gestational Age	Transfused? <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> NOS	
Confirmed Birth Defects  <input type="text" value="Conductive hearing loss, tympanic membrane"/>			

Hearing Data

[File](#) | [Hide Alerts](#) | [Response](#) | [UNHS DATA](#) | [DAE DATA](#)

Alerts

PRIORITY	SOURCE	MESSAGE	CREATED	DELAY TO	ASSIGNED TO	RESOLVED
	MSR	Hospital Error - False Being	4/20/2006	4/20/2006	ALAN SCHOEFF	
	FAX	Fax Response Due	5/5/2006	5/4/2006	ALAN SCHOEFF	5/10/2006 12:00:00 AM
	PHONE	Phone Response Due	5/2/2006	5/1/2006	ALAN SCHOEFF	5/10/2006 12:00:00 AM




EARS: The EHDI Datamart

❖ How It works

- System Navigates to Alert Response Center

Early Hearing Detection And Intervention

Alert Response Center

Priority	Source	Message	Alert Date
	MSR	Hospital Error - ALAN SCHOEFF	4/5/2006 4:51:00 PM
	MSR	Hospital Error - False Being	4/20/2006 4:05:22 PM
	MSR	Passed At Risk - Fake Person	4/5/2006 3:04:53 PM

Email

Fax

Phone

U.S. Mail

EARS: The *EHDI* Datamart

❖ How It works

- User selects a method of responding to the alert

Passed At Risk - Fake Person			4/5/2006 3:04:53 PM
<input type="radio"/> Email	<input type="radio"/> Fax	<input type="radio"/> Phone	<input type="radio"/> U.S. Mail

EARS: The EHQI Datamart

❖ How It works

- System opens appropriate tool
- User completes the data entry
- System generates a delayed alert
- User returns to “My Alerts” and processes next Alert

Email Fax Phone U.S. Mail

To:

CC:

RE:

Body:

TO: CC:

Alan Schoeff
Julie Schoeff
aschoeff@isdh.in.gov
bgodard@isdh.in.gov
jschulte@isdh.in.gov

Early Hearing Detection And Intervention

Previous Profiles ▾

Priority	Source	Message	Alert Date
✘	MSR	Hospital Error - False Being	4/20/2006 4:05:22 PM
✘	MSR	Hospital Error - AL Click here to resolve this alert.	4/5/2006 4:51:00 PM
⚠	MSR	Passed At Risk - Fake Person	4/5/2006 3:04:53 PM

Notify me to follow-up in days.

Send

EARS: The EHDI Datamart

❖ How It works

- The Alert/Response Continues Until the File is closed

Hearing Data
Hide File | Alerts | Response | UNHS DATA | DAE DATA

File Status	Left	Right	Risk Factors
Open Closed Open	Unknown	Unknown	<input type="checkbox"/>
	Unknown	Unknown	<input type="checkbox"/>
	Normal	Normal	

Conclusion:

❖ Data Integration

Child
Health
Information
Profile

EHDI
ALERT
RESPONSE
SYSTEM

❖ Process Improvement

- Ensures User Authorization
- Eliminates Paper Forms
- Provides Real-Time Access

❖ Workflow Management

- Reduces Data Entry Errors
- Assures no child is 'missed'
- Provides Finality to Follow-up

Manage Our Data and Optimize Outcomes