PA Case Management System (iCMS)
SaaS Implementation

Hearing Screen Provider (HSP)
Training
What is iCMS?

- Internet Case Management System (iCMS), a web-based software application
- Used by the Pennsylvania Department of Health's Division of Newborn Screening and Genetics (DNSG) for case management, tracking and managing the follow-up of newborn filter paper and point-of-care (POC) screening results for infants born/residing in PA
- Developed and supported by Neometrics, a division of Natus
Service Vendor

• Neometrics, a division of Natus, incorporated in 1978
• Based in Hauppauge, NY
• Staff has over 100 years of experience in newborn screening and data management
• Market leader in newborn screening software for:
  — Testing, reporting and case management
  — Electronic data transfer (via HL7)
  — Federal reporting
Lisa Hudson, Applications Systems Analyst II and Certified HL7 Control Specialist, has over 20 years of public health systems experience.

Responsibilities include:

- Provide assistance and training to existing clients (users and IT staff)
- Provide technical expertise on application, network and database issues
- Create user manuals, documentation and training materials
- Prepare iCMS users for training and go-live
- Train iCMS users

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PA DNSG

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Stacey Gustin, Public Health Program Manager - sgustin@pa.gov

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Charu Pahwa, IT Project Manager - c-chapahwa@pa.gov
Training Schedule

9:00 am - 11:00 am
- Introduction
- Programmatic Requirements
- Manual Data Entry

Break

11:15 am - 1:00 pm
- Unmatched Hearing Results
- Case Management
- Reports
- User Administration
- HL7 Data Transmission
- Device Upload
Training Materials

The training folder includes the following:

- Trainer Slides
- Login Information Sheet
- Sample Hearing Screening Reporting Form
- Go Live Check List
- WebEx Schedule
- Training Evaluation Form
Implementation Goals

Provide a *single comprehensive* data system that:

- supports the newborn metabolic, hearing and critical congenital heart defects (CCHD) screening follow-up programs
- supports unlimited DOH and external users, with different scopes and levels of access based on their roles
- provides fast and accurate identification of infants and their newborn screening results
- provides a secure interface for exchanging protected health information (PHI) with the contracted laboratories, submitters and treatment centers
- increases timeliness and efficiency of follow-up and reporting
Implementation Plan

✓ **Phase I**: Laboratories are able to send newborn filter paper screening data to iCMS, using HL7 messaging. DOH users are able to perform newborn screening follow-up activities and run reports in iCMS. An ad-hoc reporting tool is also provided for DOH to build custom reports, as needed.

**Current Phase**

• **Phase II**: Hospitals, midwives and birthing centers (Hearing Screen Providers or HSPs) are able to manually enter or electronically submit hearing screening data to iCMS and treatment centers are provided access to iCMS for *specified* diagnostic follow-up activities.

• **Phase III**: Audiologists, Cardiologists and other health care professionals working with the newborns are provided access to iCMS for *specified* in-patient and out-patient diagnostic evaluation follow-up activities.
Phase II Objectives

• Hospitals, midwives and birthing centers (HSPs) are able to manually enter or upload hearing screening data to iCMS.
• Effective January 1, 2018, begin individual level reporting of hearing screening results for ALL infants, not just infants that failed the initial or outpatient screen.
• Bring the Pennsylvania newborn hearing screening program in-line with other newborn hearing screening programs across the country.
• Reduce and eventually eliminate the need for the current paper/fax reporting system.
• Allow quicker follow-up of failed hearing screens, leading to quicker diagnosis and enrollment into early intervention.
HSP Responsibilities

Following the PA iCMS HSP Training Course

• Within 2 weeks of attending this training
  — train the team members
  — complete proficiency exercises
  — coordinate a go-live date with Lisa Hudson
  — participate in weekly HSP Training Support WebEx for a total of 6 weeks

Go-Live

• Begin submitting all screened and non-screen results for infants delivered by your facility and transferred to your facility within 7 days of the screen
Data Entry Learning Objectives

• Be able to enter data into iCMS
• Use iCMS to track and monitor infant in-patient (IP) and out-patient (OP) screen status and follow-up
• Demonstrate the ability to use iCMS from a HSP perspective
• Be prepared to train others on how to use the system
• Be prepared to create user accounts in iCMS for other users
• Feel comfortable using iCMS
iCMS Key Features For HSP Users

- Report all hearing screens directly into iCMS
- There are 3 modes of hearing results data transmission:
  - Manual
  - Device Upload
  - HL7
- Access to test results for hearing screens
- Replace the paper forms and faxing currently used for result reporting
- Effective search capabilities to locate patient history and demographic information
Current Protocol

• HSP logs birth and screens the infant
• For failed screens or a ‘No Show’ for an OP screen, the HSP completes a form and faxes to DNSG
• HSP maintains IP screen results in the patient medical record
• HSP notifies the PCP of the IP screen results
• HSP submits a monthly hearing screening report to DNSG
New iCMS Reporting Requirements

- All infants in your facility must be entered into iCMS with demographic data and hearing screen outcome within 7 days of screen.
- Non-screened infants must be entered within 7 days of transfer or discharge.
- All babies born in PA or born outside PA but living in PA must be reported.
- Follow-up appointment details must be provided for infants with refer or missed results.
- If the infant is screened multiple times, all completed screens must be submitted.

**Note:** The current hearing reporting form will no longer be provided by the state to the HSPs after 1/1/18.
iCMS Concepts

- MATCHED – the goal for HSP users is for their hearing results to be *MATCHED* to the filter paper results in iCMS.
- When does a *record* become a *case*?
- Sequence of data entry – date and time of hearing screen
- Libraries
- PHI and emails (trusted sender Neometrics.com)
New HSP iCMS Process Flow

Enter IP or OP Screening Result into iCMS
- System looks for filter paper MATCH on Birth Hospital + MRN
  or
- System looks for secondary MATCH on demographics
  - If MATCHED, system adds hearing results to the infant record in iCMS

Unmatched Hearing Results
- Confirm all required data fields entered and record is in SUBMITTED status
- Monitor until MATCHED

Monthly Reporting
- Reconcile iCMS with your birth count to confirm all infants are in iCMS
- Continue to submit Monthly Birth Summary Report

Case Management
- Monitor infant through the follow-up process in iCMS
Let’s Get Started...
URL For Training:  
https://www.nbs.train.pa.gov/toolbar/login.aspx

URL For Production:  
https://www.nbs.pa.gov/toolbar/login.aspx

In IE you must run in compatibility mode:  
Tools -> Compatibility View Setting  
Add this website  ➔  Click Add
Password Criteria

- Passwords must have 8 characters including an uppercase, lowercase, numeric and a symbol
- Password can not be one that was previously used within last 180 days
- Users can only change their password 1 time every 15 days
- HSP Administrators can reset a user’s password at any time
- Temporary password is good for 14 days
- Password reset required every 60 days
User Terms and Conditions

Users must agree to these terms and conditions to access iCMS.
Landing Page

Top Toolbar:

- **Home (Landing Page)** – Daily tasks and system options
- **Release Notes** – Training Materials
- **Contact Us** – Newborn Screening home page
- **Logout** – Exit out of iCMS
Hearing Results Manual Entry

• Link to enter new IP, OP or non-screened hearing results manually

• Non-screened results include Missed, No Show, Parent Refusal, Transferred, Expired or NMI (Not Medically Indicated)
Hearing Results Manual Entry
Demographics

* Mandatory data for Submit
** Mandatory data for Save or Submit

Option drop-down
Calendar drop-down
Library lookup

• Enter data and tab between fields
Hearing Results Manual Entry

Demographics

- Enter, at minimum, mandatory data for Save
- Birth hospital indicates where the infant was born
- Search and select the birth hospital from the iCMS Provider library by clicking the ellipsis ...
- For babies born outside PA, enter Birth Hospital as H98769 and select Yes in the “Out of State Baby” box
- For home births, enter Birth Hospital as M1227
## Hearing Results Manual Entry

### Hearing Screen Results

<table>
<thead>
<tr>
<th>IP/OP Screening Results</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>* Screen Type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>** Screen Provider</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screener</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Date of Screening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Time of Screening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date Screening Results Received</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Result Left Ear</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Screening Method Left</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP Malformation Left Ear</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Notified Date</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Screen Type:
- Inpatient
- Outpatient

#### Screen Result:
- Missed
- Pass
- Refer
- No Show
- Parent Refusal
- Transferred
- NMI
- Expired

#### Screening Method:
- ABR
- OAE
- N/A

#### IP Malformation:
- None
- Atresia
- Microtia
- Both
Hearing Results Manual Entry
Hearing Screen Results
Date and Time of Screening - Business Rules

Date of Screening
• **Missed** – Enter the date when the baby was discharged without a hearing screen
• **No show** – Enter the date of the appt. when the family was a no show
• **Parent Refusal** – Enter the date of the parent refusal
• **Transferred** – Enter the date when the baby was transferred
• **NMI** – Enter the date when it was determined that hearing screen could not be performed
• **Expired** – Enter the date when the baby expired

Time of Screening
• For the above non-screen results, enter the Time of Screening as **00:00**.
Hearing Results Manual Entry
Hearing Screen Results

### Pass Result

<table>
<thead>
<tr>
<th>IP/OP Screening Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Screen Type</strong></td>
</tr>
<tr>
<td><strong>Screen Provider</strong></td>
</tr>
<tr>
<td><strong>Screener</strong></td>
</tr>
<tr>
<td><strong>Date of Screening</strong></td>
</tr>
<tr>
<td><strong>Time of Screening</strong></td>
</tr>
<tr>
<td><strong>Date Screening Results Received</strong></td>
</tr>
<tr>
<td><strong>Result Left Ear</strong></td>
</tr>
<tr>
<td><strong>Screening Method Left</strong></td>
</tr>
<tr>
<td><strong>IP Malformation Left Ear</strong></td>
</tr>
<tr>
<td><strong>Family Notified Date</strong></td>
</tr>
</tbody>
</table>

| **Result Right Ear**     | Pass |
| **Screening Method Right** | ABR |
| **IP Malformation Right Ear** | |
| **PCP Notified Date**    | |

### Refer Result with a Malformation

| **Result Left Ear**     | Refer |
| **Screening Method Left** | ABR |
| **IP Malformation Left Ear** | Atresia |

| **Result Right Ear**     | Refer |
| **Screening Method Right** | ABR |
| **IP Malformation Right Ear** | Atresia |

### Non-Screened Result

| **Result Left Ear**     | Parent Refusal |
| **Screening Method Left** | N/A |

| **Result Right Ear**     | Parent Refusal |
| **Screening Method Right** | N/A |
Hearing Results Manual Entry
Appointments

- **OP Hearing Screen** - needed if IP final results are Refer or Missed
- **Diagnostic Evaluation** - needed if OP final results are Refer
- To submit appointment details, select the appointment type in the “Referred To” drop-down and enter the details
Hearing Results Manual Entry

Appointments

Referral Provider: the ch

To Search a Provider, type in a partial name then click the ellipsis

Select Referral Provider:

<table>
<thead>
<tr>
<th>#</th>
<th>ID#</th>
<th>Type</th>
<th>Description</th>
<th>Last Name</th>
<th>First Name</th>
<th>Address</th>
<th>Address 2</th>
<th>City</th>
<th>Zip Code</th>
<th>Phone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>audi4162</td>
<td>Audiologist</td>
<td>The Children's Hospital of Philadelphia, Specialty Care Center-Brandywine Valley</td>
<td></td>
<td></td>
<td>819 Baltimore Pike</td>
<td>NULL</td>
<td>Glen Mills</td>
<td>19342</td>
<td>(800) 551-5480</td>
<td>(800) 551-5480</td>
</tr>
<tr>
<td></td>
<td>audi4161</td>
<td>Audiologist</td>
<td>The Children's Hospital of Philadelphia, Specialty Care Center-Bucks County</td>
<td></td>
<td></td>
<td>500 West Butler Avenue</td>
<td>NULL</td>
<td>Chalfont</td>
<td>18914</td>
<td>(800) 551-5480</td>
<td>(800) 551-5480</td>
</tr>
<tr>
<td></td>
<td>audi4160</td>
<td>Audiologist</td>
<td>The Children's Hospital of Philadelphia, Specialty Care Center-Exton</td>
<td></td>
<td></td>
<td>481 John Young Way</td>
<td>NULL</td>
<td>Exton</td>
<td>19341</td>
<td>(800) 551-5480</td>
<td>(800) 551-5480</td>
</tr>
<tr>
<td></td>
<td>audi4159</td>
<td>Audiologist</td>
<td>The Children's Hospital of Philadelphia, Specialty Care Center-King of Prussia</td>
<td></td>
<td></td>
<td>950 Pulaski Drive</td>
<td>NULL</td>
<td>King of Prussia</td>
<td>19406</td>
<td>(800) 551-5480</td>
<td>(800) 551-5480</td>
</tr>
</tbody>
</table>

[Description] is like the ch%

Clear

Appointment Information

Referral To: Diagnostic Evaluation

Follow-Up Appt Date: 8/15/2017

Follow-Up Appt Time: 15:00

Referral Provider: audi4162

The Children's Hospital of Philadelphia, Specialty Care Center-Brandywine Valley
819 Baltimore Pike
Glen Mills, 19342

Dr. Smith

Referral To Phone #: (215) 555-5555
## Risk Factors

<table>
<thead>
<tr>
<th>Hearing Risk Factors Entry</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
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<td>Yes</td>
<td>No</td>
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<td>Yes</td>
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<td>Yes</td>
<td>No</td>
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<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

If Risk Factors are collected, indicate Risk Factors.
- **Yes** - Risk exists
- **No** - Risk does not exist
- **Not Entered** - Risk is not indicated
Hearing Results Manual Entry

Prompts

- **Save** – Save incomplete data for re-editing without submitting for match
- **Submit** – Save and submit data for match with filter paper results
  
  **Note**: A record must be in “Submitted” status to be matched

- **Cancel** – Cancel data entered
- **Delete** – Delete hearing result record (non-matched results only)
- **Submit and Additional** – Submit current record and then duplicate demographics to allow quick entry of another hearing result for the same infant

- **Return To Previous Page** – Discard and return to previous screen
Hearing Results Manual Entry Prompts

- If a user selects “Submit” and not all mandatory data is entered, a prompt will display.
- Click “OK” to return to the Hearing Results Manual Entry screen.
- Scroll to the top of the screen to view details regarding the missing or incorrect data.
Hearing Results Manual Entry Prompts

- Clicking “Submit” or “Submit and Additional” will display this confirmation screen.

- Click “Submit” or “Return to Entry”.

- In case the results need to be corrected to “Pass”, clear the appointment details first, and then change the results.
Hearing Results Manual Entry
Prompts

• Clicking “Save” and then “Submit” will display a confirmation message

• Clicking “Submit and Additional” will display a new form with the same demographics to allow you to enter a rescreen result
Non-Screened Results

- Non-Screened Results with Method (N/A)
  - Missed
  - Expired
  - Transferred
  - Parent Refusal
  - NMI (Not Medically Indicated)
  - No Show

  — Generally will not come via Device Upload
  — If not entered in your EMR, will not come via HL7
  — Expired, Transferred, Missed and No Show results will auto-fill for both ears

- Every infant in iCMS must indicate a screened or non-screened result
Hearing Results Manual Entry

Exercises

• Enter IP Pass/Pass
• Enter IP Refer/Pass
• Enter IP Parent Refusal
• Enter IP Missed
• Enter IP Transferred
• Enter IP Refer/Refer Atresia w/OP Appointment
• Enter OP Refer/Refer w/ Diagnostic Appointment
• Enter OP No Show
Unmatched Hearing Results

- Link to records with incomplete data or unmatched status
- Filter paper results are received from the lab within 6-7 days of FP submission
- Hearing results must be submitted within 7 days of the screen
The filter and sorting options described for this grid can be used throughout iCMS. The “Export to Excel” will take all data displayed on the grid and create an excel file. This option also appears on all iCMS grids. When selected, a popup message will display at the bottom of the screen:

Do you want to open or save Export_8_5_2017_2_49_PM.xlsx from 10.24.3.131?
Unmatched Hearing Results

- Displays results that:
  - have incomplete data to be edited
  - have complete data but have not been matched to a filter paper
- Highlights results that are unmatched for over 10 days
- To view and edit a record, click “Select” next to it
Unmatched Hearing Results

** Edit Hearing Results Manual Entry **
* Indicates Mandatory Fields for Submit
** Indicates Mandatory Fields for Save or Submit

** Patient Information **
- Medical Record #: 200001000
- Initial FP #
- Infant Last Name: TEST
- Infant First Name: BABYGIRL
- AKA Last Name
- AKA First Name
- Date of Birth: 3/16/2017
  - Gender: Female
  - Birth Order: Not Multiple Birth
  - NICU
  - Out of State Baby

** Mother’s Information **
- Mother Last Name
- Mother First Name
- Mother Phone ( ) -

** Remember a record must be flagged as Submit to be Matched

- The record opens in edit mode
- Make any changes needed
- Scroll to the bottom and select a response
  - Save
  - Submit **
  - Cancel
  - Delete
  - Submit and Additional
Matching the Hearing Results to the Filter Paper

• Primary Match (Processed Overnight)
  – The system will automatically match a hearing result to a filter paper based on Birth Hospital + MRN

• Secondary Match (Reviewed by CHN)
  – The CHN will review unmatched hearing results and compare demographics to find possible matches
    • Last Name, AKA Name, DOB, Gender, Birth Hospital, Birth Order, Mom Last and Mom First

• Manual Match (Reviewed by CHN)
  – A CHN can manually match a hearing result to any filter paper
Case Management

- Allows users to search for specific cases based on selected criteria
To find a record, enter a value in one or more of the fields and click “Search”
- A combination of fields can be used, e.g. Infant Last Name and DOB
- Wildcard cards can also be used, e.g. Infant Last Name as “SM*”
- Click “Reset” to clear the search
- If the search returns more than 10,000 records, a warning message will be displayed
Case Management

- Click “Select” to view a record from the search results
The header of a case has several components:

- The center, blue banner identifies the infant
- The left-side navigation menu includes links for other case details
- The right top corner allows for system navigation
  - **Cancel** - Return to the previous screen
  - **Retry** - Return to the grid from where you selected the case
  - **Prev** and **Next** - Allow you to view additional filter papers for the case
Case Management

- **Demographics** – current demographic data for the case
- **Appointments** – OP, Diagnostic or Other scheduled appointments
- **Lab Demographics** – demographics from the filter paper
- **IP/OP Screening Results** – hearing results
- **Hearing Risk Factors** – risk factors for the case
- **Hearing Diagnostic Evaluation** – diagnosis evaluation results

**Note:** The Filter Paper and CCHD results are not accessible to the HSP.
Case Demographics

• Displays the most recent demographic information in view-only mode

• If you have more recent demographic information, please email it to the CHN assigned to this case
### Appointments

<table>
<thead>
<tr>
<th>Appointment Type</th>
<th>Appointment Date</th>
<th>Appointment Time</th>
<th>Provider</th>
<th>Comment</th>
<th>Entered By</th>
<th>Date Created</th>
<th>Modified By</th>
<th>Date Updated</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP Hearing Screening</td>
<td>08/15/2017</td>
<td>15:00</td>
<td>Albert Einstein Medical Center</td>
<td>Lisa State Admin</td>
<td>08/08/2017 15:51:01</td>
<td>Lisa State Admin</td>
<td>08/08/2017 15:51:01</td>
<td></td>
</tr>
</tbody>
</table>

- Lists existing hearing appointments for the case: OP Hearing Screening, Diagnostic Evaluation, and other
- Click “Select” to view the details
Appointments

- View only screen
- For changes, email the CHN assigned to the case
Lab Demographics

<table>
<thead>
<tr>
<th>Child’s Information</th>
<th>Submitter / Physician</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newborn ID PA1500</td>
<td>Name BAR</td>
</tr>
<tr>
<td>Collection Date / Time 01/02/2016 @ 0950</td>
<td>Submitter Harrisburg Hospital Address 111 S Front Street Harrisburg PA 17101</td>
</tr>
<tr>
<td>Med Rec Number 92208</td>
<td>Phone (717) 782-3131</td>
</tr>
<tr>
<td>Birth Date / Time 01/01/2016 @ 0924</td>
<td>Fax (717) 782-5980</td>
</tr>
<tr>
<td>Sex Male</td>
<td>Physician Name ANN BOGDAN</td>
</tr>
<tr>
<td>Race White</td>
<td>Address City</td>
</tr>
<tr>
<td>Hispanic No</td>
<td>State</td>
</tr>
<tr>
<td>Birth Order</td>
<td>Zip Code</td>
</tr>
<tr>
<td>Birth Weight 2296 grams</td>
<td>Phone (717) 691-1212</td>
</tr>
<tr>
<td>Current Weight</td>
<td>Birth Hospital Harrisburg Hospital Address 111 S Front Street Harrisburg PA 17101</td>
</tr>
<tr>
<td>Transfused No</td>
<td>Phone (717) 782-3131</td>
</tr>
<tr>
<td>Trans Date/Time</td>
<td>NICU No</td>
</tr>
<tr>
<td>Specimen Age 63</td>
<td>Hyperal</td>
</tr>
<tr>
<td>Specimen Type Initial Specimen</td>
<td>Carnitine</td>
</tr>
<tr>
<td>Age of Collection 24</td>
<td>Meconium Ileus</td>
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<td>Date Spec Received 01/05/2016</td>
<td>Antibiotics</td>
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<tr>
<td>NICU Yes</td>
<td>Weeks Gestation 37</td>
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<td>Hyperal</td>
<td>Thryoid Disease</td>
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<tr>
<td>Carnitine</td>
<td>Diabetes</td>
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<tr>
<td>Meconium Ileus</td>
<td>On Steriods</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>Maternal Hepatitis NEG</td>
</tr>
<tr>
<td>Weeks Gestation</td>
<td>Other</td>
</tr>
</tbody>
</table>

- View only
- Populated from the filter paper
IP/OP Screening Results

- Lists existing IP and OP hearing results for the case
- Click “Select” to view the details
IP/OP Screening Results

- View only
- If the result was entered in error contact the CHN
- For corrections, enter a new result on the Manual Entry Screen and email the CHN to discard the previous entry
### Hearing Risk Factors

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes/No/Not Entered</td>
<td>Caregiver concern regarding hearing, speech, language, or developmental delay.</td>
</tr>
<tr>
<td>Yes/No/Not Entered</td>
<td>Family history of permanent childhood hearing loss.</td>
</tr>
<tr>
<td>Yes/No/Not Entered</td>
<td>Neonatal intensive care of more than 5 days or any of the following regardless of length of stay: ECMO, assisted ventilation, exposure to ototoxic medications (Gentamicin and tobramycin) or loop diuretics (furosemide/Lasix), and hyperbilirubinemia that requires exchange transfusion.</td>
</tr>
<tr>
<td>Yes/No/Not Entered</td>
<td>In utero infections, such as CMV, herpes, rubella, syphilis, and toxoplasmosis.</td>
</tr>
<tr>
<td>Yes/No/Not Entered</td>
<td>Craniofacial anomalies, including those that involve the pinna, ear canal, ear tags, ear pits, and temporal bone anomalies.</td>
</tr>
<tr>
<td>Yes/No/Not Entered</td>
<td>Physical findings, such as white forelock, that are associated with a syndrome known to include a sensorineural or permanent conductive hearing loss.</td>
</tr>
<tr>
<td>Yes/No/Not Entered</td>
<td>Syndromes associated with hearing loss or progressive or late-onset hearing loss, such as neurofibromatosis, osteopetrosis, and Usher syndrome; other frequently identified syndromes include Waardenburg, Alport, Pendred, and Jervell and Lange-Nielsen.</td>
</tr>
<tr>
<td>Yes/No/Not Entered</td>
<td>Neurodegenerative disorders, such as Hunter syndrome, or sensory motor neuropathies, such as Friedreich ataxia and Charcot-Marie-Tooth syndrome.</td>
</tr>
<tr>
<td>Yes/No/Not Entered</td>
<td>Culture-positive postnatal infections associated with sensorineural hearing loss, including confirmed bacterial and viral (especially herpes viruses and varicella) meningitis.</td>
</tr>
<tr>
<td>Yes/No/Not Entered</td>
<td>Head trauma, especially basal skull/temporal bone fracture requiring hospitalization.</td>
</tr>
<tr>
<td>Yes/No/Not Entered</td>
<td>Chemotherapy.</td>
</tr>
</tbody>
</table>

- View only
- One set per case
Hearing Diagnostic Evaluation

• Lists existing hearing diagnostic evaluations for the case
• Evaluation Status indicates the following:
  — In Progress - not complete
  — Completed - marked as final
• Click “Select” to view the details
### Hearing Diagnostic Evaluation

- **View only**
- **Multiple hearing diagnostic evaluations can be submitted**
- **“Final Diagnosis” box indicates a completed evaluation**

![Hearing Diagnostic Evaluation Form](image)

<table>
<thead>
<tr>
<th>Field</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Diagnostic Evaluation</td>
<td>7/28/2017</td>
</tr>
<tr>
<td>Results Right Ear</td>
<td>Normal Hearing, Sensorineural Loss</td>
</tr>
<tr>
<td>Degree of Loss Right Ear</td>
<td>Normal (0-15 dB), Mid (26-30 dB)</td>
</tr>
<tr>
<td>Diagnosis Method</td>
<td>Click ABR, Tona Burst ABR, Bone Conduction ABR, Tympanometry</td>
</tr>
<tr>
<td>Recommendations</td>
<td>Medical Follow up, ENT Consult/Clearance, Amplification</td>
</tr>
<tr>
<td>Audiological Re-Evaluation</td>
<td>EI Office Referred to (when/how often)</td>
</tr>
<tr>
<td>Final Diagnosis</td>
<td>Created Date 08/08/2017</td>
</tr>
</tbody>
</table>
Case Menu – Exercise

- Go to Case Management
- Search for NB ID# PA160146019
  — Use the Case Menu to review the data for this case
- Search for an infant born 9/1/2017
- Search for an infant born between 9/1/2017 and 10/1/2017 with last name starting with T*
Click “Case Management” from the Landing Page
Click the “Utilities” tab
Select **Birth Log** and **Birth Summary** report
To run your report, enter the search criteria and click “Filter Results”
Results will include infants whose birth hospital matches the selected provider, and DOB is within the selected date range
Report lists filter paper data along with the matched hearing results
Review it monthly to confirm all infants have a matched screening
Reports – Birth Summary

- Matches the monthly report submitted to DNSG
- Results filtered by provider and birth date range
- To run your report, enter the search criteria and click “Filter Results”
- Reconcile birth and screen log counts to confirm all infants are correctly updated
- Use the final details from this report to update your monthly report and submit
- Continue to send the monthly report via email
Reports - Exercise

• Run the Birth Log for 9/1/17 to 9/30/17
• Run the Birth Summary for 9/1/17 to 9/30/17
User Administration

HSP Administrators can:

- Create New Users
- Unlock Users
- Reset Passwords
User Administration

- Lists all users in your affiliated facilities
- Has color coded entries for active, inactive and locked users
Add Users

- Click “Add New User”
Add Users

- Enter the user name and full name
- Use the first name initial + last name as the user name for a max of 10 characters
- If the username already exists, add a number at the end, e.g. JSMITH2
Add Users

- Select the user’s role, which should be limited to:
  - “Hearing Screen Provider User”
- Note that HSP Admins can only create HSP users
Add Users

- Select the user’s affiliations
- HSP Admins can only create users with the same affiliations
Add Users

- Enter the mandatory information
- Click “Save”

If the configuration for the user account is correct, a confirmation message will display.
Add Users

The items below require attention:
- It is required to select at least one affiliate.

- If any required data is missing, a red prompt will display on the top of the “User Information” Tab
- Enter the missing data, and click “Save” again
Add Users

- An email will automatically be sent to the new user with their user name and initial temporary password
- The users will have 14 days to setup their new password and security question or the HSP Administrator will need to reset the password for them
- Email is sent from customersupport@neometrics.com
Reset Password

- Click “Reset Password” to reset the password for a user
- A prompt will confirm the reset and an email will be sent to the user with their new temporary password
Unlock User

- Click “Select” to view the user details
- Click through the configuration tabs until you get to the “User Information” tab
Unlock User

- Check the “Active” box
- Click “Save”
Inactivate User

- Uncheck the “Active” box
- Select “Save”
User Administrator - Exercise

• Add new user
• Inactive a user
• Re-active a user
HSP Responsibilities - Review

**Following the PA iCMS HSP Training Course**

- Within 2 weeks of attending this training
  - train the team members
  - complete proficiency exercises
  - coordinate a go-live date with Lisa Hudson
  - participate in weekly HSP Training Support WebEx for a total of 6 weeks

**Go-Live**

- Begin entering all screened and non-screen results for infants delivered by your facility and transferred to your facility within 7 days of the screen
Questions

Lisa Hudson
Lisa.Hudson@Natus.com
800-645-3616 x 4193

Kelly Holland
kholland.pa.gov
717-783-8143

Charu Pahwa
c-chapahwa@pa.gov
717-547-3336

Natus Helpdesk
866-639-3439

Slide deck created with assistance from the Pennsylvania Department of Health.
HL7 Data Transmission

• **HL7** messaging extracts data from your EMR system and send it to iCMS daily.

• To confirm data has loaded via HL7, go to the “Unmatched Hearing Results” grid. All transmitted records should be in this grid.

• Check for the following:
  
  – Status is “Review” as these records need to be edited for missing information then “Submitted”
  
  – Final Refers – Make sure appointment information is loaded or add the appointments if not configured in your EMR system
  
  – Enter non-screened results if they are not entered into your EMR system
  
  – Status is “Saved” as there is missing information still needed before case will match
  
  – Transferred infants must be updated with the correct birth hospital
• Prior to exiting the grid, you **must** update the “Review” and “Saved” records
• If these are not completed and changed to “Submitted” the results will NOT be matched to a filter paper in iCMS
• Compare counts of screens on the grid to your screening log

**EXERCISE**: Go to your grid and update “REVIEW” records
Device File Upload

- Case Management
- User Administration
- Hearing Results Manual Entry
- Unmatched Hearing Results
- Hearing Device File Upload
Device File Upload

- Allows user to upload data from their hearing device into the “Unmatched Hearing Results” grid
- Accepted file formats: HiTrack.txt, Algo5.xml and Audble.xml

**Note**: The file name cannot be more than 200 characters, and the file size cannot be larger than 1MB.
Device File Upload

To upload a file, select the hearing screening provider

Click “Browse” to locate the file to upload

— The device file should either be on your thumb drive, usually (E:), or on a mapped network drive

Click “Upload” to load
Device File Upload

- If the file loads successfully, a confirmation message will display.
- If not successful, an error message will display.
- Files should always have a unique name.
- A warning message will display if it is a duplicate file name.
  - Click “OK” to acknowledge the message.
  - Click “Upload” to continue to process the file.
- Click “Cancel” to stop a file reload.
Device File Upload

• When your file has been loaded, go to the “Unmatched Hearing Results” grid. All records should be in the grid.

• Check for the following:
  – That all records from the file are on the grid
  – Status is “Review” as these records need to be edited for missing information then “Submitted”
  – Final Refers – Make sure appointment information is loaded or add the appointments if not configured in your device
  – Non-screened infants that are not merged from device
  – Status is “Saved” as there is missing information still needed before case will match
  – Transferred infants must be updated with the correct birth hospital
Prior to exiting the grid, you **must** update the “Review” and “Saved” records. If these are not completed and changed to “Submitted” the results will NOT merge to iCMS to a matched filter papers.

Compare counts of screens on the grid to your screening log.

**EXERCISE:** Go to your grid and update “REVIEW” records
## Device File Upload

<table>
<thead>
<tr>
<th></th>
<th>HiTrack</th>
<th>Algo5</th>
<th>Audble</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender/Sex</strong></td>
<td>M, F</td>
<td>M, F</td>
<td>M, F</td>
<td>If the gender is 'Unknown', then the entry will have to be updated manually on the Manual Entry Form.</td>
</tr>
<tr>
<td><strong>Birth Order</strong></td>
<td>S, A, B, C, D, E, F, G, H</td>
<td>N/A</td>
<td>N/A</td>
<td>If left 'Blank' then the field will default to a 'Single' birth.</td>
</tr>
<tr>
<td><strong>Stage</strong></td>
<td>I, O</td>
<td>IP, OP, Inpatient, Outpatient</td>
<td>N/A</td>
<td>If left 'Blank' then the field will default to 'Inpatient'. All Audble screenings will default to 'Inpatient'.</td>
</tr>
<tr>
<td><strong>Acuity</strong></td>
<td>1, 2</td>
<td>0, 1</td>
<td>0, 1</td>
<td>If left 'Blank' then the field will default to 'WBN'.</td>
</tr>
<tr>
<td><strong>Out of State</strong></td>
<td>Y, N</td>
<td>0, 1, Y, N</td>
<td>N/A</td>
<td>Default will be 'No'.</td>
</tr>
<tr>
<td><strong>Birth Hospital</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Default to the HSP Code of the User Uploading the file.</td>
</tr>
<tr>
<td><strong>Screening Provider</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Default to the HSP Code of the User Uploading the file.</td>
</tr>
<tr>
<td><strong>Hearing Results</strong></td>
<td>M, E, 1, 2, B, R, T, D, C, I</td>
<td>3, 2</td>
<td>1, 2, C, I</td>
<td>Hearing results with 'C', 'I' or a not defined value will not create a record. Blank results will also not create a hearing record.</td>
</tr>
<tr>
<td><strong>Risks</strong></td>
<td>RF01, RF02, RF03, RF05, RF07, RF09, RF10</td>
<td>RF01, RF02, RF03, RF04, RF05, RF06, RF07, RF08, RF09, RF10, RF11</td>
<td>N/A</td>
<td>Any Risk Factors not provided will default to 'Not Entered'.</td>
</tr>
</tbody>
</table>