Moving Data from the EHR to the EHDI Registry:
Oregon Pilot Test Using the Hearing Plan of Care (HPoC) Clinical Document Architecture (CDA)

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ABSTRACT

In 2014, Oregon EHDI initiated Phase 2 of a pilot project to receive live newborn hearing screening results electronically from a partner hospital's electronic health records system (EHRs).

BACKGROUND

EHDI has been participating in national efforts towards data standards, interoperability and exchange since 2011. Our goal is to reduce duplicative data entry for our hospital screening partners and improve the timeliness, completeness and quality of the newborn hearing screening data received.

METHODS

Today: Hospital staff screen the baby, enter results into their EHR, and then enter results into birth registry.

Future: Epic EHR sends hearing screening and discharge data to OZ, OZ creates HPoC CDA from EHR data and sends to OHA, OHA receives the HPoC and consumes the content into the Oregon EHDI-IS.

The Change Process:

- **Project Plan.**
  OHSU, OZ Systems and Oregon EHDI collaborated to create the project plan and are now carrying out their respective roles. Additional help comes from Public Health Informatics Institute (PHII) whose staff serve as project managers, Lantana staff who assure conformance with the IHE profile, and CDC stakeholders who provide direction and sponsorship.

- **Data Mapping.**
  EHDI-IS data elements and value sets were mapped to the Integrating the Healthcare Enterprise (IHE) Hearing Plan of Care (HPoC) Profile, OHSU Epic data elements, and OHSU HL7 data elements.

- **Data Flow.**
  In Phase 2, OHSU's EHR (Epic) sends hearing screening results to OZ Systems in an HL7 version 2.6 message format. OZ Systems collects the screening results for an infant and repackages them into a standard HPoC document based on decision support rules used to determine the final screening outcome. Oregon EHDI-IS then receives the data into the newborn hearing screening registry.
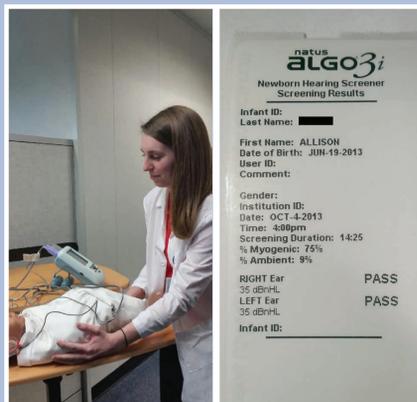
- **Data Validation.**
  Test scenarios were developed to compare data received via HIE with the current method of receiving the data from the Oregon Vital Events Registration System (OVERS). OHSU staff will continue to enter newborn hearing screening results into OVERS throughout the pilot.
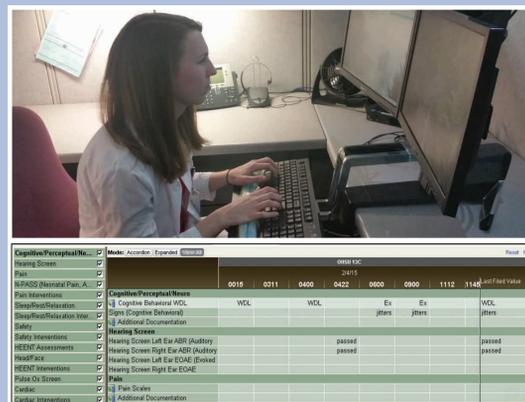
DISCUSSION

Demonstrating a sustainable methodology for EHDI programs to obtain newborn hearing screening data from EHRs could encourage other state EHDI programs to initiate HIE programs of their own. Newborn hearing screening is a Stage 2 Meaningful Use quality measure so hospitals have financial incentives to participate in HIE with EHDI programs. Lessons learned from the Phase 2 pilot will be shared for the benefit of other states engaging in HIE with hospital screening partners.
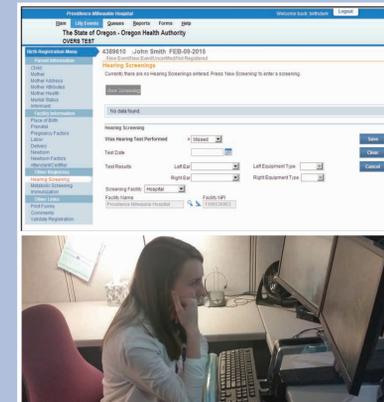
Today

Hospital staff screen the baby with AABR or OAE device

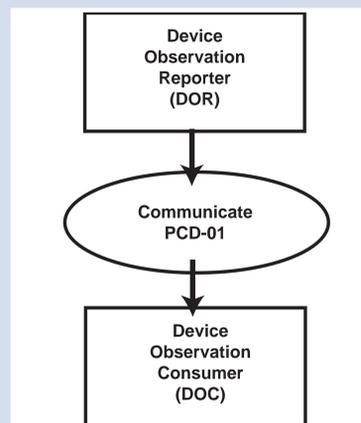**Hospital staff enter hearing screening data into the EHR Newborn Assessment Flowsheet**

Hospital staff enter hearing screening data redundantly into birth registry

Future

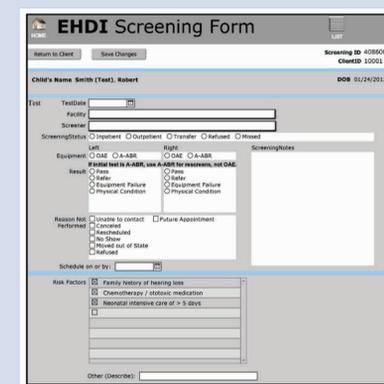**Epic EHR sends hearing screening and discharge data to OZ**

OZ creates the HPoC CDA document from the EHR data and sends to OHA

OHA receives the HPoC and consumes content into EHDI-IS

The Change Process

Partners collaborate to identify and address steps in the process to move hearing screening data from EHR to EHDI-IS

EHDI Data Manager maps EHDI-IS data to HPoC data

Partner hospital Informatician maps data to Epic EHR and HL7

EHDI Data Manager validates the HPoC content by comparing to OVERS birth registry