Use Case Scenario Summary

<table>
<thead>
<tr>
<th>Use Case Scenario Name:</th>
<th>Newborn Screening – Hearing Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use Case to Which Scenario Belongs</td>
<td>Health Information for State</td>
</tr>
<tr>
<td>Sponsor:</td>
<td>Michigan Department of Health and Human Services</td>
</tr>
<tr>
<td>Date:</td>
<td>March 14, 2019</td>
</tr>
</tbody>
</table>

Executive Summary

*This brief section highlights the purpose for the use case and its value. The executive summary gives a description of the use case’s importance while highlighting expected positive impact.*

Early detection of hearing loss in babies and subsequent intervention is key to treatment and improving quality of life for the child.

The newborn screening mandate in Michigan Public Health code section 333.5431 requires hospitals to screen newborn babies for hearing loss and report hearing test and screening results to the Early Hearing Detection & Intervention (EHDI) program at the Michigan Department of Health and Human Services (MDHHS).

**Purpose of Use Case:** The Newborn Screening – Hearing Test Results use case enables electronic messages that contain newborn hearing test results to be sent from hospital electronic health records (EHRs) to MDHHS using Health Level 7 (HL7) messages that are routed through MiHIN.

Overview

*This overview goes into more details about the use case.*

This use case pertains to the transmission of newborn hearing test results from maternity facilities to EHDII. These transmissions assist with the agency’s goal of improving
beneficiary patient health and reducing a patient’s healthcare costs through early detection.

Currently, hearing test and screening results are entered into a hospital’s EHR systems, and most Michigan hospitals have already established their connection to the HIN.

With a large percentage of the births in Michigan covered by Medicaid, the receipt of newborn hearing test and screening results in near real-time from the state’s birthing hospitals is an essential public health function. This use case allows that to occur.

Thanks to this use case, it eliminates the previously used paper forms. This reduces the risk of error and streamlines the reporting workflow which lowers the burden on hospital staff. MDHHS also benefits from more timely and complete reporting.

Diagram

*This diagram shows the information flow for this use case.*

<table>
<thead>
<tr>
<th>Health Provider’s EHR</th>
<th>Data Sharing Organization (DSO)</th>
<th>Michigan Health Information Network (MIHIN)</th>
<th>MDCH Data Hub</th>
<th>EHDI Web Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHR submits the EHR-HL7 (DSO/MIHIN) message</td>
<td>DSO routes the message to MIHIN</td>
<td>MIHIN receives the EHR-HL7 (DSO/MIHIN) message and sends to MDCH DataHub</td>
<td>MDCH DataHub receives the EHR-HL7 (DSO/MIHIN) message</td>
<td>EHDI Test</td>
</tr>
<tr>
<td>EHR receives the acknowledgement</td>
<td>Acknowledgement</td>
<td>Acknowledgement</td>
<td>MDH-11</td>
<td>EHDI Production</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>YES</td>
<td>Format/XML Response</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NO</td>
<td>Error from XML</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>YES</td>
<td>Reject Message MSG = XX</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NO</td>
</tr>
</tbody>
</table>

*Figure 1. Newborn Screening – Hearing Test Results Data Flow*
Regulation

This section describes whether this use case is being developed in response to a federal regulation, state legislation or state level administrative rule or directive.

Legislation/Administrative Rule/Directive:

☑ Yes
☐ No
☐ Unknown

- S.3199 Early Hearing Detection Act 2010

Meaningful Use:

☐ Yes
☐ No
☑ Unknown

Cost and Revenue

This section provides an estimate of the investment of time and money needed or currently secured for this use case.

The MDHHS Data Hub has secured the financing needed for the State of Michigan (SOM) development of this use case interface in its 2015 Health Information Technology (HIT) Advanced Planning Document (APD), Activity 21, and DCH Division of Family and Community Health/Infant Health Unit. MDHHS and MiHIN are contributing to staffing the project, thus project resources have also been secured and include business and technical support resources.

The project financially covers the following components:

- HL7 Message Development, based off the National Standard
- Development of the use case implementation guide
- Technical development and maintenance at MDHHS Data Hub, and destination system
- Piloting of the new message
- EHDI support for development, implementation and piloting activities
Existing infrastructure can be leveraged for implementation of this use case.

Implementation Challenges

This section describes the challenges that may be faced to implement this use case.

This use case requires enhancements to the existing MDHHS Data Hub and to the EHDI systems to consume the EHDI HL7 messages.

The newborn hearing test results message requires the EHR to include both the infant’s and birth mother’s demographics. This might be an issue for some EHRs.

Vendor Community Preparedness

This section addresses the vendor community preparedness to readily participate in the implementation of this use case.

EHR Related Items

- The EHDI message is based on the very common HL7 Observational Results Unsolicited (ORU) message.
- There is a National Reference Implementation Guide published by HL7\(^1\) for this message. The implementation guide from the State of Michigan is based on this guide.
- The EHDI message is very similar to (in many cases simpler than) the Newborn Pulse Ox for Critical Congenital Heart Defect (CCHD) message.

HIE Related Items

- The EHDI message is a standard HL7 message just like the vast majority of the other public health reporting messages.
- The message routing is identical to the Newborn Pulse Ox for CCHD message.

Support Information

This section provides known information on this support for this use case.

Political Support:
- Governor
- Michigan Legislature
- Health Information Technology Commission
- Michigan Department of Health and Human Services or other State of Michigan department
- CMS/ONC
- CDC
- MiHIN Board

Other: State of Michigan Department of Community Health Office of Medicaid Health IT and the MDHHS Division of Family and Community Health/Infant Health Unit

Concerns/Oppositions: None noted

Sponsor(s) of Use Case

This section lists the sponsor(s) of the use case

- MDHHS Medical Service Administration’s Office of Medicaid Health IT
- MDHHS Division of Family and Community Health/Infant Health Unit

Metrics of Use Case

This section defines the target metrics identified to track the success of the use case.

- Number of sites submitting to the EHDI using HL7
- Number of hearing test and screening results sent to the EHDI program at MDHHS through HL7 messaging