Electronic Health Record Adoption

Progress and Impact on Public Health
Electronic Health Record Adoption and Meaningful Use

Stage 1 and 2 Trends
Physician Adoption of EHR Technology

Hospital Adoption of EHR Technology

Physician Health Information Exchange (HIE)

More than half of physicians electronically shared health information with their patients in 2014.

Figure 1: Proportion of physicians who electronically shared health information with patients in 2013 and 2014.

NOTES: * Statistically different from 2013 value at p<0.05. "Electronically share with patients" shows the proportion of unique providers who either exchange secure messages or provide patients access to their electronic health information.

Hospital HIE with Ambulatory and Non-affiliated Hospitals


NOTES: Percent of non-federal acute care hospitals that electronically exchanged laboratory results, radiology reports, clinical care summaries, or medication lists with ambulatory care providers or hospitals outside their organization: 2008-2014

*Significantly different from previous year (p < 0.05).
Physician Demonstration of Meaningful Use (MU)

Percent of Physicians that have Demonstrated Meaningful Use of Certified Health IT | April 2015
54% of Physicians have Demonstrated Meaningful Use of Certified Health IT

Source: CMS EHR Incentive Program data, April 2015 and SK&A Office-based Provider Database, 2013
Hospital Demonstration of Meaningful Use (MU)

Percent of All Eligible and Critical Access Hospitals that have Demonstrated Meaningful Use of Certified Health IT | April 2015

95% of All Eligible and Critical Access Hospitals have Demonstrated Meaningful Use of Certified Health IT

Source: CMS EHR Incentive Program data, April 2015 and CMS Provider of Services File, March 2015
Electronic Reporting to Public Health Agencies (PHA)

Figure 1: Percent of Medicare eligible hospitals that reported on all applicable public health measures in 2014.

Stage 1

Stage 2

N=2,158

N=1,811

SOURCE: Medicare EHR Incentive Program Data through December, 2014.
NOTE: Includes eligible hospitals reporting to the Medicare EHR Incentive Program for Fiscal Year 2014. (N=3,969) Data available in Table A1.
Meaningful Use Public Health Submissions in Michigan
EHR Incentive Programs 2015 and Beyond

2015 - 2017 Modification Rule and Stage 3
Final Rule for Medicare and Medicaid EHR Incentive Programs:

- Changes EHR reporting period in 2015 to 90-day period to accommodate modifications
- Aligns EHR reporting period with full calendar year
- Streamlines program by removing redundant, duplicative and topped out measures
- Modifies patient action measures related to patient engagement
- Modifies public health reporting requirements
Alignment of Meaningful Use

The rule reconciles measures to align 2015-2017 (Modified Stage 2) with Stage 3 to:

- Prepare providers to report Stage 3 criteria in 2018
- Reduce provider burden and create a single set of sustainable objectives that promote best practices for patients
- Enable providers to focus on objectives, which support advanced use of health IT, such as:
  - Health information exchange
  - Consumer engagement
  - Public health reporting

http://www.cms.gov/EHRIncentivePrograms/
Modified Stage 2 Objectives

<table>
<thead>
<tr>
<th></th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Protect Patient Health Information</td>
</tr>
<tr>
<td>2</td>
<td>Clinical Decision Support</td>
</tr>
<tr>
<td>3</td>
<td>CPOE</td>
</tr>
<tr>
<td>4</td>
<td>Electronic Prescribing (eRx)</td>
</tr>
<tr>
<td>5</td>
<td>Health Information Exchange</td>
</tr>
<tr>
<td>6</td>
<td>Patient Specific Education</td>
</tr>
<tr>
<td>7</td>
<td>Medication Reconciliation</td>
</tr>
<tr>
<td>8</td>
<td>Patient Electronic Access (VDT)</td>
</tr>
<tr>
<td>9</td>
<td>Secure Messaging (EPs only)</td>
</tr>
<tr>
<td>10</td>
<td>Public Health and Clinical Data Registry Reporting</td>
</tr>
</tbody>
</table>

http://www.cms.gov/EHRIncentivePrograms/
Stage 3 Objectives

1. Protect Electronic Health Information
2. Electronic Prescribing (eRx)
3. Clinical Decision Support
4. Computerized Provider Order Entry (CPOE)
5. Patient Electronic Access to Health Information
6. Coordination of Care through Patient Engagement
7. Health Information Exchange
8. Public Health Reporting
Public Health Objective
2015-2017 and Stage 3
Public Health Objective: Eligible Professionals (EPs)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Menu Objectives</td>
<td>1 Core Objective</td>
<td>1 Objective</td>
<td>1 Objective</td>
<td>1 Objective</td>
</tr>
<tr>
<td>• Immunizations</td>
<td>• Immunizations</td>
<td>3 Measures</td>
<td>5 Measures</td>
<td>5 Measures</td>
</tr>
<tr>
<td>• Syndromic</td>
<td>• Syndromic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Menu Objectives</td>
<td>3 Menu Objectives</td>
<td>3 Measures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Syndromic</td>
<td>• Syndromic</td>
<td>3 Measures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Cancer</td>
<td>• Syndromic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Specialized Registry</td>
<td>• Specialized Registry</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Requirement**
- Must Select 1 PH measure
- Exclusions apply

**Requirement**
- Must Select 3 of 6 Menu
- No Public Health required
- Exclusions apply

**Requirement**
- Must Select 2 PH measures
- Exclusions apply

**Requirement**
- Must Select 3 PH measures
- Exclusions apply

**Requirement**
- Must Select 2 PH measures
- Exclusions apply

**Requirement**
- Must Select 2 PH measures
- Exclusions apply

*Alternate Specification: An EP scheduled to be in Stage 1 in 2015 may meet 1 measure.*
# Public Health Objective: Hospitals and Critical Access Hospitals

## Stage 1 (2014)

<table>
<thead>
<tr>
<th>3 Menu Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunizations</td>
</tr>
<tr>
<td>Reportable Labs</td>
</tr>
<tr>
<td>Syndromic</td>
</tr>
</tbody>
</table>

## Stage 2 (2014)

<table>
<thead>
<tr>
<th>3 Core Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunizations</td>
</tr>
<tr>
<td>Reportable Labs</td>
</tr>
<tr>
<td>Syndromic</td>
</tr>
</tbody>
</table>

## 2015-2017

<table>
<thead>
<tr>
<th>1 Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunizations</td>
</tr>
<tr>
<td>Syndromic</td>
</tr>
<tr>
<td>Reportable Labs</td>
</tr>
<tr>
<td>Specialized Registry</td>
</tr>
</tbody>
</table>

## Stage 3 2017

<table>
<thead>
<tr>
<th>1 Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunizations</td>
</tr>
<tr>
<td>Syndromic</td>
</tr>
<tr>
<td>Reportable Labs</td>
</tr>
<tr>
<td>Case Reporting</td>
</tr>
<tr>
<td>Public Health Registry</td>
</tr>
<tr>
<td>Clinical Data Registry</td>
</tr>
</tbody>
</table>

## Stage 3 2018+

<table>
<thead>
<tr>
<th>1 Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunizations</td>
</tr>
<tr>
<td>Syndromic</td>
</tr>
<tr>
<td>Reportable Labs</td>
</tr>
<tr>
<td>Case Reporting</td>
</tr>
<tr>
<td>Public Health Registry</td>
</tr>
<tr>
<td>Clinical Data Registry</td>
</tr>
</tbody>
</table>

## Requirement

- Must Select 1 PH measure
- Exclusions apply

## Requirement

- Must meet 3 PH Objectives
- Exclusions apply

## Requirement*

- Must select 3 PH measures
- Exclusions apply

## Requirement

- Must select 4 PH measures
- Exclusions apply

## Requirement

- Must select 4 PH measures
- Exclusions apply

---

*Alternate Specification: Stage 1 eligible hospitals and CAHs may meet two measures to meet the threshold.*
The EP, eligible hospital or CAH is in *active engagement* with a public health agency to submit electronic public health data from CEHRT except where prohibited and in accordance with applicable law and practice.
Active Engagement

Means: The provider is in the process of moving towards sending "production data" to a public health agency or clinical data registry, or is sending production data to a public health agency or clinical data registry.

<table>
<thead>
<tr>
<th>Option 1</th>
<th>• Completed registration* to submit data within 60 days of the start of reporting period AND • Is awaiting an invitation to begin testing and validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 2</td>
<td>• Testing and validation in process, responding to PHA requests within 30 days • Failure to respond twice within the reporting period is failure to meet the measure</td>
</tr>
<tr>
<td>Option 3</td>
<td>• Electronically submitting production data • If issues with production and provider fails to respond to an issue within 30 days on two occasions the provider would fail to meet the measure</td>
</tr>
</tbody>
</table>
### Public Health Reporting Measures 2015 - 2017*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Measure Specification</th>
<th>Maximum Time Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure 1 – Immunization Registry Reporting</td>
<td>The EP, eligible hospital, or CAH is in active engagement with a public health agency to submit immunization data.</td>
<td>1</td>
</tr>
<tr>
<td>Measure 2 – Syndromic Surveillance Reporting</td>
<td>The EP, eligible hospital or CAH is in active engagement with a public health agency to submit syndromic surveillance.</td>
<td>1</td>
</tr>
<tr>
<td>Measure 3 – Specialized Registry Reporting</td>
<td><strong>The EP, eligible hospital, or CAH is in active engagement with a public health agency to submit data to a specialized registry.</strong></td>
<td>2 for EP, 3 for eligible hospital/CAH</td>
</tr>
<tr>
<td>Measure 4 - Electronic Reportable Laboratory Results Reporting</td>
<td>The eligible hospital or CAH is in active engagement with a public health agency to submit ELR results.</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Alternate Specification: An EP scheduled to be in Stage 1 in 2015 may meet 1 measure and an eligible hospital or CAH scheduled to be in Stage 1 in 2015 may meet two measures.

- Eligible Professionals may select 2 different registries
- Hospitals may select 3 different registries
- Cancer reporting is an option for eligible professionals only
- Providers may use electronic submission methods beyond the functions of CEHRT to meet the requirements
  - However, if a standard is named in the ONC standards final rule, it must be used, i.e. cancer reporting, case reporting, antimicrobial use and resistance reporting, health care surveys.
- Clinical Data Registries included
  - Prescription Drug Monitoring Reporting Program
  - National Quality Registry Network inventory
Specialized Registry Split for Stage 3*

*The final rule includes a 60 day comment period on the Stage 3 portion of the rule.

<table>
<thead>
<tr>
<th>Case Reporting</th>
<th>Public Health Registry</th>
<th>Clinical Data Registry</th>
</tr>
</thead>
<tbody>
<tr>
<td>“reportable conditions” as defined by the state, territorial, and local PHAs to monitor disease trends and support the management of outbreaks</td>
<td>A registry that is administered by, or on behalf of, a local, state, territorial or national public health agency and which collects data for public health purposes.</td>
<td>Administered by, or on behalf of, other non-public health agency entities</td>
</tr>
<tr>
<td></td>
<td>4 different registries can be selected to meet this measure</td>
<td>4 different registries can be selected to meet the measure</td>
</tr>
</tbody>
</table>
# New Opportunities Identified in Michigan

<table>
<thead>
<tr>
<th>MDHHS Public Health System/reportable condition</th>
<th>Meets Case Reporting Definition</th>
<th>Meets Public Health Registry Definition</th>
<th>Ready to Receive from EH or EP</th>
<th>Plan to Receive from EH or EP</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDSS/Communicable Disease</td>
<td>Yes</td>
<td>Yes</td>
<td>Not at this time, receiving ELRs from hospitals</td>
<td>Yes, in future</td>
</tr>
<tr>
<td>Michigan Birth Defect Registry/Birth Defects</td>
<td>No</td>
<td>Yes</td>
<td>Yes, EPs only</td>
<td>Yes for EH in future</td>
</tr>
<tr>
<td>Michigan Cancer Registry</td>
<td>No</td>
<td>Yes</td>
<td>Yes, Eps only</td>
<td>Yes for EH in future</td>
</tr>
<tr>
<td>Michigan Birth Registry/ Birth Information</td>
<td>No</td>
<td>Yes</td>
<td>Not at this time</td>
<td>Yes, in future for both EH and EP</td>
</tr>
<tr>
<td>Michigan Death Registry/Death Information</td>
<td>No</td>
<td>Yes</td>
<td>Not at this time</td>
<td>Yes, in future for both EH and EP</td>
</tr>
<tr>
<td>Newborn Screening Critical Congenital Heart Defect Information</td>
<td>No</td>
<td>Yes</td>
<td>Yes for EH</td>
<td>No plans for EP</td>
</tr>
<tr>
<td>Early Hearing Detection and Intervention Information</td>
<td>No</td>
<td>Yes</td>
<td>Not at this time</td>
<td>Yes, in future for both EH and EP</td>
</tr>
</tbody>
</table>

EPs select 2 out of potentially 8 public health systems
- Immunizations
- Syndromic
- MDSS case reporting
- Cancer reporting
- Birth Defect Reporting
- Birth reporting
- Death reporting
- EHDI

Hospitals select 3 out of potentially 10 public health systems
- Immunizations
- Syndromic
- MDSS case reporting
- Cancer reporting
- Birth Defect Reporting
- Birth reporting
- Death reporting
- ELRs (MDSS and cancer)
- Newborn screening
- EHDI
National Standard Birth Defects Case Report

Status of Effort Develop an Official National Standard
Objective of the Effort

- Improve the timeliness, accuracy and efficiency of birth defects case reports from health care providers.
- Enable tracking information on the health encounters of children with a reportable condition
Methods

- Exploit National Efforts at Health Information Exchange
- Model after National Standards for Public Health Reporting
- Leverage NBDPN to Find Universal Requirements
- Apply with HL7 to Establish a National Standard
We don’t have real-time case reporting in Michigan

.....because it takes too long
Environmental Developments

- **Meaningful Use**
  - Birth Defects Case Reports now a Certification Item for Hospitals
  - Public Health Case Reporting now lumped into a Single MU Measure.
- **Rapid Evolution of Standards**
  - CCDA
  - FHIR

*Fast Healthcare Interoperability Resources*
Quick Review of Happenings in Michigan

- Michigan Health Information Initiatives
- Transport
- Funding for the Effort
  - Chronic Disease Registry
Michigan HIE

Doctors & Community Providers

SUB-STATE HIEs

eHealth Exchange

MDCH Data Hub

MSSS

Medicaid

State LABS

Data Warehouse
Infrastructure

- Registration
- Validation
- Message Management
- Process for Incorporating Data
Announcements

- FAQs with Guidance on Switching EHR Vendors
- 2016 Payment Adjustment Fact Sheet for Hospitals Available
- How to Register for an OID
- Medicare Eligible Hospitals: Take Action by April 1!
- July 1, 2015 Deadline for 2016 Hardship Exemption

Overview for Professionals
Program introduction with links to guides & detailed information.

Meaningful Use (MU) Overview
Introduction to MU, AII, EHR certification and more

Overview for Hospitals
Hospital specific program guides, attestation dates and links.

Public Health Reporting
Public Health Testing for Meaningful Use and Other Reporting
reasons for exclusion in Michigan. For example, providers in Stage 1 of MU who qualify for the exclusion for submitting data to the immunization registry should submit syndromic data in order to meet the public health requirement for MU.

Click the system name in the table below to obtain more detailed system-specific information and instructions on how to complete the MU requirements.

<table>
<thead>
<tr>
<th>System Name</th>
<th>Meaningful Use</th>
<th>Available Since</th>
<th>Stage 1</th>
<th>Stage 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>EH</td>
<td>EH</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>≧ 1 test</td>
<td>Ongoing submission</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>submission</td>
<td></td>
</tr>
<tr>
<td>Michigan Care Improvement Registry (MCIR)</td>
<td>Immunization Registry</td>
<td>Fall 2010</td>
<td>≧ 1 test</td>
<td>Ongoing submission</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>submission</td>
<td></td>
</tr>
<tr>
<td>Michigan Cancer Surveillance Program (MCSP)</td>
<td>Cancer Registry</td>
<td>March 1, 2014</td>
<td>N/A</td>
<td>Ongoing submission</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Michigan Birth Defects Registry (MBDR)</td>
<td>Specialized Registry</td>
<td>March 1, 2014</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ongoing submission</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michigan Syndromic Surveillance System (MSSS)</td>
<td>Syndromic Surveillance</td>
<td>August 1, 2013</td>
<td>≧ 1 test</td>
<td>Ongoing submission</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>submission*</td>
<td></td>
</tr>
</tbody>
</table>

*MSSS is not accepting data from the following provider types, and therefore an exclusion is permitted for MU: Dentists, Dental Surgeons, Podiatrists, Optometrists/Ophthalmologists, Chiropractors, and Certified Nurse-midwives. For more information, see the MSSS Testing and Submission guide at [https://www.michiganhealthit.org/public-health/mss/](https://www.michiganhealthit.org/public-health/mss/).

**Public Health System Availability for Other Entities**

Providers who wish to test and submit information electronically to a public health database but are ineligible for or do not wish to participate in the Medicaid or Medicare EHR Incentive Programs are still required to register in the HSTR using the button above.

The table below lists the Public Health systems that are available for reporting that is not meaningful-use related.
Submit Birth Defects Data to Michigan Birth Defects Registry

Birth defects are reportable in Michigan when diagnosed in stillborns, infants and children under the age of two years. Birth defects case reports are included in the statewide birth defects registry maintained by the Michigan Department of Health and Human Services (MDHHS). Reportable conditions include congenital, structural, oncologic and metabolic disorders; malignant or genetic conditions; and certain exposures in utero affecting the fetus. Birth defects surveillance is required by Michigan Act 236 of 1988 and associated administrative rules. Hospitals, clinical laboratories, health clinics, physicians, genetics counselors and other health professionals and health facilities involved in the diagnosis or treatment of children with birth defects are required to report. MDHHS has developed specifications and procedures for reporting birth defects through an electronic health record system (EHR). An EHR that can report birth defects diagnoses to DCH through this mechanism will be certified as reporting to a Specialized Registry, which is a Stage 2 Meaningful Use menu item. Procedures and specifications leverage the Clinical Document Architecture.

Meaningful Use and MBDR

Meeting MBDR’s Ongoing Submission criteria will:

- Allow Eligible Professionals (EPs) to meet Menu Measure 6 of Stage 2 Meaningful Use (MU) (Specialized Registry)

Announcements

As of May 13, 2014, MBDR is available to receive birth

Instructions:

Stage 2 (Recall that this MU measure is only introduced for EPs in Stage 2.)

1. You have 60 days from the start of your EHR Reporting Period (Any calendar quarter in 2014, a full calendar year in 2015 and beyond) to register your intent in the Health System Testing Repository. Failure to do so by the 60-day deadline will mean that you will not be able to successfully attest to the Specialized Registry MU Stage 2 Meaningful Use criteria.
Clinical Document Architecture (CDA)

- Health Level Seven (HL7) standard used for clinical document exchange
- Standard required for meaningful use:
  - Provide clinical summaries to patients
  - Provide summary of care for transition of care (TOC) or referrals (CCD)
  - Report cancer cases to a public health cancer registry
  - Report specific cases to a specialized registry (birth defect cases)
  - Submit electronically Clinical Quality Measures
- HL7 Message vs. HL7 CDA
  - HL7 Message - not a CDA, transient, snippets of data (syndromic, lab reporting)
  - HL7 CDA - longitudinal, patient events from multiple providers
<table>
<thead>
<tr>
<th><strong>Patient</strong></th>
<th>Baby Newborn</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date of birth</strong></td>
<td>October 5, 2013</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td>Female</td>
</tr>
<tr>
<td><strong>Place of Birth</strong></td>
<td>Beaverton, OR 97867, US Telecom information not available</td>
</tr>
<tr>
<td><strong>Contact info</strong></td>
<td>Primary Home: 1000 Home Drive Blue Bell, MA 02368, US Tel: (555)355-1212</td>
</tr>
<tr>
<td><strong>Account #</strong></td>
<td>998901.1.113883.19.5,99999.2 216.840.1.113883.4.1</td>
</tr>
</tbody>
</table>

| **Document Id**    | 2223 2.16.840.1.113883.3.564.1492        |
| **Document Created:** | October 7, 2013                             |
| **Performer**      | ETHAN NEWQUIST                             |
| **Author**         | EMORY WADDINGTON                          |
| **Contact info**   | Work Place: 8762 STONERIDGE CT STE 190, PASKENTA, CA 96074 |
| **Encounter Id**   | 3733dae9-2013-b04b-05d4-001A64958C30       |
| **Encounter Date** |                                           |
| **Personal Relationship** | Mother: Mrs. Abigail Ruth from January 1, 1999 to October 25, 2011 |
| **Contact info**   | 17 Daws Rd. Blue Bell, MA 02368, USA Tel: (999)355-1212 |
| **Personal Relationship** | Father: Mr. Frank II Jones                |
| **Contact info**   | Primary Home: 1357 Amber Drive Beaverton, OR 97006, US Tel: (555)355-2006 |
| **Next of kin**    | Grandfather: Mr. Frank I Jones from January 1, 1959 to October 25, 2011 |
| **Contact info**   | 17 Daws Rd. Blue Bell, MA 02368, USA Tel: (999)355-1212 |

XML Code Transformation to Human Readable
Birth Defect CDA and the CCD CDA

Birth Defect and CCD Common Elements

<table>
<thead>
<tr>
<th>Child Info (Header)</th>
<th>Birth Defect Diagnosis</th>
<th>Coded Results</th>
<th>Newborn Delivery</th>
<th>Event Care Plan</th>
<th>Labor and Delivery H and P</th>
<th>Payer Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Demographics</td>
<td>Encounter Diagnosis</td>
<td>Diagnostic Tests</td>
<td>Active Problems</td>
<td>Treatment Plan</td>
<td>Social History</td>
<td>Payment Sources (3rd party, self pay, etc.)</td>
</tr>
<tr>
<td>Referring Provider</td>
<td>Diagnosis Date</td>
<td>Laboratory Tests</td>
<td>Procedures</td>
<td>Medications</td>
<td>Pregnancy History</td>
<td>Payer Roles (Self, Family Dependent)</td>
</tr>
<tr>
<td>Birth Facility</td>
<td>Diagnosis Confirmation</td>
<td>Medications</td>
<td>Immunizations</td>
<td>Orders</td>
<td>Goals</td>
<td></td>
</tr>
<tr>
<td>Guardian Info</td>
<td></td>
<td>Vital Signs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Birth Defect and CCD Common Elements
DQA Testing and Validation Purpose

- Ensure providers have entered the required health information into the EHR
- Ensure the EHR technology is set up to electronically extract the information according to MDCH’s HL7 Implementation Guides
- Ensure the data sent is what MDCH is expecting before adding the data into the registry/system
- Provide a tool to monitor and evaluate electronic submissions
Michigan Health System Testing Repository

The Michigan Department of Health and Human Services has been charged with collecting and recording information on Eligible Professionals and Eligible Hospitals that test with one of the Public Health Meaningful Use measures for auditing purposes. This system will allow you to enter the required information and inform the public health system of your request to test for Meaningful Use.

Create a new account.

Log in with existing account.
HSTR and Validator Interface

- **HSTR**
  - Provider Registers
  - Sends Registration Information

- **Validator**
  - Checks Registration
  - Validates
  - Sends Test Information

- **HSTR**
  - Records Testing Status
  - Sends Status Letter to Provider
Pre-Production DQA Validation Cycle

- Provider Generates Corrected Messages
- MDCH Team Evaluates (DQA)
- Team Provides Feedback
- Provider Remediates Issues
- Submit Messages/C DAs in Accordance with IG
## Levels of Validation

<table>
<thead>
<tr>
<th>Pre-production (MiHIN URL)</th>
<th>Production (MiHIN)</th>
<th>Data Quality Assurance (DQT)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Get it right while the Vendor is AVAILABLE</strong></td>
<td><strong>Keep the Stream Going</strong></td>
<td><strong>Hold and Fix what you can</strong></td>
</tr>
<tr>
<td>• Structure and Content must conform to the IG</td>
<td>• Validate for Structure</td>
<td></td>
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<td>• All required data elements</td>
<td>• Is it what it says it is?</td>
<td></td>
</tr>
<tr>
<td>• All required code sets and values (i.e. Birth Defects has 174 data elements and 90 different value sets)</td>
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<td>• Provides insight for data quality improvement</td>
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Production (MiHIN): Get it right while the Vendor is AVAILABLE.

- Structure and Content must conform to the IG.
- All required data elements.
- All required code sets and values (i.e., Birth Defects has 174 data elements and 90 different value sets).

Hold and Fix what you can:

- Allows business to set the data quality threshold.
- Enables common coding errors to be mapped to the correct code set.
- Provides insight for data quality improvement.

Pre-production (MiHIN URL): Keep the Stream Going.

- Validate for Structure.
- Is it what it says it is?
- Return unreadable garbage.
Message Archive Management

- Maintain original documents in a searchable format
- Store and search any document type
  - XML, Word, PDF, HL7, CSV, Excel, etc.
- User selected search fields
- Derived search fields
  - Functions of other data, joins to related data,
  - DB, File, Network services
- Documents viewed or pulled from repository as original data or as human-readable versions
- Cross link document results
  - Validation records, other records
Accomplishments Specific to Birth Defects
Implementation Guide

- Initiative began in 2012
- Developed draft message in 2013 and 2014
- Proposed to HL7 PHER in March 2014
  - Public Health and Emergency Response
- Published/Balloted by HL7 in January 2015
- Comments addressed through August
- PHER approval of DSTU in August
- Finalizing Revisions to IG
  - Target publication in December
Wide Range of Comments

- Clarifications
- Value Sets
- Protocols
- Consistency/Comparability
- Harmonization with Birth and Death Messages
- Upgrade from CDA 2.0 to CCDA
Development of the Guide

- NBDPN EHR/HL7 Work Group
- Universal list of registry items
- Universal list of case definitions
- Cross walk for ICD-9, ICD-10, BPA to SNOMED
XML - Database Integration in Registry

CCD/CDA Input

Document Repository

XML

HL7

doc

Word

xlsx

Shred/Parse XML

EDRS

EBC

MBDR

Warehouse

XML Output
Working Toward a Pilot

- Hoping for a Combined Pilot
  - Modifications for Michigan
  - Genesis Systems/Epic
Public Health Messaging
What is Coming On-board

- Cancer Reporting
  - On-Boarding Now
- Draft Standards for Live Birth/Fetal Death
  - Connectathon - Feasibility
- Draft Standards for Death
  - Being Used in Utah
Live Birth and Fetal Death Message

- Received Funding to Explore
- Extract Data from Hospital EHR
- Populate Birth Registry System
- Enable Completion and Certification
- String of Messages as Data Arrives in the EHR
For Birth/Fetal Death and Death Reporting

- Messaging Standards (HL7 V2.5.1) DSTU
- Document Standards (HL7 CDA) DSTU
- Content Profiles (IHE)
- Data Models (HL7)
- Functional Profiles (HL7)

http://www.cdc.gov/nchs/nvss/about_nvss.htm#evital_update
Michigan Activities
Live Birth and Mortality

- Gap Analysis
- Locating Data Within the CDA/CCDA
- Identifying Appropriate Value Sets
- Message Management
- Incorporation into Official Data
  - Certification
Death Message

- HL7 Standard
- Vendor Builds a Screen to Organize Key Data
- Physician Completes
- Message Pushed to State
- Integrates EHR with State Reporting System
- Concept working for Hospital Deaths in Utah
Opportunities with Vital Statistics

- Pilot Medical Death Message
- Leverage FHIR to Inform Physician
- Push Death Data to Hospitals/Providers
  - Incentivize EDR use
Increasing Use by Medical Certifiers

- Current direct medical use is low
- Involving doctors/hospitals is important
  - Need to improve quality of cause
  - VIEWS system can facilitate
- Need to spread information
- Need to make EDR a useful tool for doctors
- Hope to reach at least 50% direct medical
83 percent of doctors sign 11 percent of deaths
5 percent of doctors sign 73 percent of deaths
Exploring Possibilities

- Develop FHIR Death App
- Promote Use by Physicians with FHIR Ready Software
- Coordinate with NCHS on VIEWS Integration with FHIR App
- Assess potential use of FHIR for Birth Defects
So, now what?
Next Steps

- Finalize and Publish the Standard
- Develop Messaging that Targets Providers
- Explore Revisions to Address Hospital Reporting
- Pilot with Vendor and Interested Physicians
  - Leverage Birth Certification Message
- Explore Connectathon with NCHS and Vendor(s)
  - Promote and Test
- Revise Based on testing and Establish a Normative Standard
  - Target date - 2018
- Explore use of FHIR App for Birth Defects Case Reporting
The Path is Clear
<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glenn Copeland, MBDR</td>
<td>Altarum Staff</td>
</tr>
<tr>
<td>Lorrie Simmons, MBDR</td>
<td>Laura Rappleye, Altarum Lead</td>
</tr>
<tr>
<td>Jetty Alverson, MBDR</td>
<td>Lisa Streffey, Project Manager</td>
</tr>
<tr>
<td>David Westover, MBDR</td>
<td>Ramya Kommareddi, Developer</td>
</tr>
<tr>
<td>Tina Scott, MDCH Data Hub</td>
<td>Ray Humphrys Developer</td>
</tr>
<tr>
<td>James Noland, MDCH Data Hub</td>
<td>Michael Yaskanin, Business Analyst</td>
</tr>
<tr>
<td>Jeff Shaw, MDCH Data Hub</td>
<td>Rachelle May-Gentile, Business Analyst</td>
</tr>
<tr>
<td>Suchi Inturi, MDCH Data Hub</td>
<td></td>
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</table>
NBDPN HL7/EHR Work Group

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- Fernando Arena

- Jane Correia
- Marlene Anderka
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