Clinical Information Exchange: 
Leveraging Statewide HIE in the 
Admission Discharge Transfer (ADT) 
Messaging Process

John Bialowicz 
Manager – Electronic Business Interchange Group 
Blue Cross Blue Shield of Michigan

Background

• Blue Cross Blue Shield of Michigan strives to provide high quality health care delivery for our members. In today’s environment, that means an increasing reliance on data.

• All of the rating measures, STARS, HEDIS, RMRA depend on data and analytics to measure the effectiveness and quality of care provided.

• Historically for insurers, the primary source of this data was claims. While valuable, claims data has limitations. It is retrospective, not real-time, so the ability to affect patient care is limited.
  – In most cases, the episode of care occurs well before the claims adjudication process, so there is a significant time lag.

• We are expanding our pursuit of clinical data to:
  – Improve timely access to actionable data, improve patient care, reduce cost
Abbreviations

• ADT: Hospital admission, discharge, transfer and emergency department visits
• PO: Physician organization
• MiHIN: Michigan Health Information Network Shared Services
• HIE: Health Information Exchange
• QO: Qualified Organization

We receive all ADT messages generated for our members across all lines of business (PPO, HMO, Medicare and Medicaid):

• The primary objective of receiving ADT messages was to understand admission, discharge and length of stay for members across 18 hospitals. This has evolved to include:
  – **Utilization Review**—a source for the case manager application to trigger BCBSM engagement. The ADT message improves our case managers' ability to engage with patients at the beginning of a hospital stay, rather than days after admission (and possibly after discharge).
  – **Physician Organizations** receive ADT notifications for their members:
    • Improves notification rate for all emergency & inpatient visits
    • Helps physician coordinate admission and follow up after discharge
Michigan’s statewide health information exchange strategy

- Employs a public-private model vs. only complete state control
- Emphasizes common data sharing use cases and multi-stakeholder participation (hospitals, physicians, health plans, state government)
- Promotes the use of national standards & public transparency (via health information technology commission)
- Leverages public health & meaningful use
- Established a designated nonprofit entity to interconnect networks of networks (MiHIN Shared Services)
- Relies on qualified health information organizations such as Michigan’s sub-state HIEs to connect providers

Network of Networks:

- MiHIN Statewide Shared Services
- Health Plan QOs (more coming)
- Immunizations
- Health Plan QOs (more coming)
- PIHPs (8)
- Federal
- Simple Data Sharing Organizations
- Consumer QOs (more coming)
- HIE
- Qualified Organizations (QOs)
- Doctors & Health Systems
- Virtual QOs
- Pharmacies (more coming)
- Sponsored Organizations

Single point of entry/exit for state
Supports seamless exchange

1) Patient goes to hospital which sends message to DSO then to MiHIN
2) MiHIN checks patient-provider attribution and identifies providers
3) MiHIN retrieves contact and delivery preference for each provider from the health provider directory
4) Notifications routed to providers based on electronic address and preferences

ADTs being shared throughout the state

- By November 2014, MiHIN received 13.5 million ADT messages per month from hospitals and sent 2.5 million ADT notifications to providers per month.
- More than 85 hospitals and over 30 physician organizations participate in the statewide ADT initiative affecting more than 3 million Michigan citizens.
- As of March 2015, MiHIN estimates that more than 95% of all hospital admissions in Michigan are now being sent through the statewide ADT notification service.
Sample business case

### Reduction in potentially avoidable readmissions and post-discharge ED visits

<table>
<thead>
<tr>
<th>Reduction Rate</th>
<th>5.0%</th>
<th>7.0%</th>
<th>10.0%</th>
<th>12.0%</th>
<th>15.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Benefit Savings</td>
<td>$2.5M</td>
<td>$4.0M</td>
<td><strong>$6.1M</strong></td>
<td>$7.6M</td>
<td>$9.8M</td>
</tr>
</tbody>
</table>

**Assumptions:**
- Only potentially avoidable readmissions are affected
  - *6,158 (60%) avoidable re-admissions per year.*
- Physicians currently receive notifications for 25% of admissions
- Physicians *will act on 75% of new notifications*
- Emergency visits within 7 days of discharge will decrease at the same rate as readmissions

*Expected reduction in potentially avoidable readmission rates: 10%* Based on preliminary data from health information exchange implementation in Maryland

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**Why is a “statewide” notification service needed?**

- A physician organization’s patient panel typically uses more than 100 hospitals in any given time period
- Neither POs nor the Michigan Blues have an electronic, real-time communication process in place with every hospital
- Stakeholders need a single access point to send and receive data and notifications
Payer incentives for statewide health information exchange

Hospital value-based contracts
Physician Group Incentive Program

2014
- Hospitals – Send ADT notifications to statewide service via MiHIN
- Physicians – Send Patient-Provider Attribution (PPA) to MiHIN, receive ADT alerts

2015
- Hospitals – Conformance with ADT spec, send Medications
- Physicians – Integrate ADTs into workflow, receive Medications
- Other Providers (SNFs, etc.) – Send ADT notifications

2016
- Medications, potentially quality measures
- Integrate ADT, begin Medication Reconciliation

TBD
- Medications, potentially quality measures

2015 hospital incentives

Measure objectives:
- Recognize continued participation in the statewide ADT notification service
- Expand the data available to caregivers for effective care transitions and population management
- Support hospital efforts to implement and leverage CMS Stage 2 Meaningful Use requirements to improve care transitions

Measure requirements:
- Continued transmission of all ADT notifications with all core data fields
- Transmit ADT notifications with enhanced data fields (e.g., diagnosis) utilizing HL7 standard format and coding requirements
- Transmit a summary of care record with all discharge medications listed
2015 physician incentives

Measure objectives:
– Increase number of physician organizations participating in the MiHIN statewide service
– Support PO efforts to integrate notifications into their care processes

Measure requirements:
– Send valid, updated patient lists into the MiHIN Active Care Relationship Service on a monthly basis*
– Have a mechanism to translate ADT data from the MiHIN statewide service into easy-to-use format
– Have a process to incorporate ADT information from MiHIN into the care processes of practitioners*

*Also supported by our PCMH program

MiHIN statewide use cases

- Public Health Reporting
- Health Provider Directory
- Push Alerts & Notification
- Pull/Query Care Summaries

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MiHIN upcoming use cases

• Pilots: 1st QTR 2015
  • **Medication Reconciliation** - medication list when discharged from hospital and shared with PO, PCP and pharmacist with active care relationship with the patient to ensure medication adherence.
  • **Newborn Screening** - send newborn screening results for critical congenital heart disease to state’s public health department.
  • **Request Immunization History** - request individual’s history from state’s immunization registry.

• Pilot candidates
  • **Exchange Care Summary** - Continuity of care document that includes all of the activities during a hospital stay (medication list, labs, notes, results, etc.)
  • **Cross QO Query** - This use case provides a common way for qualified organizations to query for documents across the state.
  • **Common Key Service** - provide a unique patient identifier across all qualified organizations leveraging the State of Michigan’s Master Patient Index.

Challenges

- Data completeness and quality
- Ability of physician organizations to consume an ADT message
- Prioritization of available use cases
- QO relationships
- Funding
Questions

APPENDIX

- MiHIN background
- ADT additional information
Shared by whom?

- The MiHIN network is shared by an evolving ecosystem of qualified organizations:
  - HIE’s that connect providers
  - Health plans
  - Governments
  - Some vendors
  - Consumer application vendors (future)
  - New data services and solutions that emerge

Legal infrastructure for data sharing
Foundational principles of the ADT service

- Hospitals should only need to communicate information once, regardless of the number of recipients
- Hospitals can send data via the channel of choice, as long as it connects to the statewide service
- Practitioners should be able to receive the information in the manner they choose to support their clinical processes
- Report information should meet standard expectations related to common data definitions, fields etc.

BCBSM business application of ADT messages

1. Hospital generates an ADT message
2. MiHIN filters messages based on insurer identified in ADT message
3. BART
   - Normalizes the ADT data (e.g., M=male)
   - Does member validation
   - Creates reports & an XML-format of the ADT message for eligible members
4. Reports:
   1. Census
   2. Admission/Discharge
   3. Member not found
   4. Conformance/Frequency
5. Send extract for specific groups

Utilization Management integration of ADT messages into existing workflow:
BCBSM nurses review the recommended treatment and assist in providing better health care planning. Specific triggers in CaseMan application for engagement are exceeding length of stay parameters, or a readmission. Real-time ADT messages improve ability to engage during visit, versus existing process that generates triggers days after admission (and possibly discharge).
## Core ADT Data

**Tier 1 - Core Data**

A. Hospitals provide the following data in each message to ensure accurate routing.

<table>
<thead>
<tr>
<th>1. Sending Facility (MSH-4)</th>
<th>1. Patient Zip Code (PID-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Patient Last Name (PID-5.1)</td>
<td>2. Patient Social Security Number (PID-19)</td>
</tr>
<tr>
<td>3. Patient First Name (PID-5.2)</td>
<td>3. Visit Number (PV1-19)</td>
</tr>
<tr>
<td>4. Patient Middle Initial or Name (PID-5.3)</td>
<td>4. Insurance Company ID (IN1-3)</td>
</tr>
<tr>
<td>5. Patient Date of Birth (PID-7)</td>
<td>5. Insurance Company Name (IN1-4)</td>
</tr>
<tr>
<td>6. Patient Sex (PID-8)</td>
<td></td>
</tr>
</tbody>
</table>

B. Hospitals provide all possible values that appear in the following data fields within an ADT message and map the corresponding values to the statewide ADT notification service specified value set, based on the Health Level 7 (HL7) version 2.5 standard.

<table>
<thead>
<tr>
<th>Map to specified value sets</th>
<th>Hospital-defined (no mapping)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Patient Sex (PID-8)</td>
<td>1. Sending Facility (MSH-4)</td>
</tr>
<tr>
<td>2. Patient Race (PID-10)</td>
<td>2. Hospital Service (PV1-10)</td>
</tr>
<tr>
<td>3. Ethnic Group (PID-22)</td>
<td>3. Patient Type (PV1-18)</td>
</tr>
<tr>
<td>4. Patient Class (PV1-2)</td>
<td>4. Discharge Disposition (PV1-36)</td>
</tr>
<tr>
<td>5. Admission Type (PV1-4)</td>
<td></td>
</tr>
<tr>
<td>6. Admit Source (PV1-14)</td>
<td></td>
</tr>
<tr>
<td>7. Insured's Relationship to Patient (IN1-17)</td>
<td></td>
</tr>
<tr>
<td>8. Diagnosis Type (DG1-6)</td>
<td></td>
</tr>
<tr>
<td>9. Observation Result Status (OBX-11)</td>
<td></td>
</tr>
<tr>
<td>10. Insurance Company ID (IN1-3)</td>
<td></td>
</tr>
<tr>
<td>11. Insurance Company Name (IN1-4)</td>
<td></td>
</tr>
</tbody>
</table>

## Enhanced ADT Data

**Tier 2 - Enhanced Data**

Hospital populates the following fields utilizing the coding standards defined in the statewide ADT notification specification. There are three groupings: 1) Facility Identifiers; 2) Diagnosis Codes; and 3) Physician Identifiers. To achieve credit, hospitals must provide data in the defined format for two of the three groups.

**Data Element (ADT segment-field): Definition**

**Facility Identifiers – Object Identifiers (OIDs)**

1. Sending Facility Hospital (MSH-4.1): Object Identifier (OID) to uniquely identify the hospital sending message
2. Sending Facility Health System (MSH-4.2): OID to uniquely identify the health system sending message

**Diagnosis Codes – ICD9 / ICD10 codes**

1. Diagnosis Code ID (DG1-3.1): ICD9 or ICD10 code specifying the diagnosis
2. Diagnosis Code Text (DG1-3.2): Human readable term for diagnosis, corresponding with code in DG1-3.1
3. Diagnosis Code Name of Coding System (DG1-3.3): Name of coding system (e.g. ‘ICD9’ or ‘ICD10’)

**Physician Identifiers – National Provider Identifier (NPI) codes**

1. Patient Primary Care ID (PD1-4.1): Use NPI to enable matching with ADT service
2. Attending Doctor ID (PV1-7): Use NPI to enable matching with ADT service
3. Referring Doctor ID (PV1-8): Use NPI to enable matching with ADT service
4. Consulting Doctor ID (PV1-9): Use NPI to enable matching with ADT service
5. Admitting Doctor ID (PV1-17): Use NPI to enable matching with ADT service
Quality Reporting Systems

- Mandatory quality reporting programs
  - HEDIS – Healthcare Effectiveness Data and Information Set
  - Medicaid – Adult and Child Core Measure Sets
  - eCQM – electronic Clinical Quality Measures
    "penalties begin 2015"
  - PQRS – Physician Quality Reporting System
    "penalties begin 2015"
  - QRS – Quality Rating System
    "new for 2015"

- Significant overlap of measures used
- Burden of collecting, calculating, and submitting measures is typically on payers and Physician Organizations (POs)
- MiHIN developing unifying service to improve quality reporting

Alignment of Quality Measures

<table>
<thead>
<tr>
<th>Set</th>
<th># of Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>PQRS</td>
<td>254</td>
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<tr>
<td>EP eCQM</td>
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<td>Medicaid Core Sets</td>
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<tr>
<td>HEDIS</td>
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<tr>
<td>QRS</td>
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<tr>
<td>Overlap</td>
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