Use Case Summary

Use Case Name:	Admission, Discharge, Transfer Notifications
Sponsor:	Michigan Health Information Network Shared Services and Blue Cross Blue Shield of Michigan
Date:	July 6, 2016

Executive Summary

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

Admission, Discharge, Transfer (ADT) notifications are widely regarded as a keystone to improving patient care coordination through health information exchange. ADT notifications are sent when a patient is admitted to a hospital, transferred to another facility, or discharged from the hospital. Notifications are then sent to update physicians and care management teams on a patient's status, thus improving post-discharge transitions, prompting follow-up, improving communication among providers, and supporting patients with multiple or chronic conditions.

ADT notifications also support the identification of patients who are frequent or high users of the health care system. This allows providers to steer those patients toward clinical and non-clinical interventions, reducing unnecessary overutilization by preventing avoidable emergency department visits and hospital readmissions.

Purpose of Use Case: This use case supports sending notifications on the status of patients' care transitions to every care team member interested in that patient.

Overview

This overview goes into more details about the use case.

When a patient is admitted to a hospital, transferred, or discharged, an ADT notification is created by the hospital's electronic health record (EHR) system. The hospital EHR system sends the ADT notification through a trusted data-sharing organization (TDSO) to the health information network (HIN), which operates the ADT Notification service.

The HIN then looks up the patient and the providers who are on that patient's care team using the Active Care Relationship Service (ACRS). ACRS contains information on which providers (e.g. attending, referring, consulting, admitting, primary care physician, etc.) are interested in that patient's health. The HIN also looks up the providers in the statewide Health Provider Directory (HPD) to obtain the delivery preference for each of those providers and to determine the electronic endpoint and "transport" method by which the providers wish to receive ADT notifications (e.g. via Direct Secure Messaging, Health Level Seven [HL7] over LLP, etc.) for their patients.

Based on the provider's delivery preferences, the HIN notifies each provider who has an active care relationship with a patient upon the following ADT events:

- Patient is admitted to the hospital for inpatient or emergency treatment
- Patient is discharged from the hospital
- Patient is transferred from one care setting to another (e.g., to a different location [unit, bed] within the hospital or to another facility outside of the hospital)
- Patient's demographic information is updated (e.g. name, insurance, next of kin, etc.) by a participating organization

Note Related Use Case Requirements: Organizations entering this use case should simultaneously enter into the ACRS Use Case and the HPD Use Case. These three use cases go together to support ADT Notifications.

Persona Scenario

To explain this use case, this section follows a persona example from start to finish.

Billy Chen, the four-year-old son of Joan and William Chen, has been suffering from a number of health complications resulting from rubella he contracted before birth: cataracts, hearing loss, and a congenital heart defect. Billy and his parents' lives revolve around doctors' visits with Joan often taking Billy to specialists around Michigan and nationwide. Billy sees 13 different specialists and physicians each of whom needs to stay up to date with Billy's condition to help coordinate his care.

Joan is relentlessly vigilant in managing Billy's healthcare because she knows his condition puts him at a higher risk for infection, meningitis, and heart failure. Joan tries to keep all of Billy's physicians and care team members on the same page with changes in Billy's status, but this is an exhausting process. Joan hates feeling like she spends more time updating Billy's specialists over the phone than she does with her sick child.

One night Joan wakes up to a sound that makes her heart drop: Billy crying out in pain. He has a high grade fever, confusion, and muscular pain so Joan frantically rushes him to a local emergency department. Immediately after Billy is admitted, hospital staff update Billy's electronic chart to reflect his admission, an action that generates an ADT notification. Copies of the ADT notification are then automatically sent to each member of Billy's care team because they have signed up to receive electronic updates on Billy's status. Receiving real-time information on changes in Billy's condition helps all of the providers on Billy's care team make coordinated and informed decisions on Billy's care plan. What's more, when Billy is discharged, another notification will be sent to his care team members alerting them to his change in status including any medication changes so they can begin working to ensure Billy's care transition is smooth and well-managed.

Joan knows they have a difficult night ahead of them, but it's the first night in a long time that she hasn't felt pulled between the two worlds of being a full-time mother and an unofficial care coordinator. Joan can find comfort in the knowledge that the next time she communicates with any provider on Billy's care team, that provider will already be aware of Billy's status and ready to further coordinate Billy's care as he leaves the hospital. Having an entire support system working and coordinating behind the scenes helps Joan spend her time where it matters most – at Billy's bedside making sure he feels safe and loved.

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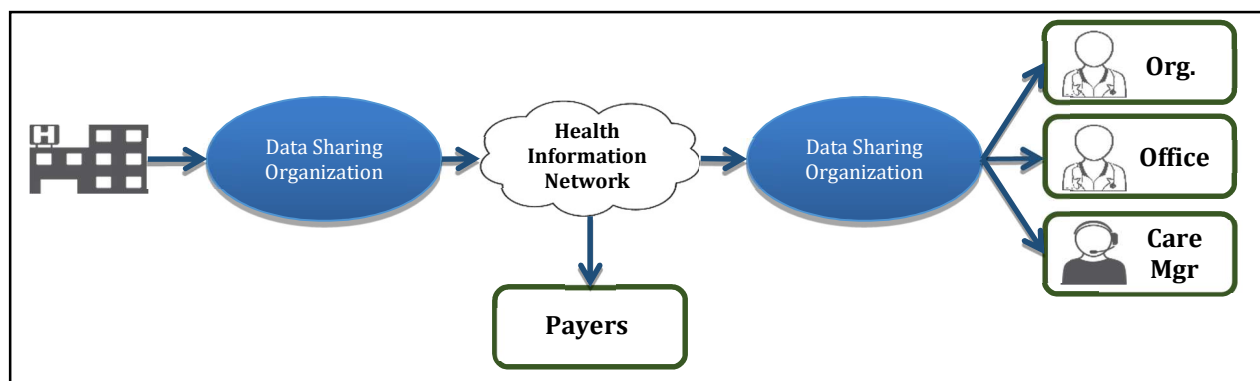
This diagram shows the information flow for this use case.

Figure 1. Path of ADT Notifications

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

Public Law 111-152 (Affordable Care Act)
Public Law 111-5; Section 4104 (Meaningful Use)

Meaningful Use:
☒ Yes
☐ No
☐ Unknown

This use case supports Meaningful Use Stage 2 Transitions of Care measures (12) for eligible professionals and eligible hospitals.

Cost and Revenue

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

Patients whose providers receive ADT notifications are expected to receive more timely and coordinated care. This will result in better health outcomes and more timely treatment and management of health conditions that could otherwise result in a hospital readmission or emergency.

Additionally, it is estimated that on average one avoidable hospital readmission saves payers approximately $15,000.

Payers who subscribe to the ADT Notification Service based on a monthly rate are charged for each ADT source feed from which the payer receives notifications. One ADT source feed may include multiple hospitals. The HIN reimburses data-sharing organizations for each ADT source that a subscribing payer uses.

Due to potential cost savings by improving care transitions and reducing avoidable hospital readmissions, both Centers for Medicare and Medicaid Services (CMS) and Blue Cross Blue Shield accept the following codes from participating organizations for reimbursement for follow up with patients of moderate or extreme complexity after discharge.

99495 -
- Communication (direct contact, telephone, electronic) with the patient and/or caregiver within two business days of discharge
- Medical decision making of at least moderate complexity during the service period
- Face-to-face visit, within 14 calendar days of discharge

99496 -
- Communication (direct contact, telephone, electronic) with the patient and/or caregiver within two business days of discharge
- Medical decision making of high complexity during the service period
- Face-to-face visit, within seven calendar days of discharge

The potential cost savings are not limited to payers. Hospitals have an incentive to adopt ADT notification due to the fact that CMS will not reimburse hospitals for avoidable readmissions. ADT notifications enable providers and care managers to follow up with patients to improve the process of transitioning from in-patient to community-based care settings, thus reducing the likelihood of readmission.

Implementation Challenges

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

Implementation challenges associated with the ADT Notifications use case include conformance to standards and the consistency of data elements within the standard structure. There are often limits to the amount and consistency of patient data entered by the source system. Even if data fields are populated as required by the ADT Notifications Use Case Implementation Guide, and the source system (data-sharing organization) sends the correct event types, certain data elements may be omitted. For example, an insurance segment, if omitted, prevents HIN from routing the information to the correct payer. Also, inconsistencies in hospital registration data entry (e.g. gender may be entered as M, F, U at one facility, and as 0, 1, 2 at another) must be addressed so they are interpreted consistently.

Another challenge is inconsistency in how clinical data is entered by the source system. While a formal diagnosis code is preferred, some facilities may include a chief complaint, entered by admission/registration staff who are not qualified to provide a clinical diagnosis. Chief complaint data is typically free field (i.e. patient is experiencing stomach

pain). There are inconsistencies with whether or not this data field is included by the data-sharing organization, and what type of data is sent.

Patient matching also is an ongoing challenge. There is a lack of common patient identifiers as well as inconsistency with patient demographic information to match patients in a message with the providers that should receive an alert, which makes patient matching difficult in some cases. HIN has adopted a "no false positives rule" and would decline to send a message that is a close, but not exact, match rather than to send the message in error. This challenge is being addressed through the robust patient matching established in ACRS.

The ultimate goal of ADT Notification is to supply providers and care managers with information about patient transitions of care so that timely follow up can occur. Ensuring that clinicians receiving the ADT notifications are able to revise workflows to incorporate this new information is critical. To address this challenge, HIN may consider providing users with training and workflow integration resources to maximize the benefits of the ADT Notification Service.

Vendor Community Preparedness

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

Implementation of this use case is already underway, and ADT messages are being exchanged. In order to participate, sending and receiving data-sharing organizations need to be able to process ADT HL7 messages. HIN can process the messages and has built custom features to match patients (refer to the ACRS Use Case). The primary challenge among vendors is normalizing the data and integrating it into their customers' workflow.

Support Information

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

Support can come from multiple levels (Governor, Federal or State Legislature, Michigan HIT Commission, Michigan State Departments, CMS/ONC/CDC, MiHIN Board, Participating Organizations, payer community, interest groups [e.g. MSMS, MHA], or citizen support).

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: Blue Cross Blue Shield of Michigan

Concerns/Oppositions:
The Michigan Health and Hospital Association (MHA) and some hospitals initially expressed concerns about the security and privacy of the patient information with regard to how and where it would be shared. These concerns have been addressed. Confidence in the privacy and security is supported by MiHIN's Legal Chain of Trust with participating data-sharing organizations and their customers. MiHIN's legal teams developed two opinion letters on this topic, which are available upon request.

Sponsor(s) of Use Case

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

- Michigan Health Information Network Shared Services
- Blue Cross Blue Shield of Michigan
- Michigan Department of Health and Human Services
- Other large health plans

Metrics of Use Case

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

The percent of hospital admissions sent and received through the ADT Notification Service is tracked as a metric to evaluate performance. The measures of success are defined by the following annual goals:

2014
- 80 percent of all hospital admissions in the state are being sent to HIN by the end of 2014
- 60 percent of participating organizations receiving ADT messages by the end of 2014

2015
- 90 percent of all hospital admissions in the state are being sent to HIN by the end of 2015
- 70 percent of participating organizations receiving ADT messages by the end of 2015