Use Case Name: Radiology Studies

Sponsor: None

Date: May 6, 2020

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.*

Radiology documents (also referred to as radiology results) are used across the healthcare continuum to assist providers and other healthcare professionals deliver quality patient care. Providers, Participating Organizations (POs), and other healthcare professionals have a critical need to easily send and find radiology results to help with clinical decision support, trending analysis, population health management, medication management, and numerous other care activities.

The coordination of radiology result delivery across organizations can be very challenging which may have a negative impact on patient care as well as healthcare costs. Radiology results must be presented in a timely manner and in a usable, actionable format so recipients can deliver efficient and effective patient care.

An electronic, statewide exchange of radiology results through an interconnected network of POs overseen by Michigan Health Information Network (MiHIN) helps improve the quality, efficiency, and lower the cost of healthcare.

Purpose of Use Case: The Radiology Studies use case supports provider workflow improvements by helping to send, find, receive, and use radiology results for tests and other services performed at the point of care.

Overview

This overview goes into more details about the use case.

Radiology results are a crucial component of caring for a patient yet are often not shared when transitioning a patient to other members of their care team. This sometimes results in adverse events from uninformed clinical decisions or duplicative tests and/or services being ordered, both of which are costly, burdensome to the provider, and can be harmful to the patient.

Factors contributing to the challenges of sharing radiology results with other care team members include:

- Accurate matching of the patient with their health information based on the demographic information contained in the radiology result message
- Ability to identify the patient's care team
- Providers working at multiple locations

The Radiology Studies use case helps POs electronically send and receive radiology results via statewide health information network (HIN) overseen by MiHIN. Additionally, it facilitates a process to enable the viewing of the actual quality image from POs that have signed on to the Imaging use case.

Healthcare stakeholder's electronic health record (EHR), electronic medical record (EMR), radiology information management system (RIMS or RMS), etc., may require information technology architecture enhancements and upgrades to consume a standard incoming HL7 message.

The intended audience for this use case includes healthcare organizations and professionals that want to send and/or receive electronic radiology results to healthcare entities. These may include but are not limited to:

- Hospitals
- Radiology diagnostic centers
- Ambulatory clinics
- Health departments
- Physician offices
- Medical practices

Persona Story

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

Samuel Johnson

Samuel's health concerns all started with Crohn's disease when he was in his mid-20s. Due to the complexity of Crohn's disease, he is managed by a gastroenterologist many miles away from his home town and primary care team.

For the last 5 years Samuel has avoided surgery by managing his disease with medication that lessens the inflammation that causes his Crohn's disease. Over the last couple of days he has noticed more abdominal cramping which are early signs of a possible intestinal stricture.
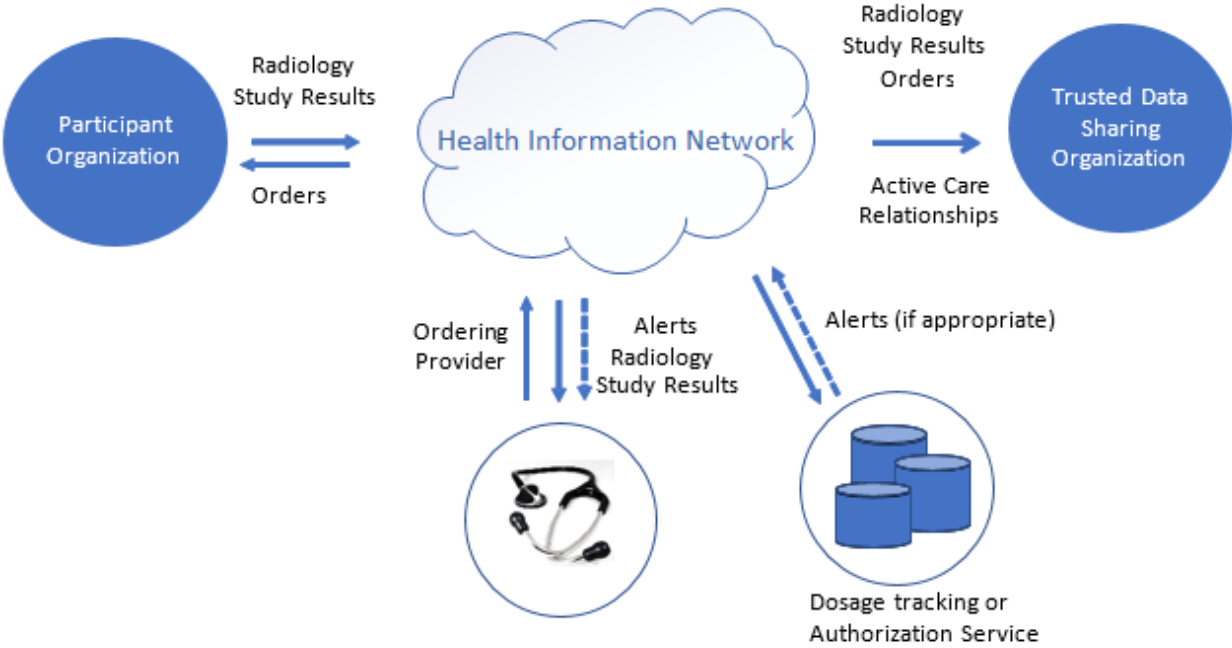
After contacting his gastroenterologist, he was scheduled for a radiology study called a barium swallow at his local hospital. The barium swallow study showed an area of concern noticed by his gastroenterologist in the radiology result. He was then quickly scheduled for a more detailed computed tomography (CT) scan of his abdomen and pelvis. The second exam confirmed what his gastroenterologist had suspected, Samuel had developed a stricture and needed to be scheduled for surgery.

As daunting as this sounds, the diagnosis and plan for surgery was established without Samuel needing to travel far from his home. His radiology results were shared with his entire care team, which includes his gastroenterologist and primary care provider. With the Radiology Studies use case, Samuel is more assured that his care team is informed and that they can provide the right care for his condition.

Diagram

This use case permits both the disclosure and routing of requests for radiology studies and the sharing of radiology results. Health Providers may employ the HIN to route requests and share orders for radiology tests to minimize patient total exposure and automate administrative authorizations. In addition, the Health Provider (where radiology study was completed) sends the radiology result to HIN.   HIN matches the results to the patient's electronic health record and sends the results to the patient's corresponding Active Care Relationship(s).

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

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.

Costs

The project financially covers the following components:

- HL7 message development based on the national standard
- Development of the implementation guide
- Technical development and maintenance at MiHIN
- Partnering with certified electronic health record (EHR) systems to identify message content and send standard message types
- Participant development and implementation to onboard for this use case

Revenue

Significant cost savings for the sender are anticipated based on the economics of scale that will allow for faster, more efficient processing of radiology results with improved care for patients. Receivers will receive radiology results in a consistent manner across the State of Michigan.

Implementation Challenges

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

Implementation challenges associated with this 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 this use case's implementation guide and the source system sends the correct event types, certain data elements may be omitted.

Providers who work at multiple locations provide an additional challenge when trying to deliver to the appropriate office.

Organizations contributing data for this use case are also required to onboard to the following use cases: Health Directory, Active Care Relationship Service, Common Key Service, and Results Delivery.

Vendor Community Preparedness

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

The radiology result will be routed to the participating organizations based on declared active care relationships. These participating organizations may require integration of these messages into their appropriate systems and/or workflow.

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

Sponsor(s) of Use Case

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

- None

Metrics of Use Case

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

- The number of radiology messages received

Other Information

> *This section is provided to give the sponsor(s) an opportunity to address any additional information with regard to this use case that may be pertinent to assessing its potential impact.*

- None