Interoperability Scenarios

Care Theme: Quality and Surveillance Metrics in Public Health

Act 19- Public Health Quality Monitoring using eMeasure

Scenario Primary Goal: This scenario will demonstrate the ability of a Health Information Exchange (HIE) to provide quality reporting measurements using the HL7 Health Quality Measures Format and the ability to perform an XDS query for C32 documents and utilize a Knowledge Processor to identify various quality measures, which can then be provided to public health in a variety of reporting formats.

Key Points:

- The scenario demonstrates how an HIE can query a Registry for documents which are then analyzed to see if they can allow data capture and generation of standard public health reporting measures for quality, surveillance monitoring, chronic disease tracking as well as other quality measures. These include ELR and Notifiable Disease Identification data which can be provided to state and local public health entities.
- Use of standard documents for the query and flagging of data for quality measurement. Data output is formatted based on the informational needs of the receiving systems. A single tool can be used for a variety of monitoring and alerting scenarios.

Meaningful Use Relevance

MU Objective 1: Improving Quality, Safety, Efficiency and Reducing Health Disparities

Clinical Workflow:

A 20 year old female visits a primary care provider. She describes body aches that began 2 days ago and were followed this morning by fever, coughing, shortness of breath, and fatigue. Patient is registered and staff record chief complaint of fever, coughing and fatigue. PCP performs testing to confirm that the patient has H1N1 and also performs a chest x-ray to determine if the patient has developed pneumonia. A clinical summary is submitted to the HIE. Patient is admitted to the hospital based on her positive chest x-ray and diagnosis of pneumonia. The patient develops a skin rash while receiving treatment and follow-up lab testing identifies the cause of the infection as Methicillin-Resistant Staphylococcus Aureus**.**

The patient recovers and is discharged and diagnoses information includes data relevant to the H1N1 and MRSA infections. The Quality Measure Processing Entity operates a Knowledge Processor that Queries the HIE on a regular basis for clinical summary documents meeting criteria for H1N1 and Healthcare-Associated Infection reporting.

Documents are flagged based on configured rules, and data extracted for reporting purposes to public health. Data collected via the Knowledge processor are assembled and visualized using trend charts, maps and other reporting tools. Epidemiologists at the PH Department detect a sudden increase in the number of cases of H1N1. Cases are detected through monitoring and analysis of

summarized surveillance data in the GIPSE format from submissions by the Health Information Exchange (HIE). The increase in cases is confirmed with other health departments. Since there are no specific symptoms that distinguish H1N1 virus infection from other Influenza A and B infections, physicians are being asked to identify specific questions which can help identify H1N1 infection prior to receiving laboratory results. This data could then be included in the processor rules to help determine the severity and spread of the illness with the local jurisdiction.

Care Scenario Steps	Care Setting From	Care Setting To	IHE Profiles	Title	HITSP Constructs	Title
21-1 Patient Level Quality Data of influenza and MRSA patients are submitted to the HIE.	PCP Office	HIE	XDS-MS (PCC)	Cross-Enterprise Sharing of Medical Summaries	HITSP/CAP119 HITSP/C48	Communicate Structured Document HITSP Encounter Document Using IHE Medical Summary (XDS-MS)
21-2 Patient Level Quality Data of influenza and MRSA patients are submitted to the HIE.	Hospital	HIE	XDS-MS (PCC)	Cross-Enterprise Sharing of Medical Summaries	HITSP/CAP119 HITSP/C48	Communicate Structured Document Encounter Document Using IHE Medical Summary (XDS-MS)
21-3 Retrieve clinical information from HIE using multi-patient queries. Data processed using Electronic Measure.	Public Health Agency	HIE	MPQ (QRPH)	Multi-Patient Query	HITSP/CAP129 HITSP/C48 HITSP/CAP130 HITSP/C106	Communicate Quality Measure Data Encounter Document Using IHE Medical Summary (XDS-MS) Communicate Quality Measure Specification Measurement Criteria Document

Health Information Exchange (HIE) Core Services			
IHE Profiles		HITSP Service Collaborations / Constructs	
XCA XDS/XDR/XDM	Cross-community and Cross-enterprise Document Sharing	SC112 / TP13, T31, T33	Healthcare Document Management Manage Transfer of Documents, Document Reliable Interchange, Transfer of Documents on Media
PIX	Patient Identity Cross-reference	SC112 / TP22	Patient ID Cross-Referencing
PDQ	Patient Demographics Query	SC112 / T23	Patient Demographics Query
ATNA	Audit Trail and Node Authentication	SC112 / T15, T17	Collect and Communicate Security Audit Trail Secured Communication Channel
CT	Consistent Time	SC112 / T16	Consistent Time