Community Health

B1 Biosurveillance Monitoring & Detection (IS02, IS11)

Physician Office

Mary Jane, a 77 year-old overweight woman with elevated cholesterol, Type 2 Diabetes (diagnosed 12 years earlier) and a history of mild depression, comes to see her Primary Care Physician complaining that she has experienced fever, fatigue, diarrhea, low spirits, occasional incontinence, abdominal cramps and headaches for the past 2 days.

Given the patient's history, Dr A takes a stool sample and submits it along with blood work to the lab. At the conclusion of the visit, Dr A completes her summary in Mary Jane's Electronic Health Record. The visit record is excerpted in XDS-MS format and sent to the Inland Northwest Health Service (INHS) Health Information Exchange (HIE).

PROFILES
IHE: XDS-MS, PIX, PDQ, XDS, CT, ATNA

CONSTRUCTS
HITSP: C48, TP22, T23, TP13, T16, T15, T17

Public Health Lab

A stool culture is received at the State Public Health Lab. The State Lab is a member of the HIE, and is able to query the HIE for this patient. This allows the lab to access patient demographic and onset information as well as early laboratory results (if available) to avoid data re-entry. The lab culture grows Salmonella typhimurium and a new XD*-LAB document is submitted to the HIE. The XD*-LAB report contains notation from public health of the condition so new cases are easily identified within the HIE.

PROFILES
IHE: XD*Lab, PIX, PDQ, XDS, CT, ATNA

CONSTRUCTS
HITSP: C35, C37, TP22, T23, TP13, T16, T15, T17

Public Health

The state Public Health epidemiologist retrieves population-based data from the INHS HIE. They view the HIE data in a state-level surveillance system that makes these data available, with appropriate analysis, to state and local Public Health. The system shows a rise in Gastrointestinal (GI) illness. The epidemiologist consults a colleague in the local Public Health agency to provide support for a Public Health response. Summarized surveillance data are made available to the CDC through the NHIN gateway.

PROFILES
IHE: XDS-MS, XD*Lab, XDS, CT, ATNA, XUA

CONSTRUCTS
HITSP: C35, C37, TP13, T16, T15, T17, C19, TP20

Public Health

At the local Public Health Agency, when reviewing data in the local surveillance system, the Public Health nurse notices a spike in the number of reported GI-related complaints. They confer with the Indiana State Department of Health where they also noticed the same unusual rise. Following case investigation and review of laboratory results from the HIE, the local Public Health agency concludes that the county is experiencing an outbreak of Salmonella. The agency issues a Salmonella alert to the community.

PROFILES
IHE: PWP

CONSTRUCTS
HITSP: T64, T81, T63

(Over)

Physician Office

A new patient comes into the ED with "diarrhea and abdominal pain" and their EMR is updated with the chief complaint, etc. Presenting complaint and demographic information is automatically sent as part of a query for active alerts to the public health knowledge resource to identify any associated public health alert conditions that might pertain to this patient. The Salmonella alert is presented to the clinician with instructions to perform culture and care provision guidance. The alert also provides recommendations to the local public health office to encourage food service workers to remain out of food-related workplaces to avoid spreading of the infection to others in the community.

PROFILES
IHE: NA

CONSTRUCTS
HITSP: T81

Physician Office

An otherwise healthy 11 year-old boy, Jay Tee, arrives at the ED with his mother, complaining of severe diarrhea, vomiting and abdominal cramps over a 36 hour period. The attending physician accesses the patient's EHR, conducts an examination and decides Jay Tee's GI symptoms warrant checking for any Public Health alerts regarding GI symptoms. Using forms made available to the EHR from public health, the physician sends patient context data to check for Public Health alerts. In response an alert is identified which contains assessment and treatment guidelines. The Clinician clicks a link to the Public Health Morbidity form which is populated with EMR data, supplemented with data entry, and submitted to Public Health.

PROFILES
IHE: RFD

CONSTRUCTS
HITSP: TP50

Physician Office

A Public Health alert authored by the Marion County Health Department is received in the clinician's daily worklist which provides details with regard to a recent Salmonella outbreak. The message contains information on recommended practices for patients who arrive at the practice complaining of diarrhea and stomach pain. When a patient, Mrs. Smith, comes into the practice complaining of these symptoms, the practitioner changes the normal course of treatment to follow the Public Health alert instructions. The clinician orders a stool culture to confirm or rule out Salmonella. In addition, since Mrs. Smith works in a restaurant, the clinician instructs her to stay home if possible to avoid sharing the disease with co-workers and customers. If he / she has to go to work, then he / she should wash his / her hands frequently to limit the transfer to food in the kitchen.

PROFILES
IHE: NA

CONSTRUCTS
HITSP: T63

Center for Disease Control

At the National level, HIE data provide an important, integrated view of population health across multiple state jurisdictions. By relying on summarized data, we can quickly establish that overview without the need to accumulate and process a large quantity of individual level data.

PROFILES
IHE: New Directions DSUB, XUA

CONSTRUCTS
HITSP: Pending Construct, C19, TP20

CONSTRUCTS
NHIN: HEIM