Special Series Presentation

Syndromic Surveillance:
Adding Value in Colorado

October 16, 2018
Public Health – EHR Vendors Collaboration Initiative

In Focus

Special Session #7: Zika Virus Disease Update

Coming Up! Special Session #7: Zika Virus Disease Update for Electronic Health Record (EHR) Vendors, Health Information Technology Developers, Public Health, and Clinical Healthcare Partners on Nov 2, 2016 1:00 PM – 2:00 PM EDT

Please pre-register for the webinar by clicking the link below:
https://attendee.gotowebinar.com/register/35049205897385264131

Abstract

This webinar will be focused on the recommendations around Ask at Order Entry (AOE)* for pregnancy status in Zika virus (ZIKV) laboratory test orders with the possibility of a broader discussion on the capture of pregnancy status in electronic health records, per the clinical workflow and an update on the algorithm for ZIKV risk assessment in pregnant women, based on the latest Centers for Disease Control and Prevention (CDC) guidelines.

Terms explained:

* Ask at Order Entry (AOE): Some tests, such as microbiology cultures and those that determine heavy metal ion concentration, require additional
Question and Answer Session

How to submit or ask questions in Ready Talk for the panel members?

Submit or Ask Questions
Submit your text question and comments using the Question Panel

Please raise your hand to be unmuted for verbal questions.
Special Announcement

Expert Panelist

Michael A. Coletta, MPH
National Syndromic Surveillance Program Manager
Division of Health Informatics and Surveillance
Center for Surveillance, Epidemiology, and Laboratory Services
Centers for Disease Control and Prevention
Syndromic Surveillance: Adding Value in Colorado

Seth Foldy  Yushiuan Chen  Greg Budney  Talia Brown

CO North Central Region Partnership
National Syndromic Surveillance Program
Not so long ago...

- A quarter of a city’s population could have diarrhea at the same time and the health department wouldn’t know (1993).
- Manual reporting and paper record reviews were the basis of most public health surveillance activities

Then...

- A national HL7 standard for syndromic surveillance was developed and matured
- EHR standardization and adoption blossomed.
- EHR syndromic reporting from hospitals was incentivized.
National Syndromic Surveillance Program (NSSP)

• **Why:**
  o Syndromic surveillance data is a core objective of Meaningful Use Stage 2 and 3 (MU2, MU3)
  o Enhanced public health surveillance and improve early outbreak detection and response

• **Where:**
  o Colorado Local Syndromic Surveillance Efforts
    o Denver Public Health and Tri-County Health Department (Adams, Arapahoe and Douglas Counties) (beginning in 2013)
    o Boulder County and Jefferson County Public Health (beginning in 2016)

• **Who:**
  o Emergency departments at eligible hospitals

• **What:**
  o Syndromic surveillance required elements

• **How:**
  o Direct HL7 data submission to the federal secure site/local health department
  o Through health information exchange (HIE) vendor (Colorado: CORHIO)
  o Hourly automated electronic data feeds into local syndromic surveillance system
Children’s Hospital Colorado is considering joining NSSP in the future

*CO-NCR: Colorado North Central Region
Hospitals Onboarding and Information Sharing

Syndemic Surveillance Web Page

### Syndemic Surveillance & Meaningful Use

**Value of participating in the NSIP**
- NSIP allows health care providers and patients to securely access and share a patient's vital medical information electronically.
- Improved patient record recall behavior, speed of access to information, improved safety and quality and decreased cost of patient care, better disease monitoring at the point of care.

**Health Information Exchange (HIE)**

**Colorado North Central Region (CO-NCR) Hospitals**

- Adams County
- Arapahoe County
- Padder Valley Medical Center
- Swedish Medical Center
- North Suburban Medical Center
- The Medical Center of Aurora
- University of Colorado Hospital
- Littleton Parent Hospital
- St. Anthony North Parent Hospital
- SCI Health Community Hospital

**Colorado Regional Health Information Organization (CRHIO)**

- CRHIO is a non-profit, public-private partnership that is improving health care for all Coloradans through health information technology and the reanimation of HIE.
- CRHIO manages and maintains the technology infrastructure that supports secure and efficient clinical information sharing among health care providers across Colorado.

**Syndemic Surveillance**

Providing Data to HIE:
- Emergency Department visits
- Outpatient visits
- Inpatient visits
- Lab results

Data Source Description:
1. **HIE**
2. **Healthcare organizations**
3. **Public health agencies**
4. **Community organizations**

### Brochure

**National Syndemic Surveillance Program (NSIP)**

**meaningful use**

**Stage I**
1. Syndemic surveillance test submission
2. Electronic capture health information
3. Distributed environment
4. Data exchange

**Stage II**
1. Syndemic surveillance test submission
2. Electronic capture health information
3. Distributed environment
4. Data exchange

**Stage III**
1. Syndemic surveillance test submission
2. Electronic capture health information
3. Distributed environment
4. Data exchange

**NSIP Users in the US**

- Denver Public Health
- Colorado Department of Public Health and Environment
- Health First Colorado
- Colorado Hospital Association
- Colorado Medical Society
- Colorado Nurses Association
- Colorado Association of Healthcare Organizations

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Hospitals Onboarding and Information Sharing

DUA, MU Declaration, Invitations

11/2017

Meaningful Use Stage 3 (MU3) Readiness for Syndromic Surveillance

In 2013, Tri-County Health Department and Denver Public Health co-jointly began participating in the National Syndromic Surveillance Program (NSSP) in 2013 and since 2016, an expanded effort includes Boulder County Public Health and Jefferson County Public Health. This Colorado North Central Region partnership (NSSP CD-NCR) includes local public health agencies and meaningful use eligible hospital facilities from Adams, Arapahoe, Boulder, Denver, Douglas and Jefferson Counties. Colorado does not have statewide syndromic surveillance reporting to meet this objective at this point.

Declaration of Readiness to Receive Syndromic Surveillance Data for MU3

Currently, all local public health agencies (LPHAs) in the NSSP CD-NCR receive electronic syndromic surveillance data from eligible hospitals and their associated emergency departments. In Adams, Arapahoe, Boulder, Denver, Douglas and Jefferson Counties, seeking MU3 incentive payments.

NSSP CD-NCR area hospitals intending to meet MU3 public health surveillance syndromic surveillance data transmission objective must register their intent to do so with their LPHAs within 60 days of their MU3 reporting period. Based on MU3 requirements, the objective is to ensure that the eligible hospitals (LHs) or critical access hospitals (CAHs) are in active engagement with a public health agency to submit electronic public health data in a meaningful way using Certified Electronic Health Record Technology (CEHRT). If LH or CAH chooses to submit data and ensures that the LH or CAH is in active engagement with a public health agency to submit syndromic surveillance data. In addition, LH or CAH should engage with the designated public health agency to explore the possibility of submitting urgent care data. Please find objectives, measures, final rules, and other information about MU3 on the Centers for Medicare and Medicaid Services (CMS) website.

Newsletter and Notifications

Syndromic Surveillance Notification Report

September 24th, 2018 (9:00 AM)

Notification: Increase in Emergency Department (ED) Visits Related to Influenza Like Illness (ILI)

For Information Only

Purpose
- To notify partners regarding an increase in the rate of ED visits via our Syndromic Surveillance system meeting surveillance criteria of ILI during late August and early September.

Definitions used for ILI Syndromic Surveillance
- Rate of ED-related visits is calculated by using counts of visits meeting the CDC’s ILI case definition, which is based on searching visits with influenza-specific discharge diagnosis ICD-10 codes (J09, J10, J11) or text terms in the ED chief complaint and triage note (fever and cough, sore throat, chest pain, and hypoxia).
- Rate of influenza-related ED visits is based on counts of visits with influenza-specific discharge diagnosis ICD-10 codes (J09, J10, J11).

ILI and Influenza-Related ED Visits in TCHD’s jurisdiction
- A significant rise in the rate of ILI-related ED visits was identified in TCHD’s jurisdiction in late August and early September.
- Ancillary laboratory data indicates community circulation of respiratory viruses and enteroviruses rather than influenza viruses during this period.

Reminders Regarding ILI Prevention and Control Measures Prior to Influenza Season
- Review your agency’s employee health policy and procedure for the upcoming influenza season, particularly illness exclusion policies.
- Promote infection control for all employees and monitor vaccination rates.

Figure. Rates of ILI and Influenza-Related ED Visits in Syndromic Surveillance, by Week (05/01/2018-09/01/2018)
Hospitals Onboarding and Information Sharing

Data Validation Guide

ESSENCE User Trainings

Query Portal-Weather Station Data

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Examples of CO-NCR Use Cases

- **Mass Gathering, Information Sharing and Public Health Response**
  - 2014 Enterovirus D68
  - 2017 Total Solar Eclipse
  - 2017 Gas Leak at an Elementary School
  - 2018 Synthetic Marijuana and Coagulopathy
  - 2018 Water World Incident – Recreational
  - 2018 Recycle Plant Fire
  - 2018 Chlorine Gas Leak
  - 2018 Influenza-Like Illness
Examples of CO-NCR Use

- **Newsletters and Notification Reports**
  - NSSP CO-NCR Syndromic Surveillance Communication Workgroup (Local Public Health)

- **Enhance Public Health Surveillance with Hospital Partners**
  - Shared case definitions
  - Flu, carbon monoxide poisoning, asthma, diarrhea, West Nile Virus, etc.
  - Complementary with other surveillance information to improve interventions and data quality control
    - Rabies
    - Flu
    - Opioids
National Collaborations on Opioid Overdose Surveillance

• Collaborations
  o Colorado North Central Region (CO-NCR), State of Nebraska, and Marion County, Indiana
  o International Society of Disease Surveillance: Overdose Surveillance Committee

• Goals
  o Coordinate efforts and leverage resources
  o Enhance information sharing
  o Enhance opioid overdose surveillance
  o Situational Awareness
    o Ongoing monitoring
    o Bi-directional communication with hospital partners
    o Timely notifications
Enhanced Public Health Surveillance

- Substance overdose
- Infectious diseases
- Non-Infectious diseases
- Public events
- Other public health threats

Alerts and Case Investigations

- Descriptive epidemiology
- Line level case investigations
- Investigation and follow-up
- Information sharing with hospital partners and public health partners via email or other systems

Public Health Responses

- Gather additional information from hospitals and other public health agencies
- Gather additional information from other information sources
- Inform colleagues and follow other protocols of public health responses

Keep Monitoring Queries. Continue to Communicate and Share Information
Collaborations and Investigations for Public Health Surveillance

- Data Quality Assurance
- Develop Descriptive Epidemiology Questions
- Case Investigations
- Partnership
  ✓ Facility Infection Preventionists
  ✓ ED Physicians and Nurses
  ✓ Facility Emergency Management
  ✓ Public Health Syndromic Surveillance Epidemiologists
  ✓ Public Health Communicable Disease Epidemiologists
  ✓ Public Health Emergency Preparedness and Response
- Continuous Collaborations and Future Opportunities
  o Syndromic Surveillance (SyS) provides timely situational awareness
  o SyS information can be used to prepare staff for incidents and outbreaks at hospitals, schools, long term care facilities, etc.
  o SyS provides helpful information for hospital administrations to review policies
  o Meaningful Use incentives help maintain good quality of data and improve the system for all hospital partners and health care providers
Situation: Hepatitis A
Situation: Injection Drug Use and Associated Infections

All ED Visits for Needle Drug Use

ED Visits for Infections Associated with Needle Drug Use
Conclusion: Value for Public Health & Preparedness

• Complements traditional public health surveillance systems
  – No other source offers such timeliness and flexible range of health problems
  – Data from multiple providers with little effort
• Near-real-time information sharing between public health, hospitals and emergency departments
• Supports rapid, data-driven decisions in emergencies and outbreaks
  – Helps guide response by emergency managers, health care facilities, first responders, schools, employers and the public
Conclusion: Value for Health Care and Vendors

- National, uniform, stable and well-validated HL7 standards
- Many hospitals in most states have been submitting data for years
- Health information exchanges (HIEs, RHIOs) facilitate submission in many jurisdictions
- Data supports health care preparedness and response
  - Public health alerts enable better health care planning and decisions
- Public health queries require no hospital effort
  - Reduces manual data requests from infection preventionists and medical records
  - Data can be used to allow providers to identify cases when necessary
Conclusion: Implications for Policy

• Syndromic surveillance has provided a practical, stable, high-value way for many hospitals to demonstrate Meaningful Use and Promote Interoperability

• Public health agencies, vendors and health care providers should consider this track record when considering proposed CMS regulations (e.g., Promoting Interoperability rules)
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THANK YOU

• For more information:

Yushiuan Chen ychen@tchd.org
Seth Foldy seth.foldy@dhha.org