Syndromic Surveillance in New Mexico

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What is Public Health Disease Surveillance?

“The ongoing systematic collection, analysis, and interpretation of health data for use in the planning, implementation, and evaluation of public health, with the overarching goal of providing information to government and the public to improve public health actions and guidance.”

What is a Syndrome?
What is a Syndrome?

• “A group of signs and symptoms that occur together and characterize a particular abnormality or condition.” – Merriam Webster
• Often used interchangeably and confused with “disorder,” or “disease.”
• From the Greek σύνδρομον, literally meaning “run together” or concurrent
What is a *Syndrome*?

**CDC Category A Respiratory Syndrome**

ACUTE infection of the upper and/ or lower respiratory tract (from the oropharynx to the lungs, includes otitis media)

SPECIFIC diagnosis of acute respiratory tract infection (RTI) such as pneumonia due to parainfluenza virus

ACUTE non-specific diagnosis of RTI such as sinusitis, pharyngitis, laryngitis

ACUTE non-specific symptoms of RTI such as cough, stridor, shortness of breath, throat pain

EXCLUDES chronic conditions such as chronic bronchitis, asthma without acute exacerbation, chronic sinusitis, allergic conditions (Note: INCLUDE *acute exacerbation* of chronic illnesses.)
What is *Syndromic Surveillance*?

“...an investigational approach where health department staff, assisted by automated data acquisition and generation of statistical alerts, monitor disease indicators *in real-time* or *near real-time* to detect outbreaks of disease earlier than would otherwise be possible with traditional surveillance”

What is Syndromic Surveillance?

• At the intersection of public health, national security, and health information technology.
• *Real or near real time* collection, analysis, interpretation and dissemination of health-related data.
• Enables the early detection of the impact of potential threats.
• The first large-scale syndromic surveillance system was established in New York City, November 2001, in response to post-9/11 bioterrorism threats.
Syndromic Surveillance in NYC

- After September 11, 2001, hospitals capable of providing emergency department visit data were recruited for surveillance.
- Thirty-nine hospitals provided data 7 days a week to the NYC DOHMH.
- Variables collected and analyzed included: date and time of visit, age, sex, home zip code, and free-text field “chief complaint” – the reason for the ED visit as described by the patient.

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Includes</th>
<th>Excludes</th>
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<tbody>
<tr>
<td>Common Cold</td>
<td>Nasal drip, congestion, stuffiness</td>
<td>Chest congestion, sore throat</td>
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<tr>
<td>Sepsis</td>
<td>Sepsis, cardiac arrest, unresponsive, unconscious, dead on arrival</td>
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<tr>
<td>Respiratory</td>
<td>Cough, shortness of breath (SOB), difficulty breathing, croup, dyspnea, bronchitis, pneumonia, hypoxia, upper respiratory illness, chest congestion</td>
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<tr>
<td>Diarrhea</td>
<td>Diarrhea, enteritis, gastroenteritis, stomach virus</td>
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<tr>
<td>Fever</td>
<td>Fever, chills, flu, viral syndrome, body ache and pain, malaise</td>
<td>Hay fever</td>
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<tr>
<td>Rash</td>
<td>Vesicles, chicken pox, folliculitis, herpes, shingles</td>
<td>Thrush, diaper and genital rash</td>
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<tr>
<td>Asthma</td>
<td>Asthma, wheezing, reactive airway, chronic obstructive airway disease</td>
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<tr>
<td>Vomiting</td>
<td>Vomiting, food poisoning</td>
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Syndromic Surveillance in NYC

- Citywide temporal analysis using a 3 day window to detect both 1-day spikes and gradual increases of illness.
- Calculated a likelihood ratio statistic using SaTScan comparing observed data to expected data.
- Spatial clustering analysis compared observed to expected number of cases in each geographic area using either hospital location or resident location.
- While no bioterrorism-related syndromes were identified, analysis provided an earlier recognition of seasonal influenza, rotavirus, and norovirus activity.

Syndromic Surveillance Nationally – CDC BioSense

• The initiation of syndromic surveillance in NM began with the receipt of the CDC's National Syndromic Surveillance Program (NSSP) BioSense grant in 2012
• Mandated in the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, launched in 2003, redesigned in 2010 as BioSense 2.0
• Provides a mechanism to collect and share information on ED visits, hospitalizations, and other data from multiple sources including the Department of Veterans Affairs (VA), and Department of Defense (DoD).
• Allows health officials at local, state, and national levels to monitor and respond to health effects of exposure to disease or hazardous conditions beyond bioterrorism
• The BioSense program awarded funding to 35 jurisdictions in 2012.

http://www.cdc.gov/biosense/index.html
SYNDROMIC SURVEILLANCE IN NM

7.4.3.10 EMERGENCY DEPARTMENT REPORTING:

A. Reporting requirements: Hospitals shall report all emergency department visits electronically to the department of health in such a format, with such data elements and in accordance with such standards of quality, timeliness and completeness as established by the department of health.
Syndromic Surveillance in NM – NMHIC

- NM Health Information Collaborative, is a non-profit organization housed at LCF Research, Albuquerque
- They are the sole statewide Health Information Exchange (HIE)
- NMHIC enables the exchange of patient health information among various healthcare organizations using electronic health record (EHR) systems.
- Authorized healthcare providers can access more comprehensive information about a patient’s history
- NMHIC is contracted as the state’s data provider for BioSense
Syndromic Surveillance in NM

- 23 out of 35 Emergency Departments have been “onboarded” and provide electronic ED data to NMHIC and subsequently to DOH.
- NMHIC submits 19 of these facilities’ data to BioSense
- Variables include date and time of visit, age, sex, chief complaint, zip code of patient, facility ID, diagnosis, ED Disposition
- Records are (currently) de-identified
- ED Facilities register at [http://www.nmhit.org](http://www.nmhit.org), the NMDOH Health Information Technology website, for onboarding