Real Time Monitoring of Deaths Using Coroner's Data

Ashley Peterson, MPH
Acute Communicable Disease Control
Department of Public Health
Los Angeles County
Presenter Disclosures

Ashley Peterson

The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose
Unusual Death Surveillance

- Funded by Centers for Disease Control Bioterrorism Preparedness and Response Cooperative Agreement
- Collaboration between Los Angeles County Department of Public Health and Department of the Coroner
- Early detection of unusual deaths
  - Bioterrorist attacks
  - Emerging infectious diseases
- Follow up and reporting of infectious disease related deaths
Today’s Presentation

• Describe the unusual death surveillance system
  – Collaboration
  – Required resources
  – Scope of surveillance
Coroner Cases
California Government Code (Section 27491)

1. Therapeutic misadventures
2. Self-induced / Criminal abortion
3. Drug addiction or overdose
4. Aspiration
5. In custody / under sentence
6. Occupational disease / hazard
7. In state hospital
Coroner Cases
California Government Code (Section 27491)

8. Criminal acts of others
9. Rape / sodomy
10. Unattended fetal deaths
11. Human remains outside a dedicated cemetery
12. Homicide, suicide, accidental death (or cause or mode of death can not be determined)
13. Sudden or unusual
14. Contagious disease constituting public health hazard
Coroner Cases per Year

- ~ 60,000 LAC Deaths / yr
- ~ 42,000 Non-coroner case deaths
- ~ 12,000 Investigation only/sign out
- ~ 6,000 Autopsies
- ~ 18,000 Coroner’s Cases / yr
Coroner Dataset
42 variables

• Demographics: age, sex, race

• Place of residence

• Death descriptors – date, time, location, event description

• Reporting descriptors – who reported, when reported

• Cause of death
### Case Selection Algorithm

- **SAS software - Character string recognition**

#### Respiratory Syndrome
- SARS
- Flu
- Respiratory
- Pneumon
- Cough
- SOB
- Breath
  + Difficulty
  + Short of
  + Shortness of

#### Fever Syndrome
- Fever
- Temp
  - Attempt

#### Rash Syndrome
- Rash
  - Trash
  - Thrash
  - Crash
- Necrotizing fa

#### GI Syndrome
- Naus
- Vomit
- Diar
- Diah
- Food Poisoning

#### Neurological Syndrome
- Enceph
- Seizure
- Meningi
- West Nile

#### Situation Specific Syndromes
- LAX
- Airplane
- Airport

#### Disease Specific Syndromes
- Tuberculosis
- HIV
- AIDS
Case Follow Up - Active

1. Notify appropriate public health program

2. Ensure disease event has been reported

3. Determine status of autopsy or review autopsy records

4. Contact last provider or hospital of death if applicable
Case Follow Up - Passive

1. Await update of final cause of death
   • Weekly update
   • Monthly update

2. Upon receipt of final cause of death, forward case to appropriate public health program

3. Ensure disease event has been reported
Unusual Death Surveillance
2003 – 2006

- Of the 70,774 coroner’s cases from 2003-2006, 424 or 0.6% were selected for follow up.

- Of the 424 cases selected for follow up, 46% (196) had reportable communicable disease causes of death.

- Of the 505 cases with reportable communicable disease causes of death, 56% (281) were not previously reported.
Table 3: Number and types of cases of reportable infectious disease captured via UDSS from 2003 to 2006.

<table>
<thead>
<tr>
<th>Reportable Disease</th>
<th>Number Captured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coccidioidomycosis</td>
<td>3</td>
</tr>
<tr>
<td>Cysticercosis</td>
<td>4</td>
</tr>
<tr>
<td>Encephalitis</td>
<td>16</td>
</tr>
<tr>
<td><em>Haemophilus influenza</em></td>
<td>4</td>
</tr>
<tr>
<td>Hantavirus</td>
<td>1</td>
</tr>
<tr>
<td>Hepatitis</td>
<td>118</td>
</tr>
<tr>
<td>Kawasaki Syndrome</td>
<td>2</td>
</tr>
<tr>
<td>Meningitis</td>
<td>36</td>
</tr>
<tr>
<td>Necrotizing Fasciitis</td>
<td>36</td>
</tr>
<tr>
<td>Invasive Pneumococcal Disease</td>
<td>1</td>
</tr>
<tr>
<td>Rabies</td>
<td>1</td>
</tr>
<tr>
<td>Rubella</td>
<td>1</td>
</tr>
<tr>
<td>Shigellosis</td>
<td>1</td>
</tr>
<tr>
<td>Streptococcus (IGAS and <em>S. pneumoniae</em>, Invasive)</td>
<td>49</td>
</tr>
<tr>
<td>Toxoplasmosis</td>
<td>7</td>
</tr>
<tr>
<td>West Nile Virus</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>281</strong></td>
</tr>
</tbody>
</table>
Limitations

- System only captures deaths which become coroner’s cases

- Completely relies on coroner’s investigators’ descriptions of the decedent and circumstances of death in identifying cases for follow up

- Timeliness of passive follow up is dependent on speed of coroner’s office
Future Steps

• Utilize retrospective knowledge of a public health infectious disease event to establish the sensitivity and specificity of the algorithm

• Use demographic variables to analyze infectious disease related death trends in LAC

• Compare coroner death data with Electronic Death Registration System data
Thank You

- Laurene Mascola, MD, MPH
- David Dassey, MD, MPH
- Sharon Sakamoto, RN, PHN, MPH/MSN
- Kim Bryant, RN, BSN
- Dawn Terashita, MD, MPH
- Amber Zelenay, MPH
- Los Angeles County Department of the Coroner