Mortality Surveillance: Real-Time Monitoring for Improved Data Quality and Public Health

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Mortality Surveillance

The ongoing systematic monitoring and analysis of mortality data and the dissemination of information that leads to actions being taken to address data quality and public health concerns.
Is Surveillance Business as Normal?

- Despite having much in common, surveillance is not the same as vital statistics.
  - Speed is sometimes more important than complete accuracy
  - Unique events can be just as important as statistical significance
  - Surveillance partners are not the same as data users
Mortality Surveillance: Methods

- Analysis of death records as they are received and processed
- Automated identification of deaths of potential surveillance interest
- Routine analysis for temporal and spatial clusters
- Data mining to identify and understand emerging trends and patterns of potential surveillance interest
Mortality Surveillance: Objectives/Goals

- Identify potential data problems as soon as possible and communicate that information to NCHS and/or state staff in a position to correct the problem

- Identify potential public health concerns and communicate that to appropriate public health partners
Characteristics of Surveillance

- Near real-time analysis
- Intended to initiate an action or investigation
- Based on partnerships and communication
- Topic Focused
Potential Surveillance Topics

- Infectious disease
- Emerging drug threats
- Clustering of suicides
- Deaths related to faulty products
Potential Partners

- Food and Drug Administration (FDA)
- Substance Abuse & Mental Health Services Administration (SAMHSA)
- Office of National Drug Control Policy
- National Center for Immunization and Respiratory Diseases
- National Center for Injury Prevention and Control
- National Highway Transportation Safety Administration (NHTSA)
- Consumer Product Safety Commission
What has been happening?

- NCHS codes cause-of-death and flags rare causes
- NCHS notifies states and requests state follow-up on rare causes
  - Attempt to confirm the COD with the original certifier
  - Send copy of the certificate

- The annual file is closed and is rechecked for rare causes.
The Objective of our New Protocol for Confirming Rare Causes of Death

- Increase confidence that rare causes of high public health interest and visibility are correct. Currently we are focusing on rare vaccine-preventable diseases.
# Vaccine-Preventable Diseases

[underlying and multiple cause-of-death unless otherwise specified]

<table>
<thead>
<tr>
<th>ICD</th>
<th>Description</th>
<th>Age limitations</th>
</tr>
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<tbody>
<tr>
<td>A08.0</td>
<td>Rotaviral enteritis (Rotavirus)</td>
<td>&lt;5 years</td>
</tr>
<tr>
<td>A36</td>
<td>Diphtheria</td>
<td>any</td>
</tr>
<tr>
<td>A37</td>
<td>Whooping cough (Pertussis)</td>
<td>&lt;5 years</td>
</tr>
<tr>
<td>A80</td>
<td>Acute poliomyelitis (Polio)</td>
<td>any</td>
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<tr>
<td>B01</td>
<td>Varicella</td>
<td>&lt;50 years</td>
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<tr>
<td></td>
<td>Varicella [underlying cause only]</td>
<td>50 years and older</td>
</tr>
<tr>
<td>B05</td>
<td>Measles</td>
<td>any</td>
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<tr>
<td>B06</td>
<td>Rubella</td>
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<tr>
<td>B26</td>
<td>Mumps</td>
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<tr>
<td>P35.0</td>
<td>Congenital rubella syndrome</td>
<td>any</td>
</tr>
</tbody>
</table>
Partners

- **Centers for Disease Control and Prevention (CDC)**
  - National Center for Health Statistics (NCHS)
  - National Center for Immunization and Respiratory Diseases (NCIRD)

- **States**
  - State vital records offices
  - State epidemiologist and immunization programs
The New Protocol for Confirming Rare Causes-of-Death

- The initial steps do **not** change significantly.
  - NCHS codes the COD
  - NCHS notifies state and request standard follow-up
    - Attempt to confirm the COD with the original certifier
    - Send copy of the certificate

**But, no more waiting!**
NCIRDs Investigation and Verification

- NCIRD working with the state epidemiologist and/or immunization program investigates.

- If NCIRD verifies the COD
  - NCHS marks the cause as confirmed.

- If NCIRD cannot verify the COD
  - NCHS notifies the state vital records office and attempts to coordinate an update/correction.
  - Pending the receipt of an update/correction NCHS changes the COD to R99 (Other ill-defined and unspecified causes of mortality)
Implementation

- NCHS is currently in the process of implementing the new protocol for 2012 data
- NCHS is closely monitoring the 2012 mortality data for deaths attributed to vaccine-preventable rare causes
Is It Working?

- **Successes**
  - Confirmed the cause of death
  - Identified a potential coding problem
  - Encouraged more thorough review at the state level
  - Helped to encourage better communication
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The findings and conclusions in this presentation are those of the author and do not necessarily represent the official position of the Centers for Disease Control and Prevention.