

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.

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**

Mortality Surveillance: Methods

- ❑ Analysis of death records as they are received and processed**
- ❑ Automated identification of deaths of potential surveillance interest (e.g. Rare causes of death)**
- ❑ Routine analysis for temporal and/or spatial clusters**
- ❑ Data mining to identify emerging trends and patterns of surveillance interest**

Characteristics of Surveillance

- ❑ Near real-time analysis**
- ❑ Intended to initiate an action or investigation**
- ❑ Topic Focused**
- ❑ Based on partnerships and communication**

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**

**RARE CAUSES OF DEATH:
VACCINE-PREVENTABLE DISEASES**

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 death of high public health interest and visibility in the national data file are correct. Currently we are focusing on rare vaccine-preventable diseases.**
- ❑ Contribute to national public health surveillance efforts by helping to ensure deaths attributed to a vaccine-preventable disease are reported to pathogen specific surveillance programs.**

Vaccine-Preventable Diseases

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

ICD	Description	Age limitations
A08.0	Rotaviral enteritis (Rotavirus)	<5 years
A36	Diphtheria	any
A37	Whooping cough (Pertussis)	<5 years
A80	Acute poliomyelitis (Polio)	any
B01	Varicella	<50 years
	Varicella [underlying cause only]	50 years and older
B05	Measles	any
B06	Rubella	any
B26	Mumps	any
P35.0	Congenital rubella syndrome	any

New 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 for the annual file to close!

If the rare cause of death is related to one of the specified vaccine-preventable diseases...

- NCHS sends an abstract of key information about the death to NCIRD for investigation and verification.
 - Multiple and Underlying Causes of Death
 - Date of Death
 - State and County of Residence
 - State and County of Occurrence
 - Age / Date of Birth
 - Sex
 - Race
 - Ethnicity

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 rare vaccine-preventable diseases**

Is It Working?

□ YES... Early Success Stories

- We have confirmed the cause of death for several deaths attributed to a rare vaccine-preventable disease
- Identified a potential coding problem
- Process seems to be encouraging more thorough review at the state level (i.e. confirmation of cause info with certifier)
- Seems to be encouraging better communication between State Vital Statistics Office and State Epidemiologist
- Identified and confirmed a death to a vaccine-preventable disease that had not previously been reported to either the State Epidemiologist or NCIRD

A Few Challenges

- ❑ **Despite having much in common, surveillance is not the same as vital statistics.**
 - Speed is sometimes more important than accuracy
 - Unique events can be just as important as statistical significance
 - Partners are not the same as data users

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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.

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