



Use of Literal Text in Death Certificate Data

Robert N. Anderson, PhD
Chief, Mortality Statistics Branch
Division of Vital Statistics

NCHS Board of Scientific Counselors
Hyattsville, MD
May 9-10, 2019

Literal text from the death certificate

- Original text as reported by the cause of death certifier
 - in Part I of the cause of death section
 - in Part II of the cause of death section
 - in the “Describe how injury occurred” field
- Entered directly into an electronic death registration system or transcribed from a paper certificate
- Used as the basis for cause of death coding both automated (using SuperMICAR in MMDS) and manual

CAUSE OF DEATH (See instructions and examples)

32. **PART I.** Enter the chain of events—diseases, injuries, or complications—that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines if necessary.

IMMEDIATE CAUSE (Final disease or condition -----> resulting in death)

a. _____ Due to (or as a consequence of): _____

Sequentially list conditions, if any, leading to the cause listed on line a. Enter the **UNDERLYING CAUSE** (disease or injury that initiated the events resulting in death) **LAST**

b. _____ Due to (or as a consequence of): _____

c. _____ Due to (or as a consequence of): _____

d. _____

Causal sequence leading to death

Approximate interval:
Onset to death

PART II. Enter other significant conditions contributing to death but not resulting in the underlying cause given in PART I

Contributing conditions

TESTS PERFORMED?

Yes No

FINDINGS AVAILABLE TO

USE OF DEATH? Yes No

35. DID TOBACCO USE CONTRIBUTE TO DEATH?

Yes Probably
 No Unknown

36. IF FEMALE:

Not pregnant within past year
 Pregnant at time of death
 Not pregnant, but pregnant within 42 days of death
 Not pregnant, but pregnant 43 days to 1 year before death
 Unknown if pregnant within the past year

37. MANNER OF DEATH

Natural Homicide
 Accident Pending Investigation
 Suicide Could not be determined

38. DATE OF INJURY (Mo/Day/Yr) (Spell Month)

39. TIME OF INJURY

40. PLACE OF INJURY (e.g., Decedent's home; construction site; restaurant; wooded area)

41. INJURY AT WORK?

Yes No

42. LOCATION OF INJURY: State: _____

City or Town: _____

Street & Number: _____

Zip Code: _____

43. DESCRIBE HOW INJURY OCCURRED:

Injury description including circumstances leading to the injury

44. IF TRANSPORTATION INJURY, SPECIFY:

Driver/Operator
 Passenger
 Pedestrian
 Other (Specify)

CAUSE OF DEATH (See instructions and examples)

32. **PART I.** Enter the chain of events--diseases, injuries, or complications--that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines if necessary.

IMMEDIATE CAUSE (Final disease or condition -----> resulting in death)

a. Cardiac arrhythmia

Due to (or as a consequence of):

Sequentially list conditions, if any, leading to the cause listed on line a. Enter the **UNDERLYING CAUSE** (disease or injury that initiated the events resulting in death) **LAST**

b. Combined methamphetamine and fentanyl toxicity

Due to (or as a consequence of):

c. _____

Due to (or as a consequence of):

d. _____

Approximate interval:
Onset to death

PART II. Enter other significant conditions contributing to death but not resulting in the underlying cause given in PART I

Hypertensive heart disease

33. WAS AN AUTOPSY PERFORMED?

Yes No

34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? Yes No

35. DID TOBACCO USE CONTRIBUTE TO DEATH?

Yes Probably

No Unknown

36. IF FEMALE:

Not pregnant within past year

Pregnant at time of death

Not pregnant, but pregnant within 42 days of death

Not pregnant, but pregnant 43 days to 1 year before death

Unknown if pregnant within the past year

37. MANNER OF DEATH

Natural Homicide

Accident Pending Investigation

Suicide Could not be determined

38. DATE OF INJURY (Mo/Day/Yr) (Spell Month)

39. TIME OF INJURY

40. PLACE OF INJURY (e.g., Decedent's home; construction site; restaurant; wooded area)

41. INJURY AT WORK?

Yes No

42. LOCATION OF INJURY: State:

City or Town:

Street & Number:

Apartment No.:

Zip Code:

43. DESCRIBE HOW INJURY OCCURRED:

Accidental overdose of methamphetamine mixed with fentanyl

44. IF TRANSPORTATION INJURY, SPECIFY:

Driver/Operator

Passenger

Pedestrian

Other (Specify)

What else can be done with the additional detail not captured by ICD codes?

- Evaluation of the quality of the ICD-coded data
 - The text on which the codes are based can be easily reviewed
- Better understand cause of death certification and what certifiers report on death certificates
 - Terminology used to describe diseases and conditions
 - Changes in terminology
 - Emerging diseases
 - Analysis of information reported, but not codeable to the ICD (e.g., bed sharing)

History

- 2003 – NCHS began collecting the literal text from death certificates in all states
 - As of Jan 1, 2003, all states were using SuperMICAR
- 2005 – use of literal text to review potential coding errors
- 2006 – pilot project with what is now NCEZID staff to find Creutzfeldt-Jakob disease deaths that were being mis-coded
- 2007 – decision to release literal text data to federal agencies under a data use agreement; others required to use the RDC
 - Data files released to the Division of Reproductive Health (CDC), NHTSA and CPSC
- 2010 – discovery of personal identifiers in the literal text fields and decision to restrict data to in-house staff

Major projects involving literal text data

- Creutzfeldt-Jakob disease deaths
 - With the Division of High Consequence Pathogens and Pathology (NCEZID/CDC)
- Deaths involving consumer products
 - Consumer Products Safety Commission
- Non-traffic motor vehicle deaths
 - National Highway Traffic Safety Administration
- Sudden unexplained infant deaths
 - With the Division of Reproductive Health (NCCDPHP/CDC)
- Infant deaths associated with termination of pregnancy
- Deaths due to drug-resistant infections

Drug Mentions with Involvement (DMI) data

- Joint project with FDA
- Developed to satisfy the need for greater specificity with regard to drugs than can be provided by ICD-10 codes
- Contains information on specific drugs and associated variants
 - E.g., search for oxycodone (principal variant) would return all deaths involving oxycodone and its variants (e.g., OxyContin, Percocet, Roxicet, etc)
- Data for 2010-2016 are currently available in the RDC (2017 to follow shortly)

National Vital
Statistics Reports

Volume 65, Number 9



December 20, 2016

National Vital
Statistics Reports

Volume 68, Number 3



March 21, 2019

Using Literal Text From the Death Certificate to Enhance Mortality Statistics: Characterizing Drug Involvement in Deaths

by James P. Trinidad, M.P.H., M.S., U.S. Food and Drug Administration; Margaret Warner, Ph.D., Brigham A. Bastian, B.S., Arialdi M. Miniño, M.P.H., and Holly Hedegaard, M.D., M.S.P.H., National Center for Health Statistics

Drug Overdose Deaths Involving Fentanyl, 2011–2016

by Merianne Rose Spencer, M.P.H., Margaret Warner, Ph.D., and Brigham A. Bastian, B.S., National Center for Health Statistics; James P. Trinidad, M.P.H., M.S., U.S. Food and Drug Administration; and Holly Hedegaard, M.D., M.S.P.H., National Center for Health Statistics

Current work and plans

- Exploring use of literal text in surveillance system to identify emerging diseases and specific drugs
 - Part of PCOR III project
- Making the literal text available to researchers
 - Redaction effort on 2016 data to remove personal identifiers is nearly complete
 - Plans are to make these data available in the RDC
 - Additional data years will be made available as redaction for each year is completed

Robert Anderson

Phone: 301-458-4073

RNAnderson@cdc.gov

