Death certificates

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

August 31, 2021
Mortality data from the National Vital Statistics System

- Basis for official mortality statistics in the U.S.
- Data come from death certificates
- Includes all deaths registered in the U.S.
- Vital Statistics Cooperative Program
  - 50 states, New York City, District of Columbia and 5 territories (Puerto Rico, US Virgin Islands, Guam, American Samoa, Commonwealth of the Northern Marianas)
  - NCHS provides funding, coordination, and standards
  - States maintain autonomy in their operations, but collect and provide data according to standard specifications and agreed upon timelines
Promoting Consistency and Uniformity

- Model State Vital Statistics Act and Regulations
- Standard Certificates and Reports – standardized worksheets
- Training materials – handbooks, videos, instruction manuals
- Technical assistance – ICD 10
- Software – automated coding

U.S. Standard Death Certificate

Demographic and personal information
Completed by the funeral director using information from the best qualified informant: spouse, parent, child, another relative, or other person who has personal knowledge about the decedent

Medical information
For most deaths due to natural causes: completed by attending physician, nurse practitioner, physician’s assistant
For sudden, unexpected or suspicious deaths: completed by medical examiner or coroner

More demographic information
Revision of the standard death certificate

- Last revision intended for implementation in 2003
- Revision process
  - Survey of states to determine if revision is needed
  - Evaluation of previous revision and recommendations for content and format
    - Panel of expert consultants to oversee the process, including representatives from state vital registration and statistics offices, data providers and user organizations
    - Subgroups focused on birth, death, fetal death and standards/design
    - Death subgroup for 2003 revision included state registrars, medical examiners/coroners, researchers and representatives from professional associations (funeral directors, AHA, AMA)
Cause of death reporting

- Cause of death section of the death certificate is designed to elicit an underlying cause of death
  - Disease or injury that initiated the chain of events leading to death, or the circumstances of the accident or violence which produced the fatal injury (ICD-10 volume 2)
  - All diseases or conditions in the chain of events leading to death should be reported
- Conditions contributing to death, but that were not part of the chain of events may also be reported
- Only those diseases or conditions that caused or contributed to death are to be reported on death certificates
Cause of death section of the standard death certificate (2003 revision)

<table>
<thead>
<tr>
<th>IMMEDIATE CAUSE (Final disease or condition resulting in death)</th>
<th>Due to (or as a consequence of):</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td></td>
</tr>
</tbody>
</table>

Causal sequence leading to death

<table>
<thead>
<tr>
<th>CONTRIBUTING CAUSE (disease or injury that initiated the events resulting in death)</th>
<th>Due to (or as a consequence of):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Contributing conditions

More information and instructional material available at:
https://www.cdc.gov/nchs/nvss/writing_cod_statements.htm
Cause of death coding

- Causes of death currently coded using the Tenth Revision of the International Classification of Diseases (ICD-10)
  - Implemented for mortality in 1999
  - Standardized rules for assigning codes and selecting the underlying cause
- All diseases and conditions reported on death certificates are coded and retained
Accuracy and completeness of cause of death reporting

- Accuracy difficult to determine
  - Lack of true gold standard
  - No national studies
  - Autopsy studies
  - Medical records review

- Completeness of reporting
  - Ill-defined conditions
  - Lack of specificity
  - Missing information in the causal sequence
  - Missing underlying cause
Complications of medical and surgical care

- Includes adverse effects of drugs and medical misadventures
- Not typically the underlying cause
  - Coding rules require selection of the condition for which the decedent was being treated as the underlying cause
  - Medical/surgical complications causing death should be specified in the causal sequence
  - If reported, medical/surgical complications can be captured and coded for statistical purposes
- Disincentive to report on death certificates
Training for cause of death certifiers

- Handbooks
- Topic specific Vital Statistics Reporting Guidance
  - Disasters
  - Drug overdose
  - COVID-19
- E-learning – Improving Cause of Death Reporting
- Mobile app – Death certificate quick guide (android and IOS)

https://www.cdc.gov/nchs/nvss/writing_cod_statements.htm
https://www.cdc.gov/nchs/nvss/reporting-guidance.htm
Questions?