



Classifying Causes of Death in the Mortality Collection

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Overview

- Overview Mortality Collection
- Sources of information
- Classifying causes of death
- ICD versions used for mortality
- World Health Organization (WHO) classification updates
- Coding issues

Mortality Collection

- Holds data from 1988 onwards
- BDM death registrations=core dataset
- Approx 29,000 deaths each year
- NHI numbers on all records
- Causes of death coded in ICD-10-AM
- Data collected & published by year of death registration

Staffing

- Team Leader
- Administrators x 2
- Clinical Coders x 6

Mortality Clinical Coders require an excellent knowledge of diseases and disease progression as well as clinical coding expertise

Sources of information

Primary data sources include:

- BDM death registrations
- Medical certificates of cause of death
- Coroners' notifications & final findings
- Postmortem reports

Demographic information

- Names & alternate names
- National Health Index (NHI) number
- Date of birth & date of death
- Address
- Ethnicity
- Place of birth
- Place of death
- Occupation
- Maori descent

Demographic coding

- Ethnicity (up to 3 codes recorded)
- Country of birth
- Domicile code (Area Health Unit)
- Mesh block
- Facility in which died (if died in hospital)

Medical Certificate of Cause of Death

<p>Cause of death</p> <p>I</p> <p>Disease or condition directly leading to death</p> <p>Antecedent causes, stating underlying condition last</p>	<p>a) _____ <i>due to (as consequence of)</i></p> <p>b) _____ <i>due to (as consequence of)</i></p> <p>c) _____</p>	<p>Approx interval between onset & death</p>
<p>II</p> <p>Other significant conditions contributing to death</p>		

Classifying underlying cause of death (U/C)

WHO definition:

“a) the disease or injury which initiated the train of morbid events leading directly to death, or b) the circumstances of the accident or violence which produced the fatal injury”

Classifications used:

- ICD-10-AM, 6th Edition codes
- ICD-10 (WHO) Rules & guidelines for mortality coding

Classifying contributing causes of death

- Cancers (C00-C96) + (D45-D47)
- Selected other causes, e.g. diabetes mellitus, obesity, alcohol & drug abuse/addiction
- Injuries (S00-T98)
- Complications of Medical & Surgical Care (Y40-Y84)

Other ICD coding:

- Place of accident/incident (Y92.)
- Activity – Sports/recreation/work (U50-U73)

Other injury-related information

- Alcohol & drug involved indicators
- Blood alcohol level (mg/100mls)
- Work-relatedness
- Drug & Injury Details (free text field)

Note: These variables are only collected for deaths due to external causes

Other variables collected

- Death certifier code (doctor, coroner)
- Postmortem code
- Source of death information code (News Media, WSNZ, LTSA etc)
- Document status code (Doc status 4 = Awaiting coroner's finding)
- Clinical Notes – free text information about circumstances surrounding death

ICD versions

ICD version used by year of death registration:

- ICD-9-CM-A 1988-1999
- ICD-10-AM, 2nd Edition 2000-2007
 - ICD-10-AM, 3rd Edition Activity codes used from 2003-2007
- ICD-10-AM, 6th Edition 2008 onwards

WHO classification updates

Updates to the ICD-10 classification and mortality coding rules are ratified at the annual WHO-FIC meetings

2006 major mortality rule change -
accidental poisoning in drug/alcohol
dependency now coded to X40-X49
Accidental poisoning as underlying cause
Pre-2006 underlying cause was coded to
F10-F19 in the *Mental & behavioural
disorders* chapter

Quality assurance

Assisted by:

- Coded by one coder, checked & input by another
- Mortality Medical Data System (MMDS) software to check U/C code selection
- International Mortality Forum email discussion group to obtain other opinions
- Annual in-house coding audit
- Feedback from WHO reporting

Coroners Act 2006

The Coroners Act came into effect on 1 July 2007 with the following positive outcomes:

- Investigations held sooner ->more timely findings
- Chief Coroner is an advocate for more timely & consistent coronial data
- Electronic notifications & findings to MoH
- More postmortem reports received

Provisional cause of death coding

- Provisional U/C code is assigned until final coroner's finding received
- *R99 Other ill-defined & unspecified causes of mortality* assigned if no information about cause is available
- *X59 Exposure to unspecified factor* assigned if injuries recorded but not the cause of the injuries
- U/C and other coding is reviewed & updated when the coroner's findings is received

Additional sources of information about cause of death

- Coroner's notification – interim cause
- NMDS hospitalisation data
- Land Transport NZ (LTSA)
- Water Safety NZ
- New media reports – Internet
- NZ Cancer Registry
- Letters from certifying doctors

Awaiting coroners' findings

As at 24 August 2010

Document status 4 *Awaiting coroner's finding*

2008 = 411

2009 = 1543

(U/C provisionally coded on all records)

U/C R99 + X59 + Document status 4

2008 = 16

2009 = 197

(No cause information, awaiting coroners' findings)

Mortality coding challenges

- Injuries listed but no external cause
- PM lists only apparently minor conditions but states “*..these were unlikely to have been the cause of death*”
- SIDS & SUDI – pathologists & coroners moving away from using ‘Sudden Infant Death Syndrome’ in favour of ‘Sudden Unexpected Death in Infancy’
- Coding ‘intent’ for self-inflicted deaths

WHO ICD-10 mortality rules

ICD-10, Volume 2 Instruction Manual – a couple of important U/C selection rules

4.1.9 Modification Rule A

‘Where the selected cause is ill-defined and a condition classified elsewhere is reported on the certificate, reselect the cause of death as if the ill-defined condition had not been reported, except to take account of that condition if it modifies the coding’.

Possible/Probable/Apparent

4.2.14 Expressions indicating doubtful diagnosis

‘Qualifying expressions indicating some doubt as to the accuracy of the diagnosis, such as “apparently”, “presumably”, “possibly”, etc. should be ignored, since entries without such qualification differ only in the degree of certainty of the diagnosis”.

SIDS, SUDI, accidental asphyxia

Example 1, Age 4 months

(a) Direct cause of death

Undetermined

(c) Underlying condition

Nil

(d) Other significant conditions

Unsafe sleeping environment: Co-sleeping with adult; Exposure to smoking adult before and after birth; Consumption of alcohol by co-sleeping adult.

Postmortem failed to reveal any medical condition that may have caused death.

Cause of death – SIDS, category II (co-sleeping)

U/C code R95 *Sudden Infant Death Syndrome*

SIDS, SUDI, accidental asphyxia contd

Example 2, Age 2 months

(a) Direct cause of death

Sudden Unexpected Death in Infancy (SUDI)

(b) Antecedent cause

Possible accidental asphyxia

- **Unsafe sleeping environment**
- **Bed sharing with adult**
- **Prone sleeping**

U/C code W75 Accidental suffocation in bed

SIDS, SUDI, accidental asphyxia contd

Example 3, Age 5 months

(a) Direct cause

Possible accidental asphyxia while sleeping in adult bed
with pillow

(b) Antecedent cause

Chronic lung disease of prematurity requiring continuous
oxygen

(d) Other significant condition

Congenital heart disease (surgical repair) with pacemaker

U/C code *W75 Accidental suffocation in bed*

SIDS, SUDI, accidental asphyxia contd

Example 4, Age 4 months

(a) Direct cause

Sudden Infant Death Syndrome

(c) Underlying cause

Nil

(d) Other significant condition

Gastroenteritis causing clinical dehydration

U/C code *A099 Gastroenteritis and colitis of unspecified origin*

Self-inflicted deaths - intent

- Intent still often unreported so additional follow-up required with CSU
- If deceased was psychotic at time of death intent may be reported like this
“...but whether she was then capable of forming an intent to take her own life, knowing the nature of her actions and their consequences, the evidence does not enable the court to say.”
Coded to ‘undetermined intent’

Questions?

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Mortality data requests email to:

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Vital statistics

“How the people (of England) live is one of the most important questions that can be considered; and how – of what causes, and at what ages – they die is scarcely of less account; for it is the complement of the primary question teaching men how to live a longer, healthier, and happier life.”

William Farr, MD Life and Death in England 1885