Mortality and causes of death from death notification

2006

Metadata

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Mortality and causes of death from death notification, South Africa 2006: Metadata

The data file for mortality and causes of death is provided in flat, ASCII, fixed format, with one line of given length per record. This format was chosen so as to make the data usable with as many statistical programs as possible, and thus accessible to as wide a range of people as possible.

The CD contains the following:
- Data file
- Metadata
- Record layout of data
- Death notification form
- Code list for the International Classification of Diseases and Related Health Problems, 10th revision (ICD-10)
    o   ICD-10 codes
    o   ICD-10 categories

Methodology

1. System design

The registration of deaths is governed by the Births and Deaths Registration Act, 1992 (Act No. 51 of 1992) and is administered by the Department of Home Affairs using Form BI-1663 (Notification/Register of death/stillbirth). After a death is registered, the Department of Home Affairs issues a death certificate and, where applicable, updates the population register. The forms are then collected by Statistics South Africa (Stats SA) for processing.

The processing of death notification forms includes sorting, pasting, precoding, coding and capturing. The process of sorting involves sorting the forms by year of death, month, day and finally by surname of the deceased in alphabetical order. The main purpose of sorting is to identify and remove duplicates. During data processing, unique identifiers (serial numbers) are developed for each form for the purpose of tracking the forms through the different processing phases. Because of the complexity of the coding of diseases, Stats SA decided that all demographic and socio-economic variables on the forms, except the actual causes of death, should be precoded, to expedite the process. Thereafter, the causes of death are manually coded.

Coding the information on causes of death followed a two-step process entailing initial coding and verification by more experienced coders. The causes of death data presented were coded by procedures described in the *Stats SA manual guidelines for coders using ICD-10.* The ICD-10 (10th revision of the International Classification of Disease and related health problems) coding provides the basic guidance used in virtually all countries to code and classify causes of death data. It provides information on coding in terms of disease, injury and poisoning categories. It also provides the rules for selecting the underlying cause of death from the several diagnoses that may be reported on the death certificate, as well as definitions, tabulation lists, guidelines for the death notification form, and regulations on the use of the classification.

After all processes have been undertaken, the data are captured and duplicates verified to ensure that all the death notification forms removed as duplicates during sorting were indeed duplicates, and to identify any that were mistakenly taken out as duplicates. The data are then edited and inconsistent cases manually verified.

The underlying cause of death is then derived automatically using a software programme called Automated Classification of Medical Entities (ACME 2000.05) developed by the United States National Center for Health Statistics (NCHS). The ACME program applies World Health Organization rules on the selection of underlying causes of death. The ACME program is used as the international standard in the automated coding of causes of death.

The Stats SA coding manual prescribes the use of three-character codes while the ACME program requires four-character codes in deriving the underlying cause of death. A conversion program was therefore applied to the codes for the ACME system to recognise the data as valid input. In most of the cases, the fourth character was '9' or '8', indicating that the detail of the coded disease was not specified.

The preparation of the ACME 2001 input file involved the following:

a) Conversion of the captured ICD-10 codes into the required ACME format.
b) Comparison of coded value sets for the up to five causes of death (Cause A, B, C, D and other causes of death, with the associated injury when necessary) with the valid value sets in the ACME instruction manual, and editing where necessary.

2. Coverage

The target population is all deaths that occurred in 2006 and registered at the Department of Home Affairs. It therefore excludes the 2006 deaths that might not be registered, possible late registrations; and deaths that have been registered, but had not reached Stats SA during the current processing phase.

3. Confidentiality

The information remains confidential to Stats SA. The Statistics Act, 1999 (Act No.6 of 1999) prohibits the disclosure of information regarding individuals to any person concerned or his lawful representative. Therefore, the information on mortality and causes of death published does not include personal information about the deceased or informants and is released in such a way that no individual can be identified.

4. Contents of the CD

The data file provided contains 25 variables.

Users are cautioned that the following variables had a high percentage of cases where information was unspecified or unknown:

(a)	Place of death, e.g. hospital, home, nursing home, etc. (15,1%)
(b)	Was the deceased a smoker? (55,0%)
(c)	Was the deceased pregnant 42 days prior to death? (75,2%)
(d)	Province of birth (22,5%)
(e)	Marital status of deceased (16,7%)
(f)	Education of deceased (55,1%)
(g)	Occupation (85,2% were classified as armed forces, occupations unspecified and not elsewhere classified, and not economically active)
(h)	Industry (65,1%)

Note: **Unknown:** Refers to cases where more than one option was marked or the response was not legible.
Unspecified: Refers to cases where no response was given.

The metadata file contains the following information for each variable:

− **Descriptive name of variables:**
A brief description of the variable name

− **Variable name:**
The name of the variable (provided in brackets) and as heading for the value labels

− **Type and position of the variable:**
The type and position of a variable within a record is recorded in the format *(@xxx L) @xxx* and indicates the position (column) at which the variable starts. *L* indicates the length of the field.

− **Note to users:**
The note is provided for each variable to provide additional information for further clarity on questions and definition of concepts.

Other relevant information is available on the Statistics South Africa website (www.statssa.gov.za) or from User Information Services: Statistical release on Mortality and causes of death in South Africa, 2006: Findings from death notification (P0309.3).

Particulars of deceased

Unique sequence number (Serial_No) *(@1 11)*

	Unique sequence number

Note to users
This variable is derived automatically to provide a unique identifier for each death.

Final code list
Valid range: 20060000001–20060631068

Type of death (DeathType) *(@12 1)*

	Type of death
	    Individual
	    Stillborn

Note to users
Individual death is a death that occurred any time after a live birth had taken place. Stillborn is the intra-uterine death of a foetus of at least 26 weeks of gestation that showed no sign of life after complete birth.

Final code list
1 = Individual death
2 = Stillborn

Year of death (DeathYear) *(@13 4)*

	Year of death

Note to users
This variable refers to the year in which the death occurred.

Final code list
2006

Month of death (DeathMonth) *(@17 2)*

	Month of death

Note to users
This variable provides information on the month in which the death occurred.

Final code list
01 = January
02 = February
03 = March
04 = April
05 = May
06 = June
07 = July
08 = August
09 = September
10 = October
11 = November
12 = December

Age in completed years (Age)   *(@19   3)*

	Age at last birthday

Note to users
This variable refers to the age of the deceased in completed years at the time of death. For children younger than one year '000' was recorded.

Final code list
Valid range: 000–130
999 = Unspecified

Sex of deceased (Sex)   *(@22   1)*

	Sex of deceased

Note to users
This variable provides information on the sex of the deceased.

Final code list
1 = Male
2 = Female
8 = Unknown
9 = Unspecified

Marital status of deceased (MStatus)   *(@23   1)*

	Marital status of deceased Single Civil marriage Living as married Widowed Religious law marriage Divorced Customary marriage

Note to users
This variable provides information on the marital status of the deceased.

Final code list
1 = Single
2 = Civil marriage
3 = Living as married
4 = Widowed
5 = Religious law marriage
6 = Divorced
7 = Customary marriage
8 = Unknown
9 = Unspecified

Province of birth of the deceased (Birth_Prov)   *(@24   2)*

	Province of birth of the deceased

Note to users
This variable provides information on the province of birth of the deceased. This variable was derived from the place of birth.

Final code list
  01 = Western Cape
  02 = Eastern Cape
  03 = Northern Cape
  04 = Free State
  05 = KwaZulu-Natal
  06 = North West
  07 = Gauteng
  08 = Mpumalanga
  09 = Limpopo
  97 = Unknown
  98 = Outside South Africa
  99 = Unspecified

Province of death (Death_Prov)   *(@26   2)*

	Province of death

Note to users
  This variable provides information on the province of death of the deceased. This variable was derived from the place of death.

Final code list
  01 = Western Cape
  02 = Eastern Cape
  03 = Northern Cape
  04 = Free State
  05 = KwaZulu-Natal
  06 = North West
  07 = Gauteng
  08 = Mpumalanga
  09 = Limpopo
  98 = Outside South Africa

Place of death (DeathInst)   *(@28   1)*

	Place of death
	Hospital (In-patient)
	ER/Out-patient
	DOA
	Nursing home
	Home
	Other (Specify)

Note to users
  This variable provides information on the place or institution at which the person died.

Final code list
  1 = Hospital (In-patient)
  2 = Emergency room/Out-patient
  3 = Dead on arrival
  4 = Nursing home
  5 = Home
  6 = Other
  8 = Unknown
  9 = Unspecified

Province of residence of the deceased (Res_Prov)   *(@29   2)*

	Province of residence of the deceased ……………………………………………………

Note to users

This variable provides information on the province of usual residence of the deceased.

Final code list

01 = Western Cape
02 = Eastern Cape
03 = Northern Cape
04 = Free State
05 = KwaZulu-Natal
06 = North West
07 = Gauteng
08 = Mpumalanga
09 = Limpopo
97 = Unknown
98 = Outside South Africa
99 = Unspecified

Education of deceased (EduCode)   *(@31   2)*

	Deceased's education(Specify only highest class completed/achieved) None Gr1 Gr2 Gr3 Gr4 Gr5 Gr6 Gr7 Gr8/Form1 Gr9/Form2 Gr10/Form3/NTC1 Gr11/Form4/NTC2 Gr12/Form5/NTC3 Univ/Tech

Note to users

This variable provides information on the highest level of education that the deceased completed or achieved.

Final code list
00 = None
01 = Sub A/Gr1
02 = Sub B/Gr2
03 = Std 1/Gr3
04 = Std 2/Gr4
05 = Std 3/Gr5
06 = Std 4/Gr6
07 = Std 5/Gr7
08 = Std 6/Gr8
09 = Std 7/Gr9
10 = Std 8/Gr10/Form3/NTC1
11 = Std 9/Gr11/Form4/NTC2
12 = Std 10/Gr12/Form5/NTC3
13 = University/Tech
97 = Unknown
99 = Unspecified

Usual Occupation of deceased (Occupation)   *(@33   1)*

	Usual occupation of deceased (give type of work done during most of working life. Do not use 'retired'.)
	....

Note to users
This variable provides information on the usual occupation of the deceased. Usual occupation refers to the type of work done by the deceased most of his or her working life.

Final code list
0 = Armed forces, occupations unspecified and not elsewhere classified, and not economically active persons
1 = Legislators, senior officials and managers
2 = Professionals
3 = Technicians and associate professionals
4 = Clerks
5 = Service workers, shop and market sales workers
6 = Skilled agricultural and fishery workers
7 = Craft and related trade workers
8 = Plant and machine operators and assemblers
9 = Elementary occupations

Type of Business/ Industry (Industry)   *(@34   2)*

	Type of business/industry (e.g. mining, farming)
	....

Note to users
This variable provides information on the type of business or industry where the deceased worked most of his or her working life.

Final code list
- 00 = Private households, exterritorial organisations, representatives of foreign governments and other activities not adequately defined
- 01 = Agriculture, hunting, forestry and fishing
- 02 = Mining and quarrying
- 03 = Manufacturing
- 04 = Electricity, gas and water supply
- 05 = Construction
- 06 = Wholesale and retail trade; repair of motor vehicles, motor cycles and personal and household goods; hotels and restaurants
- 07 = Transport, storage and communication
- 08 = Financial intermediation, insurance, real estate and business services
- 09 = Community, social and personal services
- 97 = Unknown
- 98 = Not applicable
- 99 = Unspecified and other activities not adequately defined

Smoking status of deceased (Smoker)   *(@36   1)*

Was the deceased a smoker (someone who smokes tobacco on most days) five years ago?
    Yes
    No
    Do not know
    Not applicable(minor)

Note to users

This variable provides information on the smoking status of the deceased five years before death. A smoker is defined as someone who smoked any form of tobacco on most days (an average of more than six months a year, or four or more days a week), five years ago. If smoking started less than five years before death, the answer is 'No'. If smoking started more than five years before death, but for less than six months, then the answer is 'No'. Information on smoking status was collected only from persons aged 16 years and older.

Final code list
- 1 = Yes
- 2 = No
- 3 = Do not know
- 4 = Not applicable (aged 15 years and younger)
- 8 = Unknown
- 9 = Unspecified

Medical certificate of cause of death

Part 1	Enter the disease, injuries or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock, or heart failure. List only one cause on each line.
	IMMEDIATE CAUSE (Final disease or condition resulting in death) a. …………………………………………………………………. Due to (or as a consequence of)
	Sequentially list conditions, if any, leading to immediate cause. b. ………………………………………………………… Due to (or as a consequence of)
	Enter UNDERLYING CAUSE last (Disease or injury that initiated events resulting in death) c. ………………………………………………………… Due to (or as a consequence of)
	d. …………………………………………………………. Due to (or as a consequence of)

Note to users

These variables provide information on causes of death. The above information was coded using the ICD-10 code list. (See ICD-10 code list.)

Final code list

a*. Immediate cause of death (CauseA)* (@37   3)
   Valid range: A00–Y88
   888 = Not applicable

b. Second condition leading to death (CauseB) (@40   3)
   Valid range: A00–Y88
   888 = Not applicable

c*. Third condition leading to death (CauseC)* (@43   3)
   Valid range: A00–Y88
   888 = Not applicable

d. Fourth condition leading to death (CauseD) (@46   3)
   Valid range: A02–Y88
   888 = Not applicable

Other conditions leading to death (OtherCause) (@49   3)

Part 2	Other significant conditions contributing to death but not resulting in the underlying cause given in Part 1.

Note to users

This variable provides information on other conditions leading to death. The above information was coded using the ICD-10 code list. (See ICD-10 code list.)

Final code list

Valid range: A06–Y88
888 = Not applicable

Underlying cause of death (UnderlyingCause) (@52   3)

	Underlying cause of death

Note to users

This variable provides information on the underlying cause of death. An underlying cause of death is defined as the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury. This variable was derived from Part1 and Part 2 above. (See ICD-10 code list.)

Final code list

Valid range: A00–Y88
000 = Stillbirth

Broad groups of the underlying causes of death (Underlying_Broad_Grp)   *(@55   7)*

	Broad groups of the underlying causes of death

Note to users

This variable was derived by grouping the underlying causes of death into broad groups of death. See ICD-10 code list for categories (Broad groups).

Final code list

Valid range: A00–A09 and Y85–Y89
000 = Stillbirth

Main groups of the underlying causes of death (Underlying_Main_Grp)   *(@62   7)*

	Main groups of the underlying causes of death

Note to users

This variable was derived by grouping the underlying causes of death into main groups.

Final code list

000 = Stillbirth
A00–B99 = Certain infectious and parasitic diseases
C00–D48 = Neoplasms
D50–D89 = Diseases of the blood and immune mechanism
E00–E90 = Endocrine, nutritional and metabolic diseases
F00–F99 = Mental and behavioural disorders
G00–G99 = Diseases of the nervous system
H00–H59 = Diseases of the eye and adnexa
H60–H95 = Diseases of the ear and mastoid process
I00–I99 = Diseases of the circulatory system
J00–J99 = Diseases of the respiratory system
K00–K93 = Diseases of the digestive system
L00–L99 = Diseases of the skin and subcutaneous tissue
M00–M99 = Diseases of the musculoskeletal system etc.
N00–N99 = Diseases of the genitourinary system
O00–O99 = Pregnancy, childbirth and puerperium
P00–P96 = Perinatal conditions
Q00–Q99 = Congenital malformations
R00–R99 = Symptoms and signs not elsewhere classified
U51–U52 = Drug-resistant tuberculosis
V01–Y98 = External causes of morbidity and mortality

Natural/non-natural underlying causes of death (NaturalUnnatural)   *(@69   1)*

	Natural/non-natural underlying causes of death

Note to users

This variable was derived by grouping the underlying causes of death into natural and non-natural causes.

Final code list

0 = Stillbirth

1 = Natural underlying cause

2 = Non-natural underlying cause

Pregnancy status of deceased (Pregnancy)   *(@70   1)*

	If a female, was she pregnant 42 days prior to death? Yes No

Note to users

This variable provides information on whether or not females aged 10 to 55 years were pregnant 42 days prior to death.

Final code list

1 = Yes

2 = No

3 = Not applicable (Males and females younger than 10 and older than 55 years of age)

8 = Unknown

9 = Unspecified