**Mortality data**

NSW Registry of Births, Deaths and Marriages

Australian Bureau of Statistics

Australian Coordinating Registry

# Background

All deaths for which a coronial inquiry is not required must be certified as to cause and date by a registered medical practitioner and the certificate registered by the Registrar of Births, Deaths and Marriages (RBDM) in each State and Territory. Deaths that are referred to a coroner are registered by the coroner at the conclusion of an inquiry into the circumstances of the death. The vast majority of non-coronial deaths are registered with the relevant RBDM within four weeks of the date of death; however coronial inquiries can take months or even years to conclude.

Details of all registered deaths are forwarded to the Australian Bureau of Statistics (ABS). The ABS then check and code the information. A single code for an underlying cause of death was applied in the years to 1997. From 1997 multiple cause of death codes (ICD-10) were applied to each death record where more than one cause contributed to the death.

# Australian Coordinating Registry Cause of Death Unit Record File

For deaths registered from 2007 onwards, the Centre for Epidemiology and Evidence, NSW Ministry of Health receives coded cause of death data from the Australian Coordinating Registry (ACR) for the Cause of Death Unit Record File (COD URF). Access to the COD URF is in accordance with the ACR terms and conditions of use and disclosure by the NSW Ministry of Health.

The legacy ABS mortality data prior to 2006 have been mapped and combined with the COD URF.

Where information based on the COD URF data is used in any publication or report:

1. the information should be referenced as follows: “Source: Cause of Death Unit Record File held by the NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence.”
2. the following acknowledgement should be included: “Acknowledgement: The Cause of Death Unit Record File (COD URF) is provided by the Australian Coordinating Registry for COD URF on behalf of Australian Registries of Births, Deaths and Marriages, Australian Coroners and the National Coronial Information System.”

# Record linkage of RBDM and ABS/ACR data

Death registrations held by the RBDM contain full personal identifiers and the death registration number. The ABS removes personal identifiers from the ABS mortality data each year once their annual mortality report is published, but retains the death registration number. Thus RBDM death registration data constitute personally identified but uncoded raw data, while the ABS mortality data have coded cause of death but with personal information removed. The Centre for Health Record Linkage (CHeReL) is able to link ABS death registration data with RBDM death registration data using the death registration number. The death registration number is usually reliable for linkage of these two datasets, however additional passes on other common identifiers, such as the date of birth, sex, and the date of death, are also included to help improve matching on unlinked records. The CHeReL routinely carries out checks of these linkages.

# Tips for using mortality data in linkage studies

* Two datasets contain mortality information: RBDM death registration data and the ACR COD URF/ABS death registration data for years prior to 2006.
* The COD URF/ABS death registration data are based on year of registration of the death, rather than the year of the death
* RBDM death registration data are provided in raw, uncoded format. For this reason only date of birth, age at death, date of death, year of death registration and some geographic variables are available for analysis. While the free text cause of text was previously provided to researchers on an interim basis, new requests for free text cause of text will require a strong justification.
* COD URF data are available later than the RBDM death registration data due to the time needed for coding and cleaning of the data.
* Death records available for linkage include deaths occurring in NSW and do not include deaths of NSW residents who die interstate. The Australian Institute of Health and Welfare holds the National Death Index, which can be used for research studies that require linkage of death records for NSW residents who die interstate.
* Death data is coded according to the ICD-10 International Version rather than the Australian Modification ICD-10-AM used in Australian hospitals.
* The date of birth is sometimes incorrect as it is reported by relatives to the funeral director at the time when the funeral is being arranged. The funeral director reports the personal details of the deceased to the RBDM. Particularly for older family members who have died, relatives generally report the birth day (day and month) correctly, but may inadvertently give an incorrect year of birth. For this reason age at death may be preferable for analysis purposes.

# Access to information on Aboriginal and Torres Strait Islander peoples

An application to the Aboriginal Health and Medical Research Council (AH&MRC) ethics committee should be made for research projects for which one or more of the following apply:

* The experience of Aboriginal people is an explicit focus of all or part of the research
* Data collection is explicitly directed at Aboriginal peoples
* Aboriginal peoples, as a group, are to be examined in the results
* The information has an impact on one or more Aboriginal communities
* Aboriginal health funds are a source of funding

Research that is not specifically directed at Aboriginal people or communities, such as for the total population or a sub-population (eg. rural NSW, people over 50 years old) can still potentially impact on Aboriginal people.

However, an application for such research need only be made to the Committee if *any* one of the following applies:

* Any of the five factors listed above are present; or
* Aboriginal people are known, or are likely, to be significantly over-represented in the group being studied (eg. compared to the 2.1% of the total NSW population as shown in the 2006 Census); or
* The Aboriginal experience of the medical condition being studied is known, or is likely, to be different from the overall population; or
* There are Aboriginal people who use the services being studied in distinctive ways, or who have distinctive barriers that limit their access to the services; or
* It is proposed to separately identify data relating to Aboriginal people in the results.

The AH&MRC ethics committee have some specific requirements, including evidence of community engagement in the research. Relevant documents can be found on the AH&MRC website at: <http://www.ahmrc.org.au>. If you are unsure whether an application to the AH&MRC Ethics Committee is required, please seek the advice of the Ethics Committee secretariat (T: 02 9212 4777).

# Data custodian

The Registrar of Births, Deaths and Marriages is the data custodian of death registration data. The CHeReL organises data custodian sign-off for RBDM and COD URF data on behalf of the researcher. To arrange sign-off, please contact:

Research Project Manager

Centre for Health Record Linkage

NSW Ministry of Health

Locked Mail Bag 961

North Sydney NSW 2059

Phone: 02 9391 9924

Fax: 02 9391 9686

Email: [cherel.mail@moh.health.nsw.gov.au](mailto:cherel.mail@moh.health.nsw.gov.au)

# RBDM death registrations - variable information

| Variable [Variable name] | Description/Notes | Codes |
| --- | --- | --- |
| Date of birth  [birth\_date] | The date of birth of the individual.  Full date of birth is rarely released for data linkage projects; please ensure that you include detailed justification if you require full date of birth. |  |
| Date of death  [death\_date] | The date of death of the individual.  Full date of death is rarely released for data linkage projects; please ensure that you include detailed justification if you require full date of death. |  |
| Age at death in years  [age\_recode] | The age at death of the individual in years |  |
| Year of Registration  [registration\_year] | The year in which death was registered |  |
| Local Health District (LHD) code (of residence)  [LHD\_2010\_CODE] | Calculated LHD of residence codes. Where a conflict occurs, standard generic state level values are used that correspond to the values found in URES\_STATE. | X700 = Sydney  X710 = South Western Sydney  X720 = South Eastern Sydney  X730 = Illawarra Shoalhaven  X740 = Western Sydney  X750 = Nepean Blue Mountains  X760 = Northern Sydney  X770 = Central Coast  X800 = Hunter New England  X810 = Northern NSW  X820 = Mid North Coast  X830 = Southern NSW  X840 = Murrumbidgee  X850 = Western NSW  X860 = Far West  X910 = NSW not otherwise specified  X920 = Victoria  X921 = Network with Victoria  X930 = Queensland  X940 = South Australia  X950 = Western Australia  X960 = Tasmania  X970 = Northern Territory  X980 = Australian Capital Territory  X997 = Overseas locality |
| Local Government Area (LGA)  ASGC 2011 Code (of residence)  [LGA\_2011\_CODE] | Calculated LGA geographic region codes based on Australian Statistical Geography Standard 2011 (Cat. No. 1270.0.55.001). Where a conflict occurs, a value of ‘19999’ is used as a generic NSW record, while overseas and interstate records are blanked. |  |
| SA4 Geographic Region Code (of residence)  [SA4\_2011\_CODE] | Calculated SA4 geographic region codes based on Australian Statistical Geography Standard 2011 (Cat. No. 1270.0.55.001). |  |
| SA3 Geographic Region Code (of residence)  [SA3\_2011\_CODE] | Calculated SA3 geographic region codes based on Australian Statistical Geography Standard 2011 (Cat. No. 1270.0.55.001). |  |
| SA2 Geographic Region Code (of residence)  [SA2\_2011\_CODE] | Calculated SA2 geographic region codes based on Australian Statistical Geography Standard 2011 (Cat. No. 1270.0.55.001). |  |

# ACR COD URF data - variable information

| Variable [Variable name] | Description/Notes | Codes |
| --- | --- | --- |
| Indigenous Status  [indigenous\_status] | Available from 2004. Indigenous Status is a measure of whether the deceased person has been identified as being of Aboriginal or Torres Strait Islander origin.  Approval of the Aboriginal Health and Medical Research Council (AH&MRC) may be required to obtain this variable (see page 3). | 1 = Aboriginal  2 = Torres Strait Islander  3 = Both Aboriginal and Torres Strait Islander  4 = Non Indigenous  9 = Not stated |
| Year of Registration  [reg\_year] | Year in which a death is registered by the relevant Registry of Births, Deaths and Marriages. |  |
| Date of death | The date of death of the individual.  Full date of death is rarely released for data linkage projects; please ensure that you include detailed justification if you require full date of death. |  |
| Age at Death |  |  |
| Age in Years  [age\_years] | Age in years. |  |
| Fractional age  (less than 1 year of age)  [dth\_age] | Age at death during the first year of life (0 years) is recorded in completed months, days, hours or minutes. If aged between 1 and 11 months, Age at Death is recorded in months. If aged between 1 and 28 days, Age at Death is recorded in days. If aged between 1 and 23 hours, Age at Death is recorded in hours. If aged less than an hour, Age at Death is recorded in minutes. If age is less than one minute, Age at Death is recorded in seconds. | 1-120 Age in years  201-211 Age in months with prefix of 2  299 Unknown months  301-327 Age in days with a prefix of 3  398 Unknown days  401-423 Age in hours with a prefix of 4  499 Unknown hours  500-559 Age in minutes with a prefix of 5  599 Unknown minutes  601-659 Age in seconds with a prefix of 6  699 Unknown seconds  999 Not stated |
| Place of Birth  [birth\_place] | The country or state/territory (if born in Australia) in which the deceased person was born.  In 2009 the classification changed from Standard Australian Classification of Countries (SACC) 1998 (Revision 2.03) to the 2008 version of the SACC. Since 2012 the 2011 version of SACC has been used. | Coding has changed many times and is inconsistent. Use with care.  http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/5D2485E6F15281E6CA2570B5007ACA80?opendocument |
| Period of Residence in Australia  [period\_residence] | Period of residence in Australia, in years. | 00-96 = 00-96 years of residence in Australia  97 = 97 or more years of residence in Australia  98 = Born in Australia (not applicable)  99 = Not stated |
| State/Territory of Usual Residence  [ures\_state] | Available from 2006. | 1 = New South Wales  2 = Victoria  3 = Queensland  4 = South Australia  5 = Western Australia  6 = Tasmania  7 = Northern Territory  8 = Australian Capital Territory  9 = Other Territories (Cocos (Keeling) Islands, Christmas Island, Jervis Bay Territory) |
| Sex  [sex] | The sex of the deceased person. | 1 = Male  2 = Female |
| Place of Occurrence of External Cause of Death  [place\_occurrence] | From 2007. The place where the external cause of death occurred. | 0 = Home  1 = Residential Institution  2 = School  3 = Sports and athletics area  4 = Street and highway  5 = Trade and services  6 = Industrial and construction area  7 = Farm  8 = Other specified places  9 = Unspecified place  # = Place of occurrence not applicable |
| Underlying Cause of Death Diagnosis Code  [ucod\_recode] | The underlying cause of death have periods added to the ICD code when there are fourth or fifth character level, and hashes removed. |  |
| ICD version  [ucod\_codeset] | This is the clinical ICD version used to code underlying cause of death. |  |
| Contributing causes of death (ICD-10)  [RACS1-RACS20] | Available from 1997. Up to 20 comorbidity codes. Original values as provided by the ACR. Please note that the codes do not have periods inserted. |  |
| Geography |  |  |
| Australian Standard Geographic Classification (ASGC)  [URES\_9DIGIT] | From 1988 to 2010. ASGC 9-digit code denoting where the deceased usually resided.  The geographic location is reported using a nine digit numeric code. This code is hierarchical and comprises a series of sub-codes indicating various levels of geography. The first digit of this code indicates the state or territory (S/T) of usual residence. Digits 2-3 show the Statistical Division (SD), digits 4-5 the Statistical Subdivision (SSD), and digits 6-9 show the Statistical Local Area (SLA). | http://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/1216.0?OpenDocument |
| Australian Statistical Geography Standard (ASGS)  [URES9\_SA2] | From 2011 onwards. ASGS 9-digit code denoting where the deceased usually resided.  The geographic location is reported using a nine digit numeric code (SA2). This code is hierarchical and comprises a series of sub-codes indicating various levels of geography. The first digit of this code indicates the state or territory (S/T) of usual residence. Digits 2-3 show the SA4, digits 4-5 show the SA3, and digits 6-9 show the SA2. The SA2 identifier is a 4-digit code, assigned in alphabetical order within an SA3 and numerically within an SA4. An SA2 code is only unique within an S/T if it is preceded by the S/T identifier. | http://www.abs.gov.au/ausstats/abs@.nsf/mf/1270.0.55.001 |
| ABS revision status  [revision\_status] | This is recorded as “Preliminary”, “Revised” or “Final”  See <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/3303.0Technical%20Note32013?opendocument&tabname=Notes&prodno=3303.0&issue=2013&num=&view>= for further information.  This variable will be included in all data releases. |  |