## Data quality information — Health sector overview E

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| Data quality information |
| Data quality information (DQI) provides information against the seven ABS data quality framework dimensions, for a selection of performance indicators in the Health sector overview. DQI for additional indicators will be progressively introduced in future reports.  Technical DQI has been supplied or agreed by relevant data providers. Additional Steering Committee commentary does not necessarily reflect the views of data providers. |
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DQI are available for the following performance indicators and measures:

Babies born of low birthweight 2

Prevalence of risk factors to the health of Australians 6

Prevalence of overweight and obesity 6

Rates of current daily smokers 10

Levels of risky alcohol consumption 12

Selected potentially preventable diseases 16

Incidence of selected cancers 16

Incidence of heart attacks 20

Prevalence of type 2 diabetes 24

Potentially avoidable deaths 28

Mortality and life expectancy 32

Life expectancy 32

Mortality rates — Infant and child 34

Mortality rates by major cause of death 38

Profile of employed health workforce 42

### Babies born of low birthweight

Data quality information for this indicator has been sourced from the Australian Institute of Health and Welfare (AIHW) with additional Steering Committee comments.

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| Indicator definition and description | |  |
| Indicator | The incidence of low birthweight among liveborn babies of Aboriginal and Torres Strait Islander mothers and other mothers as a proportion of liveborn infants. | |
| Measure/s (computation) | Numerator:   * Number of low birthweight live-born singleton infants born in a calendar year. Low birthweight is defined as less than 2500 grams.   Denominator:   * Number of live-born singleton infants born in a calendar year.   Calculation: 100 × (Numerator ÷ Denominator)  Variability band:   * calculated using the standard method for estimating 95% confidence intervals as follows: * where * n=number of live-born singleton infants. * CI = confidence interval * CR = crude rate (expressed as a percentage) | |
| Data source/s | This indicator is calculated using data from the AIHW National Perinatal Data Collection (NPDC).  For data by socioeconomic status: calculated by AIHW using the ABS’ Socioeconomic Index for Areas (SEIFA) Index of Relative Socioeconomic Disadvantage (IRSD). Each Statistical Local Area in Australia is ranked and divided into quintiles in a population-based manner, such that each quintile has approximately 20 per cent of the population and each decile has approximately 10 per cent of the population.  For data by remoteness: ABS’ Australian Standard Geographical Classification. | |
| Data Quality Framework Dimensions | |  |
| Institutional environment | The National Perinatal Epidemiology and Statistics Unit (NPESU) calculated this indictor on behalf of the Australian Institute of Health and Welfare (AIHW).  The AIHW is an independent statutory authority within the Health and Ageing portfolio, which is accountable to the Parliament of Australia through the Minister for Health and Ageing. For further information see the AIHW website.  State and Territory health authorities receive these data from patient administrative and clinical records. This information is usually collected by midwives or other birth attendants. States and territories use these data for service planning, monitoring and internal and public reporting. | |
| Relevance | The National Perinatal Data Collection comprises data items as specified in the Perinatal NMDS plus additional items collected by the states and territories. The purpose of the Perinatal NMDS is to collect information at birth for monitoring pregnancy, childbirth and the neonatal period for both the mother and baby(s).  The Perinatal NMDS is a specification for data collected on all births in Australia in hospitals, birth centres and the community. It includes information for all live births and stillbirths of at least 400 grams birthweight or at least 20 weeks gestation, except in WA, where births are included if gestational age is 20 weeks or more, or if gestation unknown, if birthweight is at least 400 grams, and in Victoria where livebirths are included of any gestational age and stillbirths if gestational age is 20 weeks or more, or if gestation unknown, if birthweight is at least 400 grams. It includes data items relating to the mother, including demographic characteristics and factors relating to the pregnancy, labour and birth; and data items relating to the baby, including birth status (live or stillbirth), sex, gestational age at birth, birth weight, Apgar score and neonatal length of stay.  The NPDC includes all relevant data elements of interest for this indicator. Birthweight is a Perinatal NMDS item. In 2011, very few (0.02 per cent) records for live-born singleton babies were missing the data for birthweight.  While each jurisdiction has a unique perinatal form for collecting data on which the format of the Indigenous status question and recording categories varies slightly, all systems include the NMDS item on Indigenous status of mother.  No formal national assessment has been undertaken to determine completeness of the coverage of Indigenous mothers in the Perinatal NMDS. However, the proportion of Indigenous mothers for the period 2002–2012 has been consistent, at 3.6–4.0 per cent of women who gave birth. For maternal records where Indigenous status was not stated (0.2 per cent), data were excluded from Indigenous and non-Indigenous analyses.  The indicator is presented by Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-Economic Disadvantage (IRSD). The data supplied to the NPDC include a code for SLA from all states and territories. Reporting by remoteness is in accordance with the Australian Statistical Geography Standard (ASGS). | |
| Timeliness | The reference period for the data is 2007 to 2012. Collection of data for the NPDC is annual. | |
| Accuracy | Inaccurate responses may occur in all data provided to the AIHW. The AIHW does not have direct access to perinatal records to determine the accuracy of the data provided. However, the NPESU undertakes validation on receipt of data by the AIHW. Data received from states and territories are checked for completeness, validity and logical errors. Potential errors are queried with jurisdictions, and corrections and resubmissions are made in response to these edit queries. The NPESU does not adjust data to account for possible data errors.  Errors may occur during the processing of data by the states and territories or at the AIHW. Processing errors prior to data supply may be found through the validation checks applied by the NPESU. This indicator is calculated on data that has been reported to the AIHW. Prior to publication, these data are referred back to jurisdictions for checking and review. The NPESU does not adjust the data to correct for missing values. Note that because of data editing and subsequent updates of State/Territory databases, and because data are being reported by place of residence rather than place of birth the numbers reported for this indicator differ from those in reports published by the states and territories. The data are not rounded.  The data supplied for the 2011 Perinatal NMDS by Victoria to prepare this indicator was provisional and subject to vary with data quality activities. Further minor changes to the data are not forseen to produce any detectable change to the indicator.  The geographical location code for the area of usual residence of the mother is included in the Perinatal NMDS. Only 0.1 per cent of records were non-residents or could not be assigned to a state or territory of residence. There is no scope in the data element Area of usual residence of mother to discriminate temporary residence of mother for the purposes of accessing birthing services from usual residence. The former may differentially impact populations from remote and very remote areas, where services are not available locally.  Birthweight is nearly universally reported. Less than 0.06 per cent of records were missing these data overall. Data presented by Indigenous status are influenced by the quality and completeness of Indigenous identification of mothers which is likely to differ among jurisdictions. Approximately 0.2 per cent of mothers who gave birth in the reference period had missing Indigenous status information. Jurisdictional differences in the level of data missing for Indigenous status ranges from less than 0.1% to 1.8% and there may also be differences in the rates of Indigenous under-identification. Therefore, jurisdictional comparisons of Indigenous data should not be made.  Disaggregated data by Indigenous status is reported by single year for time series and by three-year combined data for the current reporting period. Single year data by Indigenous status should be used with caution due to the small number of low birthweight infants born to Indigenous mothers each year. | |
| Coherence | Data for this indicator are published annually in Australia’s mothers and babies; and biennially in reports such as the Aboriginal and Torres Strait Islander Health Performance Framework report, the Health and Welfare of Australia’s Aboriginal and Torres Strait Islander Peoples, and the Overcoming Indigenous Disadvantage report. The numbers presented in these publications will differ slightly from those presented here as this measure excludes multiple births and stillbirths.  Changing levels of Indigenous identification over time and across jurisdictions may also affect the accuracy of compiling a consistent time series in future years.  In 2011, the ABS updated the standard geography used in Australia for most data collections from the Australian Standard Geographical Classification (ASGC) to the Australian Statistical Geography Standard (ASGS). Also updated at this time were remoteness areas and the Socio-Economic Indices for Areas (SEIFA), based on the 2011 ABS Census of Population and Housing.  The new remoteness areas will be referred to as RA 2011, and the previous remoteness areas as RA 2006. The new SEIFA will be referred to as SEIFA 2011, and the previous SEIFA as SEIFA 2006.  Data for 2007 through to 2010 reported by remoteness are reported for RA 2006. Data from 2011 are reported for RA 2011. The AIHW considers the change from RA 2006 to RA 2011 to be a series break when applied to data supplied for this indicator, therefore remoteness data for 2010 and previous years are not comparable to remoteness data for 2011 and subsequent years.  Data for 2007 through to 2010 reported for SEIFA quintiles and deciles are reported using SEIFA 2006 at the Statistical Local Area (SLA) level. Data from 2011 are reported using SEIFA 2011, at the SLA level for 2011. Data for 2012 are reported using SEIFA 2011 at the SA2 (NSW VIC, QLD, WA, SA and TAS) or SLA level (ACT and NT). The AIHW considers the change from SEIFA 2006 to SEIFA 2011 to be a series break when applied to data supplied for this indicator, therefore SEIFA data for 2011 are not directly comparable with SEIFA data from previous years. | |
| Accessibility | The AIHW provides a variety of products that draw upon the NPDC. Published products available on the AIHW website are:   * *Australia’s mothers and babies* annual report * *Indigenous mothers and their babies, Australia 2001–2004* * METeOR – online metadata repository * National health data dictionary.   Ad-hoc data are also available on request (charges apply to recover costs). | |
| Interpretability | Supporting information on the use and quality of the Perinatal NMDS are published annually in Australia’s mothers and babies (Chapter 1), available in hard copy or on the AIHW website. Comprehensive information on the quality of Perinatal NMDS elements are published in *Perinatal National Minimum Data Set compliance evaluation: 2006-2009*. Readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator. More detailed information on the quality of Indigenous data that might affect interpretation of the indicator was published in *Indigenous mothers and their babies, Australia 2001–2004* (Chapter 1 and Chapter 5). | |
| Data Gaps/Issues Analysis | |  |
| Key data gaps /issues | The Steering Committee notes the following issues:   * Birthweight is included in the Perinatal National Minimum Data Set (NMDS) and data are complete for over 99.9 per cent of babies. * This measure only includes births of at least 20 weeks gestation or 400 grams birthweight. It excludes multiple births and stillbirths and the measure may therefore differ slightly from information presented in other publications on low birthweight. * The National Perinatal Data Collection (NPDC) includes information on the Indigenous status of the mother only. Since 2005, all jurisdictions have collected information on Indigenous status of the mother in accordance with the Perinatal NMDS. * No formal national assessment has been undertaken to determine completeness of the coverage or identification of Indigenous mothers in the NPDC. The current data have not been adjusted for under-identification of Indigenous status of the mother and thus jurisdictional comparisons of Indigenous data should not be made. * Remoteness data for 2010 and previous years are not directly comparable to remoteness data for 2011 and subsequent years. * SEIFA data for 2011 are not directly comparable with SEIFA data from previous years. | |

### Prevalence of risk factors to the health of Australians

#### Prevalence of overweight and obesity

Data quality information for this indicator has been sourced from the Australian Bureau of Statistics (ABS) with additional Steering Committee comments.

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| Indicator definition and description | |  |
| Indicator | Prevalence of risk factors to the health of Australians — Proportion of adults and children who are overweight or obese. | |
| Measure/s (computation) | Numerator:   * Number of people aged 18 years or over with a Body Mass Index (BMI) greater than or equal to 25, and number of children aged 5–17 years exceeding age and sex specific BMI values for overweight and obesity.   Denominator:   * Number of people aged 18 years or over and number of children aged 5–17 years, for whom height and weight measurements were taken.   Calculation: 100 × (Numerator ÷ Denominator) | |
| Data source/s | For the 2014 and 2015 Reports, the denominator and numerator for this indicator, for the general and non-indigenous population, use data from the full sample or Core component of the general population component of the ABS Australian Health Survey (AHS) from approximately 32 000 people, which is weighted to benchmarks for the total AHS in-scope estimated resident population (ERP) at 31 October 2011.  This information replaces data supplied for the 2013 Report, which was based on the National Health Survey (NHS) subset (20 500 people) of the full sample (32 000 people). The larger sample size (the full sample or core) supplied for the 2014 reporting cycle provides more accurate estimates and allows for analysis at a finer level of disaggregation. For more information on the structure of the AHS, see *Structure of the Australian Health Survey*.  For the 2015 Report, the denominator and numerator for the Aboriginal and Torres Strait Islander population use data from the full sample or Core component of the ABS 2012-13 Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) of approximately 13 000 people, which is weighted to benchmarks for the Australian Aboriginal and Torres Strait Islander ERP at 30 June 2011, based on the 2011 Census of Population and Housing.  This information replaces data supplied for the 2014 Report, which was based on the National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) subset (9300 people) of the full sample (13 000 people). The larger sample size used for the 2015 Report provides more accurate estimates and allows for analysis at a finer level of disaggregation. For more information on the structure of the AATSIHS, see *Structure of the Australian Aboriginal and Torres Strait Islander Health Survey*.  For information on scope and coverage, see the *Australian Aboriginal and Torres Strait Islander Health Survey: Users’ Guide* (cat. no. 4727.0.55.002) on the ABS website, www.abs.gov.au.  Data reported for 2007-08 are from the ABS 2007-08 NHS. Data reported for 2004-05 are from the ABS 2004-05 NHS and the ABS 2004-05 NATSIHS. | |
| Data Quality Framework Dimensions | |  |
| Institutional environment | The AHS and NATSIHS were collected, processed, and published by the ABS. The ABS operates within a framework of the *Census and Statistics Act 1905* and the *Australian Bureau of Statistics Act 1975*. These ensure the independence and impartiality from political influence of the ABS, and the confidentiality of respondents.  For more information on the institutional environment of the ABS, including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment on the ABS website, www.abs.gov.au. | |
| Relevance | The 201112 AHS and 2012-13 AATSIHS collected measured height and weight from persons aged 2 years and over. For the purposes of this indicator, Body Mass Index (BMI) values are derived from measured height and weight information using the formula: weight (kg) / height (m)2.  Despite some limitations, BMI is widely used internationally as a relatively straightforward way of measuring overweight and obesity. | |
| Timeliness | The AHS is conducted every three years over a 12 month period. Results from the Core component of the AHS were released in June 2013.  The AATSIHS is conducted over a 12 month period, approximately every 6 years. Results from the Core component of the 2012-13 AATSIHS were released in June 2014. The previous NATSIHS was conducted in 2004-05. | |
| Accuracy | The AHS was conducted in all States and Territories, excluding very remote areas. Non-private dwellings such as hotels, motels, hospitals, nursing homes and short-stay caravan parks were also not included in the survey. The exclusion of persons usually residing in very remote areas has a small impact on estimates, except for the NT, where such persons make up approximately 23 per cent of the population. The response rate for the 2011 12 Core component was 82 per cent. Results are weighted to account for non-response.  The AATSIHS was conducted in all States and Territories, including very remote areas. Non-private dwellings such as hotels, motels, hospitals, nursing homes and short-stay caravan parks were excluded from the survey. The response rate for the Core component of the 2012-13 AATSIHS was 80 per cent. Results are weighted to account for non-response.  As they are drawn from a sample survey, data for the indicator are subject to sampling error. Sampling error occurs because only a small proportion of the population is used to produce estimates that represent the whole population. Sampling error can be reliably estimated as it is calculated based on the scientific methods used to design surveys. Rates should be considered with reference to their Relative Standard Error (RSE). Estimates with RSEs between 25 per cent and 50 per cent should be used with caution. Estimates with RSEs greater than 50 per cent are generally considered too unreliable for general use.  The following comments apply to data for the general and non-Indigenous populations only.   * Data for overweight and obesity are not directly comparable to the 2004‑05 NHS due to the difference in collection methodology and possible erroneous estimation of respondent self-reported measurements in 2004‑05 * Data for the NT for 2011-12 are not comparable to previous years due to the increase in sample size. Data for the NT for 2007-08 should be used with caution due to large RSEs resulting from the small sample size. * RSEs for adult overweight and obesity rates by State/Territory and Remoteness Areas are within acceptable limits, except for remote Queensland for which data should be used with caution. * RSEs for child overweight and obesity rates by State/Territory and Remoteness Areas are within acceptable limits, except for inner regional WA and SA, outer regional New South Wales and Victoria, and total remote Australia, for which data should be used with caution, and for remote areas in Queensland, Western Australia and South Australia where rates are considered too unreliable for general use. * The breakdown by State/Territory and SEIFA quintiles for adults in general has sampling error within acceptable limits, except quintile 5 in the NT which should be used with caution. * Data by State/Territory and SEIFA quintiles for children in general have sampling error within acceptable limits, except for some quintiles in Tasmania, the Australian Capital Territory and Northern Territory which should be used with caution. Rates for quintile 5 in Tasmania and quintile 1 in the Australian Capital Territory are considered too unreliable for general use. * Sampling errors for BMI categories for adults by State/Territory are within acceptable limits, though rates of underweight for Tasmania and the ACT should be used with caution. * Sampling errors for BMI data for children by State/Territory are generally within acceptable limits, though rates of underweight for most States/Territories should be used with caution.   The following comments apply to data for the Aboriginal and Torres Strait Islander population:   * Data for overweight and obesity are not directly comparable to the 2004‑05 NATSIHS due to the difference in collection methodology and possible erroneous estimation of respondent self-reported measurements in 2004‑05. * Data collected on measured height, weight and waist circumference in the 2012‑13 AATSIHS used the same methodology and equipment as the 2011-12 NHS (neither survey collected self-reported measurements), so the two are directly comparable. | |
| Coherence | The methods used to construct the indicator are consistent and comparable with other collections and with international practise.  Most surveys, including Computer-Assisted Telephone Interviewing (CATI) health surveys conducted by the States and Territories, collect only self reported height and weight. There is a general tendency across the population for people to overestimate height and underestimate weight, which results in BMI scores based on self-reported height and weight to be lower than BMI scores based on measured height and weight. Therefore, NHS and NATSIHS data for 2004-05 are not comparable with 2011–13 data which are based on measured height and weight.  The age- and sex-specific cutoff points for BMI categories for children are from the work of Cole TJ, Bellizzi MC, Flegal KM & Dietz WH 2000*, Establishing a standard definition for child overweight and obesity worldwide: international survey*, BMJ 320:1240.  The AHS collected a range of other health-related information that can be analysed in conjunction with BMI. | |
| Accessibility | See *Australian Health Survey: First Results* (Cat. no. 4364.0.55.001) and *Australian Health Survey: Health Service Usage and Health Related Actions* (Cat. no. 4364.0.55.002) for an overview of results from the NHS component of the AHS. See: *Australian Health Survey: Updated Results* (Cat. no. 4364.0.55.003) for results from the Core component of AHS. Other information from this survey is also available on request.  The data for NATSIHS are available from the ABS website in the publication *Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia, 2012-13* (Cat. no. 4727.0.55.001). See *Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results* (Cat. no. 4727.0.55.006) for results from the Core component of the AATSIHS. Other information from the AATSIHS is also available from the ABS website, www.abs.gov.au. | |
| Interpretability | Information to aid interpretation of the data is available on the ABS website from the *Australian Health Survey: User Guide, 2011-13* (Cat. no. 4363.0.55.001) and the *Australian Aboriginal and Torres Strait Islander Health Survey: Users’ Guide, 2012-13* (Cat. no. 4727.0.55.002).  Many health-related issues are closely associated with age; therefore data for this indicator have been age-standardised to the 2001 total Australian population to account for differences in the age structures of the States and Territories. Age standardised rates should be used to assess the relative differences between groups, not to infer the rates that actually exist in the population.  Information for the 2015 Report for the Aboriginal and Torres Strait Islander population replaces data supplied for the 2014 Report which was based on the National Aboriginal and Torres Strait Islander Health Survey subset (9300 people) of the full sample (13 000 people). The larger sample size used for the 2015 reporting cycle provides more accurate estimates and allows for analysis at a finer level of disaggregation.  For information on how the results compare between the two samples, see *Comparison of Results in Australian Health Survey: Updated Results* (Cat. No. 4364.0.55.003). | |
| Data Gaps/Issues Analysis | |  |
| Key data gaps /issues | The Steering Committee notes the following issues:   * The data provide relevant information on the proportion of people who are overweight and obese. * Data for the total and non-Indigenous populations in the AHS do not include people living in very remote areas, which affects the comparability of the NT results. * Data by Indigenous status are not directly comparable over time as data for 2004‑05 were based on self-reported height and weight and data for 2011–13 are based on measured height and weight * Data are of acceptable accuracy. Some relative standard errors for disaggregations are greater than 25 per cent and these data should be used with caution. * AATSIHS data are only available every six years. An assessment of the relative speed of change in results for this indicator is required to determine whether more regular data collection is necessary. Subject to cost-benefit analysis, it is recommended that relevant questions be included in both the AATSIHS and the NATSISS, to provide data on a rotating three yearly cycle across the two collections. * The size of the standard errors mean that the survey data may not be adequate for measuring change over time. Small year to year movements may be difficult to detect if the size of the standard errors is large compared to the size of the difference between estimates. | |

#### Rates of current daily smokers

Data quality information for this indicator has been sourced from the Australian Bureau of Statistics (ABS) with additional Steering Committee comments.

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| Indicator definition and description | |  |
| Indicator | Prevalence of risk factors to the health of Australians — Rates of current daily smokers. | |
| Measure/s (computation) | Numerator:   * Number of persons aged 18 years or over who smoke tobacco every day.   Denominator:   * Number of people aged 18 years or over.   Calculation: 100 × (Numerator ÷ Denominator) | |
| Data source/s | For the 2014 and 2015 Reports, the denominator and numerator for this indicator, for the general and non-indigenous population, use data from the full sample or Core component of the general population component of the ABS Australian Health Survey (AHS) from approximately 32 000 people, which is weighted to benchmarks for the total AHS in-scope estimated resident population (ERP) at 31 October 2011.  This information replaces data supplied for the 2013 Report, which was based on the National Health Survey (NHS) subset (20 500 people) of the full sample (32 000 people). The larger sample size (the full sample or core) supplied for the 2014 reporting cycle provides more accurate estimates and allows for analysis at a finer level of disaggregation. For more information on the structure of the AHS, see *Structure of the Australian Health Survey*.  For the 2015 Report, the denominator and numerator for the Aboriginal and Torres Strait Islander population use data from the full sample or Core component of the ABS 2012-13 Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) of approximately 13 000 people, which is weighted to benchmarks for the Australian Aboriginal and Torres Strait Islander ERP at 30 June 2011, based on the 2011 Census of Population and Housing.  This information replaces data supplied for the 2014 Report, which was based on the National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) subset (9300 people) of the full sample (13 000 people). The larger sample size used for the 2015 Report provides more accurate estimates and allows for analysis at a finer level of disaggregation. For more information on the structure of the AATSIHS, see *Structure of the Australian Aboriginal and Torres Strait Islander Health Survey*.  For information on scope and coverage, see the *Australian Aboriginal and Torres Strait Islander Health Survey: Users’ Guide* (cat. no. 4727.0.55.002) on the ABS website, www.abs.gov.au.  Data reported for 2007-08 are from the ABS 2007-08 NHS and the ABS 2008 National Aboriginal and Torres Strait Islander Social Survey. | |
| Data Quality Framework Dimensions | |  |
| Institutional environment | The 2011-12 AHS and 2012-13 AATSIHS were collected, processed, and published by the Australian Bureau of Statistics (ABS). The ABS operates within a framework of the Census and Statistics Act 1905 and the Australian Bureau of Statistics Act 1975. These ensure the independence and impartiality from political influence of the ABS, and the confidentiality of respondents.  For more information on the institutional environment of the ABS, including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment on the ABS website, www.abs.gov.au. | |
| Relevance | The 2011-12 AHS and 2012-13 AATSIHS collected self-reported information on smoker status from persons aged 15 years and over. This refers to the smoking of tobacco, including manufactured (packet) cigarettes, roll-your-own cigarettes, cigars and pipes, but excluding smoking of non-tobacco products. The 2012-13 AATSIHS included Chewing tobacco was included in the 2012-13 AATSIHS but not the 2011‑12 AHS. The ‘current daily smoker’ category includes respondents who reported at the time of interview that they regularly smoked one or more cigarettes, cigars or pipes per day. | |
| Timeliness | The AHS is conducted every three years over a 12 month period. Results from the Core component of the AHS were released in June 2013.  The AATSIHS is conducted over a 12 month period, approximately every 6 years. Results from the Core component of the 2012-13 AATSIHS were released in June 2014. | |
| Accuracy | The AHS was conducted in all States and Territories, excluding very remote areas. Non-private dwellings such as hotels, motels, hospitals, nursing homes and short-stay caravan parks were also not included in the survey. The exclusion of persons usually residing in very remote areas has a small impact on estimates, except for the NT, where such persons make up approximately 23 per cent of the population. The response rate for the 2011‑12 Core component was 82 per cent. Results are weighted to account for non-response.  The AATSIHS was conducted in all States and Territories, including very remote areas. Non-private dwellings such as hotels, motels, hospitals, nursing homes and short-stay caravan parks were excluded from the survey. The response rate for the Core component of the 2012-13 AATSIHS was 80 per cent. Results are weighted to account for non-response. Results are weighted to account for non-response.  As they are drawn from a sample survey, data for the indicator are subject to sampling error. Sampling error occurs because only a small proportion of the population is used to produce estimates that represent the whole population. Sampling error can be reliably estimated as it is calculated based on the scientific methods used to design surveys. Rates should be considered with reference to their Relative Standard Error (RSE). Estimates with RSEs between 25 per cent and 50 per cent should be used with caution. Estimates with RSEs greater than 50 per cent are generally considered too unreliable for general use.  The following comments apply to data for the general and non-Indigenous populations:   * Data for the NT in 2011-12 are not comparable to previous years due to the increase in sample size. Data for the NT for 2007-08 should be used with caution due to large RSEs resulting from the small sample size. * This indicator generally has acceptable levels of sampling error for State/Territory by sex and age, for persons under the age of 65 years. For persons aged 65 years or over, data should be used with caution. Rates for 18-24 year old males in the ACT and for 18-24 year old females in SA, the NT and the ACT should be used with caution. * RSEs for adult smoking rates by State/Territory for remote areas other than in the NT, and for outer regional Victoria, are greater than 25% and should either be used with caution or are considered too unreliable for general use. * Adult smoking rates generally have acceptable levels of sampling error for State/Territory and SEIFA quintiles, though some rates for Victoria, Queensland, South Australia, Tasmania, the ACT and the NT should either be used with caution or are considered too unreliable for general use.   The following comments apply to data for the Aboriginal and Torres Strait Islander population:   * Smoking questions were changed in the 2012-13 AATSIHS to include chewing tobacco in order to account for potential high levels of use among Aboriginal and Torres Strait Islander people. Data for 2012-13 are considered comparable with data for the Aboriginal and Torres Strait Islander population for 2007-08, and with data for the non-Indigenous population for all years. * This indicator has acceptable levels of sampling error, with RSEs of less than 25 per cent for all states and territories. | |
| Coherence | The methods used to construct the indicator are consistent and comparable with other collections and with international practice. The AHS collected a range of other health-related information that can be analysed in conjunction with smoker status.  Other non-ABS collections, such as the National Drug Strategy Household Survey (NDSHS), report estimates of smoker status. Results from the recent NDSHS in 2010 show slightly lower estimates for current daily smoking than in the 2011-12 AHS. These differences may be due to the greater potential for non-response bias in the NDSHS and the differences in collection methodology. | |
| Accessibility | See *Australian Health Survey: First Results* (Cat. no. 4364.0.55.001) and *Australian Health Survey: Health Service Usage and Health Related Actions* (Cat. no. 4364.0.55.002) for an overview of results from the NHS component of the AHS. See: *Australian Health Survey: Updated Results* (Cat. no. 4364.0.55.003) for results from the Core component of AHS. Other information from this survey is also available on request.  The data for NATSIHS are available from the ABS website in the publication *Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia, 2012-13* (Cat. no. 4727.0.55.001). See *Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results* (Cat. no. 4727.0.55.006) for results from the Core component of the AATSIHS. Other information from the AATSIHS is also available from the ABS website, www.abs.gov.au. | |
| Interpretability | Information to aid interpretation of the data is available on the ABS website from the *Australian Health Survey: User Guide, 2011-13* (Cat. no. 4363.0.55.001) and the *Australian Aboriginal and Torres Strait Islander Health Survey: Users’ Guide, 2012-13* (Cat. no. 4727.0.55.002).  Many health-related issues are closely associated with age; therefore data for this indicator have been age-standardised to the 2001 total Australian population to account for differences in the age structures of the States and Territories. Age standardised rates should be used to assess the relative differences between groups, not to infer the rates that actually exist in the population.  Information for the 2015 Report for the Aboriginal and Torres Strait Islander population replaces data supplied for the 2014 Report which was based on the National Aboriginal and Torres Strait Islander Health Survey subset (9300 people) of the full sample (13 000 people). The larger sample size used for the 2015 reporting cycle provides more accurate estimates and allows for analysis at a finer level of disaggregation  For information on how the results compare between the two samples, see *Comparison of Results in Australian Health Survey: Updated Results* (Cat. No. 4364.0.55.003). | |
| Data Gaps/Issues Analysis | |  |
| Key data gaps /issues | The Steering Committee notes the following issues:   * The data provide relevant information on the proportion of adults who reported that they are daily smokers. * Data for the total and non-Indigenous populations in the AHS do not include people living in very remote areas, which affects the comparability of the NT results. * Data are of acceptable accuracy. Some relative standard errors for age, Indigenous, SES and remoteness disaggregations are greater than 25 per cent and these data should be used with caution. * The size of the RSEs mean that the survey data may not be adequate for measuring change over time. Small year to year movements may be difficult to detect if the size of the standard errors is large compared to the size of the difference between estimates. | |

#### Levels of risky alcohol consumption

Data quality information for this indicator has been sourced from the Australian Bureau of Statistics (ABS) with additional Steering Committee comments.

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| Indicator definition and description | |  |
| Indicator | Prevalence of risk factors to the health of Australians — Levels of risky alcohol consumption. | |
| Measure/s (computation) | Numerator:   * Number of persons aged 18 years or over who reported an average of more than 2 standard drinks per day in the last week.   Denominator:   * Number of people aged 18 years or over.   Calculation: 100 × (Numerator ÷ Denominator) | |
| Data source/s | For the 2014 and 2015 Reports, the denominator and numerator for this indicator, for the general and non-indigenous population, use data from the full sample or Core component of the general population component of the ABS Australian Health Survey (AHS) from approximately 32 000 people, which is weighted to benchmarks for the total AHS in-scope estimated resident population (ERP) at 31 October 2011. For information on scope and coverage, see the *Australian Health Survey: Users’ Guide* (Cat. no. 4363.0.55.001) on the ABS website, www.abs.gov.au.  For the 2014 and 2015 Reports, the denominator and numerator for the Aboriginal and Torres Strait Islander population use data from the National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) component of the 2012-13 Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) from approximately 9300 people, which is weighted to benchmarks for the Aboriginal and Torres Strait Islander ERP at 30 June 2011. For more information on the structure of the AATSIHS, see *Structure of the Australian Aboriginal and Torres Strait Islander Health Survey*.  Data reported for 2007-08 are from the ABS 2007-08 NHS. Data reported for 2004-05 are from the ABS 2004-05 NHS and the ABS 2004-05 NATSIHS. | |
| Data Quality Framework Dimensions | |  |
| Institutional environment | The AHS and NATSIHS were collected, processed, and published by the Australian Bureau of Statistics (ABS). The ABS operates within a framework of the Census and Statistics Act 1905 and the Australian Bureau of Statistics Act 1975. These ensure the independence and impartiality from political influence of the ABS, and the confidentiality of respondents.  For more information on the institutional environment of the ABS, including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment on the ABS website, www.abs.gov.au. | |
| Relevance | The 2011-12 NHS and 2012-13 NATSIHS collected self-reported information on alcohol consumption from persons aged 15 years and over. Respondents were asked to report the number of drinks of each type they had consumed, the size of the drinks, and, where possible, the brand name(s) of the drink(s) consumed on each of the most recent three days in the last week on which they had consumed alcohol.  Intake of alcohol refers to the quantity of alcohol contained in any drinks consumed, not the quantity of the drinks.  To measure against the 2009 guidelines, reported quantities of alcoholic drinks consumed were converted to millilitres (mls) of alcohol present in those drinks, using the formula:   * alcohol content of the type of drink consumed (%) x number of drinks (of that type) consumed x vessel size (in millilitres).   An average daily amount of alcohol consumed was calculated (i.e. an average over the 7 days of the reference week), using the formula:   * average consumption over the 3 days for which consumption details were recorded x number of days consumed alcohol / 7.   According to average daily alcohol intake over the 7 days of the reference week, persons who consumed more than 2 standard drinks on any day were at risk of long term health problems. | |
| Timeliness | The AHS is conducted every three years over a 12 month period. Results from the 2011-12 NHS component of the AHS were released in October 2012.  The AATSIHS is conducted over a 12 month period, approximately every 6 years. Results from the NATSIHS component of the AATSIHS were released in November 2013. The previous NATSIHS was conducted in 2004-05. | |
| Accuracy | The AHS was conducted in all States and Territories, excluding very remote areas. Non-private dwellings such as hotels, motels, hospitals, nursing homes and short-stay caravan parks were also not included in the survey. The exclusion of persons usually residing in very remote areas has a small impact on estimates, except for the NT, where such persons make up approximately 23 per cent of the population. The response rate for the 2011‑12 Core component was 82 per cent. Results are weighted to account for non-response.  The AATSIHS was conducted in all States and Territories, including very remote areas. Non-private dwellings such as hotels, motels, hospitals, nursing homes and short-stay caravan parks were excluded from the survey. The final response rate for the 2012-13 NATSIHS component was 80 per cent. Results are weighted to account for non-response.  As they are drawn from a sample survey, data for the indicator are subject to sampling error. Sampling error occurs because only a small proportion of the population is used to produce estimates that represent the whole population. Sampling error can be reliably estimated as it is calculated based on the scientific methods used to design surveys. Rates should be considered with reference to their Relative Standard Error (RSE). Estimates with RSEs between 25 per cent and 50 per cent should be used with caution. Estimates with RSEs greater than 50 per cent are generally considered too unreliable for general use.  The collection of accurate data on quantity of alcohol consumed is difficult, particularly where recall is concerned, given the nature and possible circumstances of consumption. The use of the one week reference period (with collection of data for the most recent three days in the last week on which the person drank) is considered to be short enough to minimise recall bias but long enough to obtain a reasonable indication of drinking behaviour. While the last week exact recall method may not always reflect the usual drinking behaviour of the respondent at the individual level, at the population level this is expected to largely average out.  The collection and coding of individual brands and container size ensures that no mental calculation is required of the respondent in reporting standard drinks, and is considered to eliminate potential for the underestimation bias which is known to occur when people convert drinks into standard drinks.  The following comments apply to data for the general and non-Indigenous populations only.   * Data for the NT in 2011-12 are not comparable to previous years due to the increase in sample size in 2011-12. Data for the NT for 2007-08 should be used with caution due to large RSEs resulting from the small sample size * This indicator generally has acceptable levels of sampling error for State/Territory and Remoteness Areas, except for remote areas where some rates are considered too unreliable for general use. The breakdown by State/Territory and SEIFA quintiles in general has sampling error within acceptable limits, except for the two lowest quintiles in the ACT which should either be used with caution or are considered too unreliable for general use. | |
| Coherence | The AHS and AATSIHS collected a range of other health-related information that can be analysed in conjunction with alcohol risk level. For more detailed information see the *Australian Health Survey: Users’ Guide* and the *Australian Aboriginal and Torres Strait Islander Health Survey: Users’ Guide*, available on the ABS website.  Aggregate levels of alcohol consumption implied by the AHS are somewhat less than the estimates of apparent consumption of alcohol based on the availability of alcoholic beverages in Australia from taxation and customs data, see *Apparent Consumption of Alcohol, 2010-11* (Cat. no. 4307.0.55.001). This suggests a tendency towards under-reporting of alcohol consumption in self-report surveys.  Other collections, such as the National Drug Strategy Household Survey (NDSHS), report against the same NHMRC guidelines. Results from the most recent NDSHS in 2010 show slightly lower estimates for long-term harm from alcohol than in the 2011-13 AHS. These differences may be due to the greater potential for non-response bias in the NDSHS and the differences in collection methodology. | |
| Accessibility | See *Australian Health Survey: First Results* (Cat. no. 4364.0.55.001) and *Australian Health Survey: Health Service Usage and Health Related Actions* (Cat. no. 4364.0.55.002) for an overview of results from the NHS component of the AHS. See: *Australian Health Survey: Updated Results* (Cat. no. 4364.0.55.003) for results from the Core component of AHS. Other information from this survey is also available on request.  The data for NATSIHS are available from the ABS website in the publication *Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia, 2012-13* (Cat. no. 4727.0.55.001). Other information from the survey is available on request. | |
| Interpretability | Information to aid interpretation of the data is available on the ABS website from the *Australian Health Survey: User Guide, 2011-13* (Cat. no. 4363.0.55.001) and the *Australian Aboriginal and Torres Strait Islander Health Survey: Users’ Guide, 2012-13* (Cat. no. 4727.0.55.002).  Many health-related issues are closely associated with age; therefore data for this indicator have been age-standardised to the 2001 total Australian population to account for differences in the age structures of the States and Territories. Age standardised rates should be used to assess the relative differences between groups, not to infer the rates that actually exist in the population. | |
| Data Gaps/Issues Analysis | |  |
| Key data gaps /issues | The Steering Committee notes the following issues:   * The data provide relevant information on the proportion of adults who are at risk of long-term harm from alcohol. * Data for the total and non-Indigenous populations in the AHS do not include people living in very remote areas, which affects the comparability of results for the NT. * Data are of acceptable accuracy. Some relative standard errors for Indigenous status, SES and remoteness disaggregations are greater than 25 per cent and should be used with caution. * The size of the standard errors means that the survey data may not be adequate for measuring change over time. Small year to year movements may be difficult to detect if the size of the standard errors is large compared to the size of the difference between estimates. * AATSIHS data are only available every six years. An assessment of the relative speed of change in results for this indicator is required to determine whether more regular data collection is necessary. Subject to cost-benefit analysis, it is recommended that relevant questions be included in both the AATSIHS and the NATSISS, to provide data on a rotating three yearly cycle across the two collections. | |

### Selected potentially preventable diseases

#### Incidence of selected cancers

Data quality information for this indicator has been sourced from the Australian Institute of Health and Welfare (AIHW) with additional Steering Committee comments.

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| Indicator definition and description | |  |
| Indicator | Selected potentially preventable diseases — Incidence of selected cancers | |
| Measure/s (computation) | The selected cancers of public health importance are bowel cancer, lung cancer, melanoma of the skin, breast cancer in females and cervical cancer.  For bowel cancer, lung cancer and melanoma, the numerator is the number of new cases occurring in the Australian population in the reported year. The denominator is the total Australian population for the same year.  For breast and cervical cancer the numerator is the number of new cases occurring in the Australian female population in the reported year. The denominator is the total Australian female population for the same year.  Calculation is 100 000 × (Numerator ÷ Denominator), calculated separately for each type of cancer, presented as a rate per 100 000 and age-standardised to the Australian population as at 30 June 2001. | |
| Data source/s | Numerators: Australian Cancer Database (ACD)  Denominators:   * For bowel cancer, lung cancer and melanoma: Australian Bureau of Statistics (ABS) Estimated Resident Population (ERP). * For breast and cervical cancer: ABS ERP for female population. * For data by Indigenous status: ABS *Aboriginal and Torres Strait Islander Estimates and Projections* (Indigenous population) Series B. * For data by Remoteness area: ABS ERPs for Australian Standard Geographical Classifications (ASGC) Remoteness Areas. * For data by socioeconomic status: calculated by AIHW using the ABS 2011 Index of Relative Socio-economic Disadvantage (IRSD) and ERPs by Statistical Area Level 2 (SA2). Each SA2 in Australia is ranked by IRSD score and divided into quintiles and deciles in a population-based manner, such that each quintile has approximately 20 per cent of the population and each decile has approximately 10 per cent of the population. | |
| Data Quality Framework Dimensions | |  |
| Institutional environment | The National Cancer Statistics Clearing House (NCSCH), housed at the AIHW, is a collaborative partnership between the AIHW and the Australasian Association of Cancer Registries (AACR).  Cancer incidence data are supplied to the AIHW by state and territory cancer registries. These data are compiled by AIHW to form the Australian Cancer Database (ACD). All jurisdictions have legislation requiring mandatory reporting of all cancer cases with the exception of basal cell carcinoma of the skin and squamous cell carcinoma of the skin. | |
| Relevance | The data used to calculate this indicator are accurate and of high quality. The mandatory reporting of cancers and the use of ERPs based on Census data for denominators provides the most comprehensive data coverage possible. The data are appropriate for this indicator. | |
| Timeliness | Data available for the 2015 Report are based on cancers diagnosed in 2007–2011, noting that cancers for NSW and ACT for 2010 and 2011 are based on estimates. | |
| Accuracy | The 2010 and 2011 incidence data for NSW and the ACT were not available for inclusion in the 2011 version of the ACD. The development of the new NSW Cancer Registries system has resulted in a delay in processing incidence data for 2010 onwards and therefore the most recent NSW data available for inclusion in the ACD are for 2009. Full details about this situation are given on the web page www.cancerinstitute.org.au/data-and-statistics/accessing-our-data/availability-of-nsw-central-cancer-registry-data. As the coding of ACT cancer notifications is contracted to the NSW Cancer Registry, the most recent data available for the ACT are also for 2009. The 2010 and 2011 incidence data for NSW and the ACT were estimated by the AIHW. Although the estimation procedure has been shown to be reasonably accurate for estimating overall cancer incidence, its accuracy with respect to individual cancers will vary. Until the actual 2010 and 2011 cancer data are available from these jurisdictions caution should be exercised when comparing data for 2010 and 2011 for NSW, the ACT and national totals with data from previous years. The estimates of 2010 and 2011 incidence in NSW and ACT cannot be disaggregated by Indigenous status, remoteness area or socioeconomic status. The national totals for these tables do not include NSW and ACT.  The 2009 incidence data for NSW and the ACT provided to the AIHW excluded the provisional death-certificate-only (DCO) cases. The reason the provisional DCO cases were not available is explained on the web page www.cancerinstitute.org.au/ data-and-statistics/accessing-our-data/availability-of-nsw-central-cancer-registry-data. The AIHW has estimated the number of provisional DCO cases in 2009 for each cancer, sex and age group based on the numbers observed for 2004–2008. Overall for the five cancers covered in the Indicator, about 1.2 per cent of NSW cases and 1.4 per cent of ACT cases are estimated DCO cases. The percentage varies by cancer type.  For Indigenous status, the numerator for ‘Indigenous’ is the number of people who self-reported that they were Indigenous at the time of diagnosis. ‘Other’ includes those who self-reported that they were not Indigenous at the time of diagnosis and those who chose not to identify as either Indigenous or non-Indigenous.  The completeness of Indigenous identification in cancer registry data varies between jurisdictions. Those with sufficiently complete identification to enable reliable reporting of cancer incidence rates are NSW, Qld, WA and NT. Indigenous data for the other jurisdictions are not published. As stated above, 2010 and 2011 incidence data for NSW are estimated and Indigenous status for these estimates is not available. Therefore, for 2010 and 2011 the national totals data exclude NSW and the figures therein cannot be compared to their pre-2010 counterparts.  Socioeconomic status rankings (by IRSD score) are calculated by SA2 using a population-based method at the Australia-wide level. That is, the quintiles are national quintiles, not state and territory quintiles.  An SA2-to-remoteness-area concordance and SA2-to-socioeconomic-status concordance were used to allocate remoteness area and socioeconomic status to each record on the ACD based on the person’s SA2 of residence at time of diagnosis.  Caution is required when examining differences across remoteness area and socioeconomic status categories. The SA2 of a person is determined by the cancer registry based on the address provided by the person. Some people may supply an address other than that where they normally reside or the details the person provides may not correspond to a valid address meaning that their cancer record cannot be allocated to a remoteness area or socioeconomic status category at all. Such records are excluded from the tables and this may affect some remoteness area and socioeconomic categories more than others. Also, because the concordances are based on the 2011 census, SA2 boundaries may have changed over time and these can create inaccuracies.  Due to the very small number of diagnoses involved, disaggregation by Indigenous status, or remoteness area, or socioeconomic status by state and territory is not necessarily robust.  This indicator only counts one year of incidence data. For jurisdictions that record relatively small numbers of cancers, rates may fluctuate widely from year to year; these changes should be interpreted with caution.  Incidence rates based on counts of between 1 and 4 persons have been suppressed because of statistical unreliability (relative standard error (RSE) ≥ 50 per cent).  This indicator is calculated on data that have been supplied to the AIHW and undergone extensive checks at both the source cancer registry and the AIHW. The state and territory cancer registries have checked the tables and given their approval for the AIHW to supply them to the Productivity Commission. | |
| Coherence | These data are published annually by the AIHW. While there are sometimes changes to coding for particular cancers, it is possible to map coding changes to make meaningful comparisons over time.  Not all state and territory cancer registries use the same ICD-10 code groupings to classify certain cancers, e.g. the AIHW defines bowel cancer as ICD-10 codes C18–C20 whereas some cancer registries also include C21. This may mean that data presented here are different to those reported by jurisdictional cancer registries, for certain cancers. The definitions used in this Indicator are as follows.   * Bowel cancer: ICD-10 codes C18–C20 * Lung cancer: ICD-10 codes C33–C34 * Melanoma of the skin: ICD-10 code C43 * Breast cancer in females: ICD-10 code C50 and sex female * Cervical cancer: ICD-10 code C53.   The Cancer Institute NSW (CINSW) uses an imputation method to impute missing Indigenous status for reporting purposes. This may lead to differences between the Indigenous rates presented for NSW in this Indicator and the Indigenous rates presented in CINSW incidence reports.  The incidence rate in Indigenous Australians may fluctuate considerably from year to year due to the behaviour of rare events in small populations. | |
| Accessibility | The NCSCH provides summary cancer incidence and mortality data annually via the AIHW website where they can be downloaded free of charge. A biennial report, *Cancer in Australia*, is published and is also available on the AIHW website where it can be downloaded without charge. More specialised data can be requested via the AIHW website. | |
| Interpretability | While numbers of new cancers are easy to interpret, calculation of age-standardised rates is more complex and the concept may be confusing to some readers. Information on how and why age-standardised rates have been calculated and how to interpret them is available in all AIHW cancer publications presenting data in this format, for example, *Cancer in Australia: an overview, 2014*. Information about the ACD is available on the AIHW website. | |
| Data Gaps/Issues Analysis | |  |
| Key data gaps /issues | The Steering Committee notes the following issues:   * 2010 and 2011 incidence data for NSW and ACT were not available for inclusion in the 2011 version of the ACD. The development of the new NSW Cancer Registries system has resulted in a delay in processing incidence data for 2010 onwards and therefore the most recent NSW data available for inclusion in the ACD are for 2009. Full details about this situation are given on the web page www.cancerinstitute.org.au/data-and-statistics/accessing-our-data/availability-of-nsw-central-cancer-registry-data. As the coding of ACT cancer notifications is contracted to the NSW Cancer Registry, the most recent data available for the ACT are also for 2009. The 2010 and 2011 incidence data for NSW and the ACT were estimated by the Australian Institute of Health and Welfare (AIHW). Although the estimation procedure has been shown to be reasonably accurate for estimating overall cancer incidence, its accuracy with respect to individual cancers will vary. Until the actual 2010 and 2011 cancer data are available from these jurisdictions caution should be exercised when comparing the 2010 and 2011 NSW, ACT and Australian data with data from previous years. The estimates of 2010 and 2011 incidence in NSW and ACT cannot be disaggregated by Indigenous status, remoteness area or socioeconomic status. The Australian totals for these tables do not include NSW and ACT. * For jurisdictions that record relatively small numbers of cancers, rates may fluctuate widely from year to year; these changes over time should be interpreted with caution. * The completeness of Indigenous identification in cancer registry data varies between jurisdictions. Those with sufficiently complete identification to enable reliable reporting of cancer incidence rates are NSW, Qld, WA and NT. Indigenous data for the other jurisdictions are not published. * The Cancer Institute NSW (CINSW) uses an imputation method to impute missing Indigenous status for reporting purposes. This may lead to differences between the Indigenous rates presented for NSW in this Indicator and the Indigenous rates presented in CINSW incidence reports. * The incidence rate for Indigenous Australians may fluctuate considerably from year to year due to the behaviour of rare events in small populations. * Remoteness area and socioeconomic status are based on Statistical Area Level 2 (SA2) of residential address at the time of diagnosis. * Incidence rates based on counts of between 1 and 4 persons have been suppressed because of statistical unreliability (RSE ≥ 50 per cent). | |

#### Incidence of heart attacks (acute coronary events)

Data quality information for this indicator has been sourced from the Australian Institute of Health and Welfare (AIHW) with additional Steering Committee comments.

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| Indicator definition and description | |  |
| Indicator | Selected potentially preventable diseases — Incidence of heart attacks (acute coronary events). | |
| Measure/s (computation) | Number of deaths recorded with an underlying cause of acute coronary heart disease (ICD-10 codes I20–I24) (a) plus the number of non-fatal hospitalisations with a principal diagnosis of acute myocardial infarction (ICD-10-AM I21) or unstable angina (ICD-10-AM I20.0) that do not end in a transfer to another acute hospital (b). For ages 25 years and over.  Denominator: Total population aged 25 years and over for year in question.  Rates: 100,000 x (numerator ÷ denominator).  Age specific rates are presented for each 10 year age group 25 years or over. Jurisdiction specific rates are provided for each state/territory.  Total rates are directly age-standardised to the 2001 Australian population using 10 year age groups.  Indigenous  National incidence estimates for Indigenous and other Australians are calculated based on data from NSW, Qld, SA, WA and NT only.  Indigenous rates are directly age-standardised to the 2001 Australian population using 10 year age groups.  The estimates for Indigenous and Other Australians are derived using only data from the five jurisdictions where the quality of identification is considered reasonable in both the NHMD and the NMD (NSW, Qld, WA, SA and NT). | |
| Data source/s | Numerator: AIHW National Hospital Morbidity Database (NHMD), AIHW National Mortality Database (NMD)  Denominator:   * For total population: Australian Bureau of Statistics (ABS) Estimated Resident Population (ERP) as at (ERP for 2007 to 2011 are final, rebased to 2011 Census; ERP for 2012 is preliminary). * For data by Indigenous status: ABS *Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 2001 to 2026* (Series B). | |
| Data Quality Framework Dimensions | |  |
| Institutional environment | The AIHW has calculated this indicator using data extracted from the AIHW NHMD, the NMD and ABS population data.  The AIHW is a national agency set up by the Australian Government under the Australian Institute of Health and Welfare Act 1987 to provide reliable, regular and relevant information and statistics on Australia’s health and welfare. It is an independent statutory authority established in 1987, governed by a management board, and accountable to the Australian Parliament through the Health portfolio.  The AIHW aims to improve the health and wellbeing of Australians through authoritative health and welfare information and statistics. It collects and reports information on a wide range of topics and issues, ranging from health and welfare expenditure, hospitals, disease and injury, and mental health, to ageing, homelessness, disability and child protection.  The Institute also plays a role in developing and maintaining national metadata standards. This work contributes to improving the quality and consistency of national health and welfare statistics. The Institute works closely with governments and non-government organisations to achieve greater adherence to these standards in administrative data collections to promote national consistency and comparability of data and reporting.  One of the main functions of the AIHW is to work with the states and territories to improve the quality of administrative data and, where possible, to compile national datasets based on data from each jurisdiction, to analyse these datasets and disseminate information and statistics.  The Australian Institute of *Health and Welfare Act 1987*, in conjunction with compliance to the *Privacy Act 1988 (Commonwealth)*, ensures that the data collections managed by the AIHW are kept securely and under the strictest conditions with respect to privacy and confidentiality.  For further information see the AIHW website www.aihw.gov.au. | |
| Relevance | The data provide an estimate of the incidence of acute coronary events in Australia and in each jurisdiction, based on administrative data currently available. Non-fatal events are estimated from the NHMD and fatal events from the NMD.  It is an estimate of ‘events’, not individuals. It should be noted that an individual may have multiple events in the one year or in different years. Each would be counted. Further, an individual may have one acute coronary event which resulted in multiple hospitalisations, due to transfers for treatment and on-going care. In the NHMD these are recorded as multiple unlinked hospital episodes. The method of estimation attempts to take account of duplicate events in the databases by excluding hospitalisations ending in a transfer to another acute hospital (so that each acute coronary syndrome (ACS) event is counted only once, regardless of the number of hospitalisation episodes per event) and by excluding hospitalisations for ACS ending in death in hospital (as these should be picked up in the NMD data).  The method of estimation has been developed based on an analysis of current hospital and deaths data (AIHW 2011*, Monitoring acute coronary syndrome using national hospital data: an information paper on trends and issues*, Cat. no. CVD 57, Canberra) www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=10737420971, and validated using linked data from WA and NSW (AIHW 2014, *Acute coronary syndrome: validation of the method used to monitor incidence in Australia*,  Cat. no. CVD 68. Canberra) www.aihw.gov.au/WorkArea/DownloadAsset.aspx? id=60129547560.  The year in which the event occurred is determined from the separation date for hospitalisations, and from the year of registration of death. Data are reported by the state or territory of usual residence of the person at the time of hospitalisation or death.  Variability across jurisdictions (particularly in hospital transfer rates) indicates that the method of estimation may lead to an underestimation of incidence in some jurisdictions. This variation may be due to differences in treatment and referral patterns. Rates for Indigenous and Other Australians are based on data from those jurisdictions where the quality of identification is considered reasonable in both the NHMD and the NMD. Only NSW, Queensland, WA, SA and the NT are included in the estimates reported by Indigenous status. Rates for Other Australians are calculated by subtracting Indigenous estimates from total estimates for the five jurisdictions divided by the population of Other Australians in those jurisdictions. Other Australians therefore includes non-Indigenous people and people whose Indigenous status was not stated or inadequately described. | |
| Timeliness | This indicator reports the latest information available (for years 2007 to 2012). | |
| Accuracy | Recent validation work based on linked and unlinked data from WA and NSW has shown that the method underestimates the incidence of acute coronary events in at least those states. Nonetheless, these estimates provide a reasonable measure of the incidence of acute coronary events and may be useful for recording and monitoring each jurisdiction’s progress over time.  Comparison between jurisdictions should not be made as the validation work suggested variations in the under-count of acute coronary event rates, as observed in WA and NSW (6% in WA and 11% in NSW in 2007). Factors such as differing treatment and referral patterns across states/territories are likely to have an impact on administrative records and affect jurisdictional comparability.  The accuracy of the estimates will depend on the accuracy of coding in the NHMD and the NMD (see data sources for DQS for each data source). In particular the accuracy of coding of principal diagnosis, hospital transfers, deaths in hospital and underlying cause of death are central to the accuracy of the estimates.  The accuracy of Indigenous estimates is also reliant on the appropriate identification of Indigenous people in the NHMD and the NMD. Only five jurisdictions are considered to have reasonable quality Indigenous identification in both datasets required (the NHMD and the NMD) to estimate this indicator. The five jurisdictions are NSW, QLD, WA, SA and the NT. Indigenous counts for the NT exclude acute coronary events treated in the private hospital in the NT. All non-fatal events treated in the private hospital in the NT are therefore included in the incidence counts for other Australians.  Data for 2010 have been adjusted for the additional deaths arising from outstanding registrations of deaths in Queensland in 2010. Deaths occurring between 1992 and 2006 but registered in 2010 by the Queensland Registry of Births, Deaths and Marriages are excluded from the estimates for Indigenous and Other Australians. For more details please refer to Technical note 3 in Causes of death, Australia, 2010 (ABS cat. no. 3303.0).  NMD data for 2010 and 2011 have been revised since the previous reporting cycle. In this reporting cycle, deaths registered in 2010 and earlier are based on the final version of cause of death data; deaths registered in 2011 and 2012 are based on revised and preliminary versions respectively and are subject to further revision by the ABS. | |
| Coherence | This is the third year in which this indicator has been reported. This is the first year in which this indicator is reported for each jurisdiction. | |
| Accessibility | The AIHW provide a variety of products that draw upon the NMD and NHMD including online data cubes and reports.  These products may be accessed on the AIHW website:   * www.aihw.gov.au/hospitals-data/ * www.aihw.gov.au/deaths/ | |
| Interpretability | NHMD  The NHMD data were supplied to the AIHW by state and territory health authorities. The state and territory health authorities received these data from public and private hospitals. States and territories use these data for service planning, monitoring, and internal and public reporting. Hospitals may be required to provide data to states and territories through administrative arrangements, contractual requirements or legislation.  The scope of the NHMD is episodes of care for admitted patients in essentially all hospitals in Australia, including public and private acute and psychiatric hospitals, free-standing day hospital facilities, alcohol and drug treatment hospitals and dental hospitals. Hospitals operated by the Australian Defence Force, corrections authorities and in Australia's off-shore territories are not included.  The hospital separations data do not include episodes of non-admitted patient care provided in outpatient clinics or emergency departments.  States and territories supplied these data to the AIHW under the terms of the National Health Information Agreement.  The data quality statement for the AIHW National Hospital Morbidity Database can be found in http://meteor.aihw.gov.au/content/index.phtml/itemId/568730 with further data quality information in Appendix 1 of Australian hospital statistics 2012-13 or at www.aihw.gov.au/publication-detail/?id=60129546922  NMD  The AIHW NMD contains cause of death information for all deaths registered in Australia. Deaths data are provided to the AIHW by the Registries of Births, Deaths and Marriages and the National Coronial Information System and coded by the ABS. The data are maintained by the AIHW in the National Mortality Database.  The data quality statements for the AIHW National Mortality Database can be found in the following ABS publications:   * ABS Quality declaration summary for Causes of death, Australia (Cat. no. 3303.0) www.abs.gov.au/ausstats/abs@.nsf/mf/3303.0/ and * ABS *Quality declaration summary for Deaths, Australia* (Cat. no. 3302.0) www.abs.gov.au/ausstats/abs@.nsf/mf/3302.0/. | |
| Data Gaps/Issues Analysis | |  |
| Key data gaps /issues | The Steering Committee notes the following issues:   * This indicator estimates the incidence of acute coronary events from the National Hospital Morbidity Database (NHMD) and the National Mortality Database (NMD). * The methodology for estimating the incidence of acute coronary events is based on AIHW analysis of hospital and mortality data, and has been validated using linked data from WA and NSW. * The accuracy of the estimates is reliant on the accuracy and consistency of coding of the principal diagnosis and underlying cause of death in each jurisdiction. It also relies on the accuracy of coding of transfers to another acute hospital and of death in hospital. * Comparisons between jurisdictions should not be made as variations in key variables (particularly in transfer rates between hospitals) are likely to impact on jurisdictional comparability. The validation study showed an underestimation of the incidence of acute coronary events in WA and NSW. The extent of this cannot be measured precisely for other jurisdictions without linked data sets for all states and territories. * National estimates by age and sex, are derived using data from all jurisdictions. * Estimates for each jurisdiction are derived using state/territory of usual residence. * Estimates for Indigenous and other Australians are derived using only data from the five jurisdictions where the quality of identification is considered reasonable in both the NHMD and the NMD (NSW, Queensland, WA, SA and NT). | |

#### Prevalence of type 2 diabetes

Data quality information for this indicator has been sourced from the Australian Bureau of Statistics (ABS) with additional Steering Committee comments.

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| Indicator definition and description | |  |
| Indicator | Selected potentially preventable diseases — Prevalence of type 2 diabetes | |
| Measure/s (computation) | Numerator:   * number of persons aged 18 years or over with known diabetes (type 2) or newly diagnosed diabetes as determined by a fasting plasma glucose test. * number of persons aged 25 years and over with known diabetes (Type 2) or newly diagnosed diabetes as determined by a fasting plasma glucose test (supplementary measure).   Denominator:   * Number of persons aged 18 years and over * Number of persons aged 18 years and over(supplementary measure). | |
| Data source/s | The numerator and denominator for this indicator for the general and non-Indigenous populations use data from the 2011-12 National Health Measures Survey (NHMS) component of the Australian Bureau Statistics (ABS) Australian Health Survey (AHS) (approximately 9500 people aged 18 years or over), which is weighted to benchmarks for the total AHS in-scope population as at 31 October 2011 derived from the Estimated Resident Population (ERP).  For information on the structure of the AHS, see *Structure of the Australian Health Survey* on the ABS website, www.abs.gov.au. For information on scope and coverage, see *the Australian Health Survey: Users’ Guide* (Cat. no. 4363.0.55.001) on the ABS website, www.abs.gov.au.  The numerator and denominator for this indicator for the Aboriginal and Torres Strait Islander population use data from the 2012-13 National Aboriginal and Torres Strait Islander Health Measures Survey (NATSIHMS) component of the ABS 2012-13 Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) of approximately 3300 people, which is weighted to benchmarks for the Australian Aboriginal and Torres Strait Islander estimated resident population at 30 June 2011, based on the 2011 Census of Population and Housing.  For information on the structure of the AATSIHS, see *Structure of the Australian Aboriginal and Torres Strait Islander Health Survey* on the ABS website, www.abs.gov.au.  For information on scope and coverage, see the *Australian Aboriginal and Torres Strait Islander Health Survey: Users’ Guide* (Cat. no. 4727.0.55.002) on the ABS website, www.abs.gov.au.. | |
| Data Quality Framework Dimensions | |  |
| Institutional environment | The AHS and AATSIHS were collected, processed and published by the ABS. The ABS operates within a framework of the *Census and Statistics Act 1905* and the *Australian Bureau of Statistics Act 1975*. These ensure the independence and impartiality from political influence of the ABS, and the confidentiality of respondents.  The interview components of the AHS and AATSIHS were conducted under the *Census and Statistics Act 1905*. The biomedical components (NHMS and NATSIHMS) were collected under the *Privacy Act 1988* and were subject to ethics approval which at the national level was sought and gained from the (then) Australian Government Department of Health and Ageing’s Departmental Ethics Committee.  Ethics approval for the NATSIHMS component was also required at the jurisdictional level for NSW, WA, the NT and for Queensland Health Service Districts. Ethics approval was sought and gained from the following Ethics Committees:   * Aboriginal Health and Medical Research Council Ethics Committee in NSW * Aboriginal Health Research Ethics Committee in SA * Western Australian Aboriginal Health Ethics Committee in WA * Western Australia Country Health Service (WACHS) Research Ethics Committee in WA * Central Australian Human Research Ethics Committee in the NT * Human Research Ethics Committee of the Northern Territory Department of Health and Menzies School of Health Research in the NT * several Human Research Ethics Committees of Queensland Government Hospital and Health Services districts.   For more information on the institutional environment of the ABS, including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment on the ABS website, www.abs.gov.au. | |
| Relevance | The The 2011-12 NHMS and 2012-13 NATSIHMS use a combination of blood test results for fasting plasma glucose and self-reported information on diabetes diagnosis and medication use to measure prevalence of Type 2 diabetes.  A respondent to the survey is considered to have known diabetes (type 2) if they had ever been told by a doctor or nurse that they have Type 2 diabetes and:   * They were taking diabetes medication (either insulin or tablets); or * Their blood test result for fasting plasma glucose was greater than or equal to 7.0 mmol/L.   A respondent to the survey is considered to have newly diagnosed diabetes if they reported no prior diagnosis of diabetes, but had a fasting plasma glucose value greater than or equal to 7.0 mmol/L.  Note: The type of diabetes for newly diagnosed cases cannot be determined from a fasting plasma glucose test alone. However, as it is assumed that the vast majority of newly diagnosed cases would be Type 2, all newly diagnosed cases of diabetes have been included in this measure.  The estimates exclude persons who did not fast for 8 hours or more prior to their blood test. Excludes women with gestational diabetes.  The same definition for diabetes will be used in the NATSIHMS. | |
| Timeliness | The NHMS was conducted in 2011-12 with results released in August 2013.  The NATSIHMS was conducted in 2012-13 with results released in September 2014. | |
| Accuracy | The AHS was conducted in all States and Territories, excluding very remote areas. Non-private dwellings such as hotels, motels, hospitals, nursing homes and short-stay caravan parks were also not included in the survey. The exclusion of persons usually residing in very remote areas has a small impact on estimates, except for the Northern Territory, where such persons make up approximately 23 per cent of the population. The final response rate for the ‘core’ component of the AHS was 82 per cent.  All selected persons aged 5 years and over were invited to participate in the voluntary NHMS. Of all of those who took part in the AHS, 37 per cent went on to complete the biomedical component.  Analysis of the sample showed that the characteristics of persons who participated in the NHMS were similar with those for the AHS overall. The only significant difference was for smoking, where the NHMS sample had a lower rate of current smokers than the AHS sample (12.0 per cent compared with 17.6 per cent). For more information, see the Explanatory Notes in *Australian Health Survey: Biomedical Results for Chronic Disease* (Cat. no. 4364.0.55.005).  In order to get an accurate reading for the fasting plasma glucose test, participants were asked to fast for 8 hours before their test. The results presented for this indicator refer only to those people who did fast (approximately 79 per cent of adults who participated in the NHMS). Analysis of the characteristics of people who fasted compared with those who did not fast showed no difference between fasters and non-fasters.  The AATSIHS was conducted in all States and Territories, including very remote areas. Non-private dwellings such as hotels, motels, hospitals, nursing homes and short-stay caravan parks were excluded from the survey. The response rate for the Core component of the 2012-13 AATSIHS was 80%.  All selected persons aged 18 years and over in the AATSIHS were invited to participate in the voluntary NATSIHMS. Of these, 40% went on to complete the biomedical component.  Analysis of the sample showed that the characteristics of persons who participated in the NATSIHMS were similar to those for the AATSIHS overall. For more information, see the Explanatory Notes in *Australian Aboriginal and Torres Strait Islander Health Survey: Biomedical Results* (Cat. no. 4727.0.55.003).  In order to get an accurate reading for the fasting plasma glucose test, participants were asked to fast for 8 hours before their test. The results presented for this indicator refer only to those people who did fast (approximately 77.6% of adults who participated in the NATSIHMS). Analysis of the characteristics of people who fasted compared with those who did not fast showed no difference between fasters and non-fasters.  As they are drawn from a sample survey, data for the indicator are subject to sampling error. Sampling error occurs because only a small proportion of the population is used to produce estimates that represent the whole population. Sampling error can be reliably estimated as it is calculated based on the scientific methods used to design surveys. Rates should be considered with reference to their Relative Standard Error (RSE). Estimates with RSEs between 25 per cent and 50 per cent should be used with caution. Estimates with RSEs greater than 50 per cent are generally considered too unreliable for general use.  For the general and non-Indigenous populations, this indicator and the supplementary indicator generally have acceptable levels of sampling error for State/Territory by sex. However, rates for females in Victoria, males in the ACT, and males and females in the NT should be used with caution.  For the Aboriginal and Torres Strait Islander population, rates for males and females in Queensland, females in WA and WA, and males in the NT should be used with caution. Additionally, the rate for total all persons in SA should be used with caution. The rate for males in SA is considered too unreliable for general use. | |
| Coherence | The methods used to construct the indicator are consistent and comparable with other collections. The AHS collected a range of other health-related information that can be analysed in conjunction with diabetes status.  Other non-ABS collections, such as the 1999–2000 Australian Diabetes, Obesity and Lifestyle Study (AusDiab) and the 2009-10 Victorian Health Monitor (VHM) have reported estimates of diabetes prevalence based on biomedical measures and self-reported diagnosis and medication use .  Results from the recent VHM were very similar to those from the NHMS. Results from AusDiab showed higher estimates of diabetes than the NHMS, however this difference is most likely due to the difference in test used to measure diabetes (AusDiab used an Oral Glucose Tolerance test, which is a more comprehensive test for diabetes than fasting plasma glucose).  For information on how these studies compare, see *Australian Health Survey: Biomedical Results for Chronic Disease* (Cat. no. 4364.0.55.005). | |
| Accessibility | See *Australian Health Survey: Biomedical Results for Chronic Disease* (cat. no. 4364.0.55.005). Other information from this survey is also available on request. | |
| Interpretability | Information to aid interpretation of the data is available from the *Australian Health Survey: Users’ Guide* and the *Australian Aboriginal and Torres Strait Islander Health Survey: Users’ Guide* (Cat. no. 4727.0.55.002) on the ABS website.  Many health-related issues are closely associated with age; therefore data for this indicator have been age-standardised to the 2001 total Australian population to account for differences in the age structures of the States and Territories. Age standardised rates should be used to assess the relative differences between groups, not to infer the rates that actually exist in the population. | |
| Data Gaps/Issues Analysis | |  |
| Key data gaps /issues | The Steering Committee notes the following issues:   * The data provide relevant information on the prevalence of Type 2 diabetes. * The 2011-12 NHMS was conducted for the first time as part of the 2011–13 AHS, with participation voluntary in the NHMS. Of those who took part in the AHS, 38 per cent took part in the NHMS. The NHMS sample was found to be similar to the AHS population. * The 2012-13 NATSIHMS was conducted for the first time as part of the 2012-13 AATSIHS, with participation voluntary in the NATSIHMS. Of those who took part in the AATSIHS, 40 per cent took part in the NATSIHMS. The NHMS sample was found to be similar to the overall of the AATSIHS population. * The NHMS does not include people living in very remote areas, which affects the comparability of the NT results. * Data are of acceptable accuracy. Some RSEs for disaggregations are greater than 25 per cent and these data should be used with caution. | |

### Potentially avoidable deaths

Data quality information for this indicator has been sourced from the Australian Bureau of Statistics (ABS) with additional Steering Committee comments.

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| Indicator definition and description | |  |
| Indicator | Potentially avoidable deaths | |
| Measure/s (computation) | Numerator: Number of death registrations of persons aged less than 75 for 5 year aggregates 2003–2007, 2004–2008, 2005–2009 (updated for revised specification and updated Indigenous ERP), 2006–2010, 2007–2011 (updated for revised specification, updated Indigenous ERP and revision to ABS cause of death data), 2008–2012 and single years 2007, 2008, 2009 (resupplied for revised specification), 2010, 2011 (resupplied for updated specification and revision to ABS cause of death data), 2012 provided by state and territory Registrars of Births, Deaths and Marriages which have an ICD-10 code which has been further classified as potentially avoidable according to the NHA: PI 16 – Potentially avoidable deaths, 2015 revised specifications.  Denominator: Population aged less than 75 years.   * Indigenous: Estimates and Projections, Aboriginal and Torres Strait Islander Australians (3238.0) * Non-Indigenous: The projected Indigenous population (3238.0, Series B) subtracted from the ABS 2011 Census-based Estimated Resident Population (ERP). | |
| Data source/s | Numerator: ABS Causes of Death collection (Cat. no. 3303.0)  Denominator: ABS ERP (3101.0); ABS 2014 *Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 2001–2026* (Cat. no. 3238.0), Series B.  For the non-Indigenous population, the projected Indigenous population (Cat. no. 3238.0, Series B) is subtracted from the 2011 Census-based ERP. | |
| Data Quality Framework Dimensions | |  |
| Institutional environment | These collections are conducted under the *Census and Statistics Act 1905*. For information on the institutional environment of the ABS, including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, see ABS Institutional Environment. | |
| Relevance | The ABS Causes of Death collection includes all deaths that occurred and were registered in Australia, including deaths of persons whose usual residence is overseas. Deaths of Australian residents that occurred outside Australia may be registered by individual Registrars, but are not included in ABS deaths or causes of death statistics.  Data in the Causes of Death collection include demographic items, as well as causes of death information, which is coded according to the International Statistical Classification of Diseases and Related health Problems (ICD). ICD is the international standard classification for epidemiological purposes and is designed to promote international comparability in the collection, processing, classification, and presentation of causes of death statistics. The classification is used to classify diseases and causes of disease or injury as recorded on many types of medical records as well as death records. The ICD has been revised periodically to incorporate changes in the medical field. The 10th revision of ICD (ICD-10) has been used by the ABS to code cause of death since 1997.  For further information on the ABS Causes of Death collection, see the relevant Data Quality Statement. | |
| Timeliness | Causes of death data is published on an annual basis. Death records are provided electronically to the ABS by individual Registrars on a monthly basis for compilation into aggregate statistics on a quarterly and annual basis. One dimension of timeliness in death registrations data is the interval between the occurrence and registration of a death. As a result, a small number of deaths occurring in one year are not registered until the following year or later.  Preliminary ERP data is compiled and published quarterly and is generally made available five to six months after the end of each reference quarter. Every year, the 30 June ERP is further disaggregated by sex and single year of age, and is made available five to six months after the end of the reference quarter. Commencing with data for September quarter 2006, revised estimates are released annually and made available 21 months after the end of the reference period for the previous financial year, once more accurate births, deaths and net overseas migration data becomes available. In the case of births and deaths, the revised data is compiled on a date of occurrence basis. In the case of net overseas migration, final data is based on actual traveller behaviour. Generally ERP data is not changed once it has been finalised unless there are compelling reasons to do so, as in June 2013 when data from September 1991 to June 2006 was revised (for more information on this recasting process, please see the feature article titled Recasting 20 years of ERP in the December quarter 2012 issue of *Australian Demographic Statistics* (cat. no. 3101.0).  For further information on ABS ERP, see the relevant Data Quality Statement. | |
| Accuracy | Information on causes of death is obtained from a complete enumeration of deaths registered during a specified period and is not subject to sampling error. However, deaths data sources are subject to non-sampling error which can arise from inaccuracies in collecting, recording and processing the data.  Although it is considered likely that most deaths of Aboriginal and Torres Strait Islander (Indigenous) Australians are registered, a proportion of these deaths are not registered as Indigenous. Information about the deceased is supplied by a relative or other person acquainted with the deceased, or by an official of the institution where the death occurred and may differ from the self-identified Indigenous origin of the deceased. Forms are often not subject to the same best practice design principles as statistical questionnaires, and respondent and/or interviewer understanding is rarely tested. Over-precise analysis of Indigenous deaths and mortality should be avoided.  All coroner certified deaths registered after 1 January 2006 are now subject to a revisions process. In this round of COAG reporting, 2008, 2009 and 2010 data is final, 2011 data is revised and 2012 data is preliminary. Data for 2011 and 2012 is subject to further revisions. Prior to 2006 all ABS processing of causes of death data for a particular reference period was finalised approximately 13 months after the end of the reference period. Where insufficient information was available to code a cause of death (e.g. a coroner certified death was yet to be finalised by the Coroner), less specific ICD codes were assigned as required by the ICD coding rules. The revision process enables the use of additional information relating to coroner certified deaths, as it becomes available over time. This results in increased specificity of the assigned ICD-10 codes.  Revisions will only impact on coroner certified deaths, as further information becomes available to the ABS about the causes of these deaths. See Technical Note: Causes of Death Revisions 2010 and 2011 in *Causes of Death, Australia, 2012* (Cat.no. 3303.0).  In November 2010, the Queensland Registrar of Births, Deaths and Marriages advised the ABS of an outstanding deaths registration initiative undertaken by the Registry. This initiative resulted in the November 2010 registration of 374 previously unregistered deaths which occurred between 1992 and 2006 (including a few for which a date of death was unknown). Of these, around three-quarters (284) were deaths of Aboriginal and Torres Strait Islander Australians.  The ABS discussed different methods of adjustment of Queensland death registrations data for 2010 with key stakeholders. Following the discussion, a decision was made by the ABS and key stakeholders to use an adjustment method that added together deaths registered in 2010 for usual residents of Queensland which occurred in 2007, 2008, 2009 and 2010. This method minimises the impact on mortality indicators used in various government reports. However, care should still be taken when interpreting Aboriginal and Torres Strait Islander death data for Queensland for 2010. Please note that there are differences between data output in the *Causes of Death, Australia, 2010* publication (Cat. no. 3303.0) and 2010 data reported for COAG, as this adjustment was not applied in the publication. For further details see Technical Note: Registration of outstanding deaths, Queensland 2010, from the *Deaths, Australia, 2010* publication (Cat. no, 3302.0) and Explanatory Note 103 in the *Causes of Death, Australia, 2010* publication (Cat. no. 3303.0).  Investigation conducted by the WA Registrar of Births, Deaths and Marriages indicated that some deaths of non-Indigenous people were wrongly identified as deaths of Indigenous people in WA for 2007, 2008 and 2009. The ABS discussed this issue with a range of key stakeholders and users of Aboriginal and Torres Strait Islander deaths statistics. Following this discussion, the ABS did not release WA Aboriginal and Torres Strait Islander deaths data for the years 2007, 2008 and 2009 in the 2010 issue of Deaths, Australia publication, or in the 2011 COAG data supply. The WA Registry corrected the data and resupplied the corrected data to the ABS. These corrected data were then released by the ABS in spreadsheets attached to *Deaths, Australia, 2010* (Cat. no. 3302.0) publication on 24 May 2012, and are included in this round of COAG reporting. In addition, 3 deaths in WA for 2009 which were wrongly coded as deaths of Indigenous people have been corrected as deaths of non-indigenous people in this round of COAG reporting.  All ERP data sources are subject to non-sampling error. Non-sampling error can arise from inaccuracies in collecting, recording and processing the data. In the case of Census and Post Enumeration Survey (PES) data, every effort is made to minimise reporting error by the careful design of questionnaires, intensive training and supervision of interviewers, and efficient data processing procedures. The ABS does not have control over any non-sampling error associated with births, deaths and migration data. For more information see the *Demography Working Paper 1998/2 - Quarterly birth and death estimates, 1998* (Cat. no. 3114.0). and *Australian Demographic Statistics* (Cat. no. 3101.0).  Non-Indigenous estimates are available for census years only. In the intervening years, Indigenous population projections are based on assumptions about past and future levels of fertility, mortality and migration. In the absence of non-Indigenous population figures for these years, it is possible to derive denominators for calculating non-Indigenous rates by subtracting the projected Indigenous population from the total population. For the current round of COAG reporting, the non‑Indigenous population denominator has been calculated by subtracting the 2011 Census-based Indigenous estimates/projections from the 2011 Census-based Estimated Resident Population (3101.0). Such figures have a degree of uncertainty and should be used with caution, particularly as the time from the base year of the projection series increases.  Non-Indigenous data from the Causes of Death collection do not include death registrations with a ‘not stated’ Indigenous status.  Some rates are unreliable due to small numbers of deaths over the reference period. Resultant rates could be misleading, for example, where the non-Indigenous mortality rate is higher than the indigenous mortality rate. Age-standardised death rates based on a very low death count have been deemed unpublishable. Some cells have also not been published to prevent back-calculation of these suppressed cells. Caution should be used when interpreting rates for this indicator. | |
| Coherence | The methods used to construct the indicator are consistent and comparable with other collections and with international practice. | |
| Accessibility | Causes of death data are available in a variety of formats on the ABS website under the 3303.0 product family. ERP data is available in a variety of formats on the ABS website under the 3101.0 and 3201.0 product families. Further information on deaths and mortality may be available on request. The ABS observes strict confidentiality protocols as required by the *Census and Statistics Act (1905)*. This may restrict access to data at a very detailed level. | |
| Interpretability | Data for this indicator have been age-standardised, using the direct method, to ‘under 75 years’ of age. Direct age-standardisation to the 2001 total Australian population was used (see Data Cube: Standard Population for Use in Age-Standardisation Table in Australian Demographic Statistics, Dec 2013 (Cat. no. 3101.0)). Age-standardised results provide a measure of relative difference only between populations. | |
| Data Gaps/Issues Analysis | |  |
| Key data gaps /issues | The Steering Committee notes the following issues:   * Revised specifications were nationally agreed for potentially avoidable deaths in 2014. Data are resupplied to the revised specifications. * The data provide relevant information on potentially avoidable deaths. * A large number of unregistered deaths in Queensland dating back to 1992 were identified and registered in 2010. Care should be taken when interpreting Aboriginal and Torres Strait Islander death data for Queensland for 2010. * Data by Indigenous status are reported for NSW, Queensland, WA, SA and the NT. Only these jurisdictions have evidence of a sufficient level of Indigenous identification, have sufficient numbers of Indigenous deaths and do not have significant data quality issues. * Data are of acceptable accuracy. Although most deaths of Indigenous Australians are registered, it is likely that some are not identified as Indigenous. Therefore data are likely to underestimate the Indigenous mortality rate. Rates should be used with caution. | |

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### Mortality and life expectancy

#### Life expectancy

Data quality information for this indicator has been sourced from the Australian Bureau of Statistics (ABS) with additional Steering Committee comments.

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| Indicator definition and description | |  |
| Element | Outcome | |
| Indicator | Mortality and life expectancy — Life expectancy | |
| Measure/s (computation) | Life tables for the Australian population, from which life expectancy at birth is obtained. Age/sex-specific death rates used in the construction of the life tables are calculated as follows.  Numerator: death registrations for 2011–2013 provided by State and Territory Registrars of Births, Deaths and Marriages.  Denominator: Estimated resident population (ERP) for the period 2011–2013. | |
| Data source/s | *Life Tables, States, Territories and Australia, 2011-2013* (Cat. no. 3302.0.55.001) | |
| Data Quality Framework Dimensions | |  |
| Institutional environment | For information on the institutional environment of the ABS, including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment.  Death statistics are sourced from death registrations systems administered by the various State and Territory Registrars of Births, Deaths and Marriages. It is a legal requirement of each State and Territory that all deaths are registered. Information about the deceased is supplied by a relative or other person acquainted with the deceased, or by an official of the institution where the death occurred. | |
| Relevance | Life tables based on assumed improvements in mortality are produced by the ABS using assumptions on future life expectancy at birth, based on recent trends in life expectancy. These life tables are not published by the ABS, they are used as inputs into ABS population projections.  The life tables are current or period life tables, based on death rates for a short period of time during which mortality has remained much the same. Mortality rates for the Australian and state and territory life tables are based on death registrations and estimated resident population for the period 2011–2013. The life tables do not take into account future assumed improvements in mortality.  Life tables are presented separately for males and females. The life table depicts the mortality experience of a hypothetical group of newborn babies throughout their entire lifetime. It is based on the assumption that this group is subject to the age-specific mortality rates of the reference period. Typically this hypothetical group is 100 000 in size. | |
| Timeliness | ABS estimates of all Australian life expectancy at birth are calculated for a 3 year period and published on an annual basis. | |
| Accuracy | Compilation of life tables requires complete and accurate data on deaths that occur in a period, and reliable estimates of the population exposed to the risk of dying during that period. These data are required by age and sex so as to calculate age‑sex specific death rates.  Information on deaths is obtained from a complete enumeration of deaths registered during a specified period and are not subject to sampling error. However, deaths data sources are subject to non-sampling error which can arise from inaccuracies in collecting, recording and processing the data.  Sources of non-sample error include:   * completeness of an individual record at a given point in time; * completeness of the dataset (eg impact of registration lags, processing lags and duplicate records); * extent of coverage of the population (whilst all deaths are legally required to be registered, some cases may not be registered for an extended time, if at all); and * lack of consistency in the application of questions or forms used by data providers, both through time and between different jurisdictions.   In November 2010, the Queensland Registry of Births, Deaths and Marriages registered 374 previously unregistered deaths which occurred between 1992 and 2006 (including a few for which a date of death was unknown). The ABS life tables are based on deaths by year of occurrence, and are therefore unaffected by this late registration of deaths.  Every effort is made to minimise error by working closely with data providers, the careful design of forms, training of processing staff, and efficient data processing procedures.  ERP is based on Census counts by place of usual residence, adjusted for net Census undercount and the number of Australian residents temporarily overseas on Census night, and backdated from the Census date to 30 June. For post-censal years, ERP is obtained by adding post-censal births, deaths and migrations to the Census ERP. | |
| Coherence | The methods used to construct the indicator are consistent and comparable with other collections and with international practice. | |
| Accessibility | ABS life expectancy estimates are published on the ABS website www.abs.gov.au (see *Life Tables, States, Territories and Australia, 2011–2013* (Cat. no. 3302.0.55.001). | |
| Interpretability | Please view Explanatory Notes and Glossary that provide information on the data sources, terminology, classifications and other technical aspects associated with these statistics. | |
| Data Gaps/Issues Analysis | |  |
| Key data gaps /issues | The Steering Committee notes the following issues:   * A large number of unregistered deaths in Queensland dating back to 1992 were identified and registered in 2010. Care should be taken when interpreting Indigenous death data for Queensland for 2010. * Data are not available by socioeconomic status (SES). Disaggregation of this indicator by SES is a priority. * The measure for this indicator is based on a three year average. Multiple year averages may not be able to determine trends over time as each reporting year incorporates the two previous years. Further work is required to determine what level of disaggregation is reliable for single year data. | |

#### Mortality rates — Infant and child

Data quality information for this indicator has been sourced from the Australian Bureau of Statistics (ABS) with additional Steering Committee comments.

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| Indicator definition and description | |  |
| Indicator | Mortality rates — Infant and child | |
| Measure/s (computation) | Numerators: number of death registrations for the period 2007-2012 (single years) provided by state and territory Registrars of Births, Deaths and Marriages, for:   * Infants — children aged under 1 year * Child 0–4 — children aged 0 to 4 years   Denominators:   * Infants — Number of live births in the period * Child 0–4 — Population aged 0 to 4 years | |
| Data source/s | Numerators   * ABS Deaths Collection (3302.0)   Denominators   * Infants — ABS Births Collection (3301.0) * Child 0-4: ABS Population Projections (2011 Census based), (3222.0) * Indigenous: *ABS Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians* (2011 Census based), (3238.0) | |
| Data Quality Framework Dimensions | |  |
| Institutional environment | These collections are conducted under the *Census and Statistics Act 1905*. For information on the institutional environment of the ABS, including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, see ABS Institutional Environment. | |
| Relevance | Deaths data are published on an annual basis. The ABS Deaths collection includes all deaths that occurred and were registered in Australia, including deaths of persons whose usual residence is overseas. Deaths of Australian residents that occurred outside Australia may be registered by individual Registrars, but are not included in ABS deaths or causes of death statistics.  The ABS Births collection includes all births that are live born and have not been previously registered, births to temporary visitors to Australia, births occurring within Australian Territorial waters, births occurring in Australian Antarctic Territories and other external territories, births occurring in transit (i.e. on ships or planes) if registered in the state or territory of "next port of call", births to Australian nationals employed overseas at Australian legations and consular offices and births that occurred in earlier years that have not been previously registered (late registrations). Births data exclude fetal deaths, adoptions, sex changes, legitimations and corrections, and births to foreign diplomatic staff, and births occurring on Norfolk Island.  For further information on the ABS Deaths and Births collections, see the relevant Data Quality Statements. | |
| Timeliness | Death records are provided electronically to the ABS by individual Registrars on a monthly basis for compilation into aggregate statistics on a quarterly and annual basis. One dimension of timeliness in death registrations data is the interval between the occurrence and registration of a death. As a result, a small number of deaths occurring in one year are not registered until the following year or later.  Births records are provided electronically to the ABS by individual Registrars on a monthly basis for compilation into aggregate statistics on a quarterly and annual basis. One dimension of timeliness in birth registrations data is the interval between the occurrence and registration of a birth. As a result, some births occurring in one year are not registered until the following year or even later. This can be caused by either a delay by the parent(s) in submitting a completed form to the registry, or a delay by the registry in processing the birth (for example, due to follow up activity due to missing information on the form, or resource limitations).  Preliminary ERP data is compiled and published quarterly and is generally made available five to six months after the end of each reference quarter. Every year, the 30 June ERP is further disaggregated by sex and single year of age, and is made available five to six months after end of the reference quarter. Commencing with data for September quarter 2006, revised estimates are released annually and made available 21 months after the end of the reference period for the previous financial year, once more accurate births, deaths and net overseas migration data becomes available. In the case of births and deaths, the revised data is compiled on a date of occurrence basis. In the case of net overseas migration, final data is based on actual traveller behaviour. Final estimates are made available every 5 years after a census and revisions are made to the previous inter-censal period. Generally ERP data is not changed once it has been finalised unless there are compelling reasons to do so, as in June 2013 when data from September 1991 to June 2006 was revised (for more information on this recasting process, please see the feature article titled Recasting 20 years of ERP in the December quarter 2012 issue of Australian Demographic Statistics (cat. no. 3101.0).  For further information on ABS Estimated Resident Population, see the relevant Data Quality Statement. | |
| Accuracy | Information on births and deaths is obtained from a complete enumeration of births and deaths registered during a specified period and are not subject to sampling error. However, births and deaths data sources are subject to non-sampling error which can arise from inaccuracies in collecting, recording and processing the data.  Concerns have been raised with the accuracy of the NSW births counts in recent years. In response to these concerns the ABS, in conjunction with the NSW Registry of Births, Deaths and Marriages, has undertaken an investigation which has led to the identification of an ABS systems processing error. The ABS acknowledges that this has resulted in previous undercounts of births in NSW. Data for NSW and Australia have been revised to include previously unprocessed NSW birth registrations for the period 2005 to 2011.  Although it is considered likely that most deaths of Aboriginal and Torres Strait Islander (Indigenous) Australians are registered, a proportion of these deaths are not registered as Indigenous. Information about the deceased is supplied by a relative or other person acquainted with the deceased, or by an official of the institution where the death occurred and may differ from the self-identified Indigenous origin of the deceased. Forms are often not subject to the same best practice design principles as statistical questionnaires, and respondent and/or interviewer understanding is rarely tested. Over-precise analysis of Indigenous deaths and mortality should be avoided.  In November 2010, the Queensland Registrar of Births, Deaths and Marriages advised the ABS of an outstanding deaths registration initiative undertaken by the Registry. This initiative resulted in the November 2010 registration of 374 previously unregistered deaths which occurred between 1992 and 2006 (including a few for which a date of death was unknown). Of these, around three-quarters (284) were deaths of Aboriginal and Torres Strait Islander Australians.  The ABS discussed different methods of adjustment of Queensland death registrations data for 2010 with key stakeholders. Following the discussion, a decision was made by the ABS and key stakeholders to use an adjustment method that added together deaths registered in 2010 for usual residents of Queensland which occurred in 2007, 2008, 2009 and 2010. This method minimises the impact on mortality indicators used in various government reports. However, care should still be taken when interpreting Aboriginal and Torres Strait Islander death data for Queensland for 2010.  Investigation conducted by the WA Registrar of Births, Deaths and Marriages indicated that some deaths of non-Indigenous people were wrongly recorded as deaths of Indigenous people in WA for 2007, 2008 and 2009. The ABS discussed this issue with a range of key stakeholders and users of Aboriginal and Torres Strait Islander deaths statistics. Following this discussion, the ABS did not release WA Aboriginal and Torres Strait Islander deaths data for the years 2007, 2008 and 2009 in the 2010 issue of Deaths, Australia publication, or in the 2011 COAG data supply. The WA Registry corrected the data and resupplied the corrected data to the ABS. These corrected data were then released by the ABS in spreadsheets attached to Deaths, Australia, 2010 (cat. no. 3302.0) publication on 24 May 2012, and are included in this round of COAG reporting.  All ERP data sources are subject to non-sampling error. Non-sampling error can arise from inaccuracies in collecting, recording and processing the data. In the case of Census and Post Enumeration Survey (PES) data every effort is made to minimise reporting error by the careful design of questionnaires, intensive training and supervision of interviewers, and efficient data processing procedures. The ABS does not have control over any non-sampling error associated with births, deaths and migration data. For more information see the Demography Working Paper 1998/2 - Quarterly birth and death estimates, 1998 (cat. no. 3114.0) and Australian Demographic Statistics (cat. no. 3101.0).  Indigenous and non-Indigenous population estimates are available for Census years only. In the intervening years, Indigenous population projections are based on assumptions about past and future levels of fertility, mortality and migration. In the absence of non-Indigenous population figures for these years, it is possible to derive denominators for calculating non-Indigenous rates by subtracting the projected Indigenous population from the total population. For the current round of COAG reporting, non-Indigenous population estimates have been derived by subtracting the 2011 Census-based Indigenous population estimates/projections from the 2011 Census-based total persons Estimated Resident Population (ERP). Such figures have a degree of uncertainty and should be used with caution, particularly as the time from the base year of the projection series increases. Total population estimates for 2012, used in the calculation of non-Indigenous comparison rates, are preliminary estimates.  Non-Indigenous data from the Deaths collection do not include death registrations with a ‘not stated’ Indigenous status.  Some rates are unreliable due to small numbers of deaths over the reference period. Resultant rates could be misleading for example where the non-Indigenous mortality rate is higher than the indigenous mortality rate. All rates in this indicator must be used with caution. | |
| Coherence | The methods used to construct the indicator are consistent and comparable with other collections and with international practice. | |
| Accessibility | Deaths data are available in a variety of formats on the ABS website under the 3302.0 product family. Births data are available in a variety of formats on the ABS website under the 3301.0 product family. ERP data is available in a variety of formats on the ABS website under the 3101.0 product family. Further information on deaths and mortality may be available on request. The ABS observes strict confidentiality protocols as required by the *Census and Statistics Act (1905)*. This may restrict access to data at a very detailed level. | |
| Interpretability | Data for this indicator have been presented as crude rates, either per 1000 live births or per 1000 estimated resident population. | |
| Data Gaps/Issues Analysis | |  |
| Key data gaps /issues | The Steering Committee notes the following issues:   * The data provide relevant information on infant (<1 year) and child (0–4 years) mortality rates. * Single year data for child mortality by Indigenous status have been backcast to the baseline reporting year of 2007 due to revised ERP data. * Data are of acceptable accuracy. Although most deaths of Indigenous Australians are registered, it is likely that some are not identified as Indigenous. Therefore data are likely to underestimate the Indigenous mortality rate. * A large number of unregistered deaths in Queensland dating back to 1992 were identified and registered in 2010. Care should be taken when interpreting Aboriginal and Torres Strait Islander death data for Queensland for 2010. * Data by Indigenous status are reported for NSW, Queensland, WA, SA and the NT only. Only these jurisdictions have evidence of a sufficient level of Indigenous identification, have sufficient numbers of Indigenous deaths and do not have significant data quality issues. * Variability bands provided with rates describe the range of potential results for mortality rates. Variability bands are calculated for single-year and aggregate years data by State and Territory (for within jurisdiction comparisons only — they cannot be used to make comparisons across jurisdictions). * Further work is required to improve the completeness of Indigenous identification for registered deaths. | |

#### Mortality rates by major cause of death

Data quality information for this indicator has been sourced from the Australian Bureau of Statistics (ABS) with additional Steering Committee comments.

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| Indicator definition and description | |  |
| Indicator | Age standardised mortality by major cause of death | |
| Measure/s (computation) | Numerator   * Death registrations by major cause of death.   Denominators   * Estimated Resident Population (ERP) * Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians | |
| Data source/s | Numerator: ABS Causes of Death collection (Cat. no. 3303.0)  Denominators:   * ABS ERP (Cat. no. 3101.0) * ABS *Estimates and Projections, Aboriginal and Torres Strait Islander Australians* (Cat. no. 3238.0), Series B. * For the non-Indigenous population, the projected Indigenous population (3238.0, Series B) is subtracted from the ABS 2011 Census-based ERP. | |
| Data Quality Framework Dimensions | |  |
| Institutional environment | These collections are conducted under the *Census and Statistics Act 1905*. For information on the institutional environment of the ABS, including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, see ABS Institutional Environment. | |
| Relevance | The ABS Causes of Death collection includes all deaths that occurred and were registered in Australia, including deaths of persons whose usual residence is overseas. Deaths of Australian residents that occurred outside Australia may be registered by individual Registrars, but are not included in ABS deaths or causes of death statistics.  Data in the Causes of Death collection include demographic items, as well as causes of death information, which is coded according to the International Statistical Classification of Diseases and Related Health Problems (ICD). ICD is the international standard classification for epidemiological purposes and is designed to promote international comparability in the collection, processing, classification, and presentation of causes of death statistics. The classification is used to classify diseases and causes of disease or injury as recorded on many types of medical records as well as death records The ICD has been revised periodically to incorporate changes in the medical field. The 10th revision of ICD (ICD-10) has been used by the ABS to code cause of death since 1997.  For further information on the ABS Causes of Death collection, see the relevant Data Quality Statement. | |
| Timeliness | Death records are provided electronically to the ABS by individual Registrars and the National Coroners Information System (NCIS) on a monthly basis, for compilation into aggregate statistics on an annual basis. One dimension of timeliness in causes of death registrations data is the interval between the occurrence and registration of a death. As a result, a small number of deaths occurring in one year are not registered until the following year or later.  Preliminary ERP data is compiled and published quarterly and is generally made available five to six months after the end of each reference quarter. Every year, the 30 June ERP is further disaggregated by sex and single year of age, and is made available five to six months after the end of the reference quarter. Commencing with data for September quarter 2006, revised estimates are released annually and made available 21 months after the end of the reference period for the previous financial year, once more accurate births, deaths and net overseas migration data becomes available. In the case of births and deaths, the revised data is compiled on a date of occurrence basis. In the case of net overseas migration, final data is based on actual traveller behaviour. Final estimates are made available every 5 years after a Census and revisions are made to the previous intercensal period. Generally ERP data is not changed once it has been finalised unless there are compelling reasons to do so, as in June 2013 when data from September 1991 to June 2006 was revised (for more information on this recasting process, please see the feature article titled Recasting 20 years of ERP in the December quarter 2012 issue of *Australian Demographic Statistics* (Cat. no. 3101.0).  For further information on ABS Estimated Resident Population, see the relevant Data Quality Statement. | |
| Accuracy | Information on causes of death is obtained from a complete enumeration of deaths registered during a specified period, so is not subject to sampling error. However, causes of death data sources are subject to non-sampling error which can arise from inaccuracies in collecting, recording and processing the data.  Although it is considered likely that most deaths of Aboriginal and Torres Strait Islander (Indigenous) Australians are registered, a proportion of these deaths are not registered as Indigenous. Information about the deceased is supplied by a relative or other person acquainted with the deceased, or by an official of the institution where the death occurred and may differ from the self-identified Indigenous origin of the deceased. Forms are often not subject to the same best practice design principles as statistical questionnaires, and respondent and/or interviewer understanding is rarely tested. Over-precise analysis of Indigenous deaths and mortality should be avoided.  All coroner certified deaths registered after 1 January 2006 are now subject to a revisions process. In this round of COAG reporting, 2008, 2009 and 2010 data are final, 2011 data are revised and 2012 data are preliminary. Data for 2011 and 2012 are subject to further revisions. Prior to 2006 all ABS processing of causes of death data for a particular reference period was finalised approximately 13 months after the end of the reference period. Where insufficient information was available to code a cause of death (e.g. a coroner certified death was yet to be finalised by the Coroner), less specific ICD codes were assigned as required by the ICD coding rules. The revision process enables the use of additional information relating to coroner certified deaths, as it becomes available over time. This results in increased specificity of the assigned ICD-10 codes.  Revisions will only impact on coroner certified deaths, as further information becomes available to the ABS about the causes of these deaths. See Technical Note: Causes of Death Revisions 2010 and 2011 in Causes of *Death, Australia, 2012* (Cat. no. 3303.0).  In November 2010, the Queensland Registrar of Births, Deaths and Marriages advised the ABS of an outstanding deaths registration initiative undertaken by the Registry. This initiative resulted in the November 2010 registration of 374 previously unregistered deaths which occurred between 1992 and 2006 (including a few for which a date of death was unknown). Of these, around three-quarters (284) were deaths of Aboriginal and Torres Strait Islander Australians.  The ABS discussed different methods of adjustment of Queensland death registrations data for 2010 with key stakeholders. Following the discussion, a decision was made by the ABS and key stakeholders to use an adjustment method that added together deaths registered in 2010 for usual residents of Queensland which occurred in 2007, 2008, 2009 and 2010. This method minimises the impact on mortality indicators used in various government reports. However, care should still be taken when interpreting Aboriginal and Torres Strait Islander death data for Queensland for 2010. Please note that there are differences between data output in the Causes of Death, Australia, 2010 publication (cat. No. 3303.0) and 2010 data reported for COAG, as this adjustment was not applied in the publication. For further details see Technical Note: Registration of outstanding deaths, Queensland 2010, from *Deaths, Australia, 2010* (Cat. no. 3302.0) and Explanatory Note 103 in the *Causes of Death, Australia, 2010* (Cat. no. 3303.0).  Investigation conducted by the WA Registrar of Births, Deaths and Marriages indicated that some deaths of non-Indigenous people were wrongly recorded as deaths of Indigenous people in WA for 2007, 2008 and 2009. The ABS discussed this issue with a range of key stakeholders and users of Aboriginal and Torres Strait Islander deaths statistics. Following this discussion, the ABS did not release WA Aboriginal and Torres Strait Islander deaths data for the years 2007, 2008 and 2009 in the 2010 issue of Deaths, Australia publication, or in the 2011 COAG data supply. The WA Registry corrected the data and resupplied the corrected data to the ABS. These corrected data were then released by the ABS in spreadsheets attached to *Deaths, Australia, 2010* (ABS, 2011) publication on 24 May 2012, and are included in this round of COAG reporting. In addition to that, 3 deaths in WA for 2009 which were wrongly coded as deaths of Indigenous people have been corrected as deaths of non-indigenous people in this round of COAG reporting.  All ERP data sources are subject to non-sampling error. Non-sampling error can arise from inaccuracies in collecting, recording and processing the data. In the case of Census and Post Enumeration Survey (PES) data every effort is made to minimise reporting error by the careful design of questionnaires, intensive training and supervision of interviewers, and efficient data processing procedures. The ABS does not have control over any non-sampling error associated with births, deaths and migration data. For more information see the *Demography Working Paper 1998/2 - Quarterly birth and death estimates, 1998* (Cat. no. 3114.0) and *Australian Demographic Statistics* (Cat. no. 3101.0).  Non-Indigenous estimates are available for census years only. In the intervening years, Indigenous population projections are based on assumptions about past and future levels of fertility, mortality and migration. In the absence of non-Indigenous population figures for these years, it is possible to derive denominators for calculating non-Indigenous rates by subtracting the projected Indigenous population from the total population. In the present tables, non-Indigenous population estimates have been derived by subtracting the 2011 Census-based Indigenous population estimates/projections from the 2011 Census-based total persons Estimated Resident Population (ERP). Such figures have a degree of uncertainty and should be used with caution, particularly as the time from the base year of the projection series increases. Total population estimates for 2012, used in the calculation of non‑Indigenous comparison rates, are preliminary estimates.  Non-Indigenous data from the Causes of Death collection do not include death registrations with a ‘not stated’ Indigenous status.  Some rates are unreliable due to small numbers of deaths over the reference period. Resultant rates could be misleading, for example, where the non-Indigenous mortality rate is higher than the indigenous mortality rate. Age-standardised death rates based on a very low death count have been deemed unpublishable. Some cells have also not been published to prevent back-calculation of these suppressed cells. Caution should be used when interpreting rates for this indicator.  Mortality rates for neoplasms may differ compared to individual State and Territory Cancer Registry mortality rates due to different sources of death data being used to calculate these rates. ABS mortality data is the cause of death data used for this indicator. | |
| Coherence | The methods used to construct the indicator are consistent and comparable with other collections and with international practice. | |
| Accessibility | Causes of death data are available in a variety of formats on the ABS website under the 3303.0 product family. Further information on deaths and mortality may be available on request. The ABS observes strict confidentiality protocols as required by the *Census and Statistics Act (1905)*. This may restrict access to data at a very detailed level. | |
| Interpretability | Data for all deaths in this indicator have been age-standardised, using the direct method, to 85 years +. Data for Indigenous deaths in this indicator have been age-standardised, using the direct method, to 75 years + to account for differences between the age structures of the Indigenous and non-Indigenous populations. Direct age-standardisation to the 2001 total Australian population was used (see Data Cube: Standard Population for Use in Age-Standardisation Table in *Australian Demographic Statistics, Dec 2013* (Cat. no. 3101.0)). Age-standardised results provide a measure of relative difference only between populations. | |
| Data Gaps/Issues Analysis | |  |
| Key data gaps /issues | The Steering Committee notes the following issues:   * The data provide relevant information on major causes of death. Data are available for all states and territories, and by Indigenous status for selected jurisdictions. Data are not available by socioeconomic status (SES). * A large number of unregistered deaths in Queensland dating back to 1992 were identified and registered in 2010. Care should be taken when interpreting Aboriginal and Torres Strait Islander death data for Queensland for 2010. * Data by Indigenous status are reported for NSW, Queensland, WA, SA and the NT. Only these jurisdictions have evidence of a sufficient level of Indigenous identification, have sufficient numbers of Indigenous deaths and do not have significant data quality issues. * Data are of acceptable accuracy. Although most deaths of Indigenous Australians are registered, it is likely that some are not identified as Indigenous. Therefore data are likely to underestimate the Indigenous mortality rate. Rates should be used with caution. * Variability bands provided with rates describe the range of potential results for mortality rates. Variability bands are calculated for single-year and aggregate years data by State and Territory (for within jurisdiction comparisons only — they cannot be used to make comparisons across jurisdictions). * Further work is required to improve the completeness of Indigenous identification for registered deaths | |

### Profile of employed health workforce

Data quality information for this indicator has been sourced from the Australian Bureau of Statistics (ABS) with additional Steering Committee comments.

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| Indicator definition and description | |  |
| Indicator | Profile of employed health workforce | |
| Measure/s (computation) | Full time equivalent employed health practitioners per 100 000 population (by age group).  Age profiles are reported for nurse and midwife, medical practitioner**,** and allied health practitioner workforces. It shows the numbers of each of these registered professions in ten year age brackets, both by jurisdiction and by region. | |
| Data source/s | National Health Workforce Data Set: medical practitioners 2013.  National Health Workforce Data Set: nurses and midwives 2013.  National Health Workforce Data Set: allied health practitioners 2013. | |
| Data Quality Framework Dimensions | |  |
| Institutional environment | The Australian Institute of Health and Welfare (AIHW) has calculated this indicator using estimates derived from the National Health Workforce Data Set (NHWDS). The NHWDS is developed through the collaboration of three agencies.  The Australian Health Practitioner Regulation Agency (AHPRA) is the organisation responsible for the implementation of the National Registration and Accreditation Scheme (NRAS) across Australia, including collecting registration data and administering the workforce surveys.  Health Workforce Australia was responsible for the development of the health workforce surveys until its closure by the Australian Government on 6 August 2014.  The AIHW receives registration and survey data from the AHPRA. The registration and workforce survey data are combined, cleansed and adjusted for non-response to form NHWDS, and the findings reported by profession. AIHW is the data custodian of the NHWDS. These data are used for workforce planning, monitoring and reporting.  The AIHW is an independent statutory authority within the Health portfolio, which is accountable to the Parliament of Australia through the Minister. For further information, see the AIHW website. | |
| Relevance | Medical practitioners, nurses/midwives and allied health practitioners, as well as dental practitioners, are required by law to be registered with their relevant national board to practise in Australia. All medical practitioners, dental practitioners, nurses/midwives and nominated allied health practitioners must complete the formal registration renewal form(s) to practise in Australia. This is the compulsory component of the renewal process. The exception is Aboriginal and Torres Strait Islander health practitioners in the allied health workforce; where those who are not required by their employer to use the title 'Aboriginal and Torres Strait Islander health practitioner', 'Aboriginal health practitioner' or 'Torres Strait Islander health practitioner' are not required to be registered, and can continue to work using their current titles (e.g. 'Aboriginal health worker', 'drug and alcohol worker' and 'mental health worker').  The health workforce surveys for each of these professions is voluntary and only practitioners who renew their registration receive a questionnaire for completion. New registrants will not receive a survey form until they renew their registration the following year, during the registration renewal period. Practitioners with limited registration are due for renewal on the anniversary of their first registration and can thus renew and complete a survey at any time through the year.  National Health Workforce Data Set: medical practitioners 2010, 2011, 2012 and 2013   * The NHWDS: medical practitioners 2010, 2011, 2012 and 2013 contain registration details of all registered medical practitioners in Australia, at 30 September on the annual renewal date. Data were extracted from the AHPRA database at the end of November of the same year. The NHWDS also contains workforce data of respondents whose principal state of practice was not Queensland or Western Australia, obtained from the Medical Workforce Survey 2010. These states were excluded from the survey because not all registrations in these states expired prior to the national registration deadline. In 2011, 2012 and 2013, the NHWDS also contains workforce data obtained from the Medical Workforce Survey for all states and territories.   National Health Workforce Data Set: nurses and midwives 2011, 2012 and 2013   * The NHWDS: nurses and midwives 2011, 2012 and 2013 contain registration details of all registered nurses/midwives in Australia at 31 May on the annual renewal date. Data were extracted from the AHPRA database at the end of November of the same year. In 2011, 2012 and 2013, the NHWDS also contains workforce data obtained from the Nursing and Midwifery Workforce Survey.   National Health Workforce Data Set: allied health practitioners 2012 and 2013.   * The NHWDS: allied health practitioners 2012 and 2013 contain registration details of all registered allied health practitioners in Australia, at 30 November on the annual renewal date. Data were extracted from the AHPRA database at the end of January the following year. The NHWDS also contains workforce data obtained from each profession-specific health workforce survey. * Indicator data for allied health practitioners are not comparable between 2012 and 2013. * Due to transitional arrangements with the migration of data from state and territory-based systems to NRAS, in 2012, many medical radiation practitioners in Queensland, WA and Tasmania were not required to renew their registrations and, as a result did not complete a workforce survey. As a consequence, data for Queensland, WA and Tasmania for this profession are excluded from the indicator data for allied health practitioners. * For the same reason, occupational therapists in Queensland, WA and SA are excluded from the indicator data for allied health practitioners in 2012.   National Health Workforce Data Set: dental practitioners 2011, 2012 and 2013   * The NHWDS: dental practitioners 2011, 2012 and 2013 contain registration details of all registered dental practitioners in Australia, at 30 November on the annual renewal date. Data were extracted from the AHPRA database at the end of January the following year. In 2011, 2012 and 2013, the NHWDS also contains workforce data obtained from the Dental Workforce Survey. | |
| Timeliness | National Health Workforce Data Set:   * The NHWDS for each of the registered professions will be produced annually during the national registration renewal process. Each profession will also be administered a Workforce Survey as part of the registration renewal process. * Medical practitioners 2010, 2011, 2012 and 2013 * The NHWDS: medical practitioners is produced annually from information collected by the national registration renewal process, conducted between 1 July and 30 September each year, including the collection of the Medical Workforce Survey. The period for the 2010 renewal process was extended to the end of January 2011. Despite this extension, there were still Queensland and WA registrants with expiry dates after January. Therefore data from these states were not included in the 2010 data set. * Nurses and midwives 2011, 2012 and 2013 * The NHWDS: nurses and midwives is produced annually from information collected by the national registration renewal process, conducted between 1 April and 31 May each year, including the collection of the Nursing and Midwifery Workforce Survey. The period for the 2011 renewal process was extended to the end of June 2011 for Queensland and end of December 2011 for Western Australia registrants. * Allied health practitioners 2012 and 2013 * The NHWDS: allied health practitioners is produced annually from information collected by the national registration renewal process, conducted between 1 September and 30 November each year, including the collection of the profession-specific workforce surveys. Practitioners with limited registration are due for renewal on the anniversary of their first registration and can thus renew and complete a survey at any time through the year. | |
| Accuracy | Data manipulation and estimation processes   * The registration and workforce survey data for each health profession are combined, cleansed and adjusted for non-response to form the NHWDS. The cleaning and editing procedures included range and logic checks, clerical scrutiny at unit record level, and validation of unit record and aggregate data. * Imputation methods are used to account for item non-response and survey non‑response. In 2013, the methodology for survey non-response was changed from a weighting-based methodology to a randomised sequential hot deck-based imputation. * It should be noted that both of these kinds of non-response is likely to introduce some bias in the estimates and any bias is likely to become more pronounced when response rates are low or when estimates are based on a small number of records. Care should be taken when drawing conclusions about the size of the differences between estimates. * As a result of the estimation method to adjust for non-response, numbers of medical practitioners, dental practitioners, nurses/midwives or allied health practitioners may have been in fractions, but have been rounded to whole numbers for this indicator. The full-time equivalent (FTE) rate calculations are based on rounded numbers.   Registration data from the National Registration and Accreditation Scheme (NRAS)   * Registration details were migrated from the respective state and territory professional board (or council) for practitioners with registrations expiring after the official AHPRA closing date for their profession. * Some data items previously collected by the AIHW Labour Force Surveys are now collected by the NRAS. However, some data quality issues due to migrated data items from the respective state and territory health profession boards may have affected the weighting method. * Medical practitioners, nurses/midwives and allied health practitioners who reside overseas have been included with practitioners whose state or territory of principal practice and state or territory of main job, respectively, could not be determined.   Health Workforce Survey   * In 2013, the online survey questionnaire include for the first time electronic sequencing of questions to automatically guide the respondent to the next appropriate question based on previous responses to questions. * For the online survey questionnaire prior to 2013, and the paper version of the questionnaire, respondents may have made inconsistent responses by not correctly following the sequencing instructions. * The order of the response categories for some questions may have also impacted on the accuracy of the information captured. In addition, there was variation in some responses between the online and paper surveys.   NHWDS data by profession  The following should be noted when comparing state and territory indicator data:   * The data include employed professionals who did not state or adequately describe their state of principal practice and employed professionals who reside overseas. The national estimates include this group. * National Health Workforce Data Set: medical practitioners 2010, 2011, 2012 and 2013 * The overall response rate for 2010 (excluding Queensland and Western Australia) was 76.6 per cent. * The overall response rate for 2011 was 85.3 per cent. * The overall response rate for 2012 was 90.1 per cent. * The overall response rate for 2013 was 88.6 per cent. * National Health Workforce Data Set: nurses and midwives 2011, 2012 and 2013 * The overall response rate for 2011 was 85.1 per cent. * The overall response rate for 2012 was 93.3 per cent. * The overall response rate for 2013 was 87.6 per cent. * National Health Workforce Data Set: allied health practitioners 2013 * The overall response rate for 2013 was 87.9 per cent. | |
| Coherence | Health Workforce Survey—coherence with previous surveys   * Labour force data published by the AIHW before the NRAS was established in July 2010, were the result of collated jurisdiction-level occupation-specific surveys. The current Health Workforce Survey gathers similar information from each professional group through a separate questionnaire, tailored slightly to take account of profession-specific responses to certain questions, e.g. work setting of main job. * For this indicator, the workforce surveys for medical practitioners, dental practitioners, nurses/midwives and allied health practitioners collect similar data items, but the methodology differs from previous years. The AHPRA is now the single source of registered practitioner data instead of eight state and territories bodies for each profession, and there is greater consistency between jurisdictions and years in the scope of registration information. * The scope and coverage of the Health Workforce Survey is also different from that of the previous series of AIHW Labour Force Surveys as not all jurisdictions surveyed all types of registered health practitioners. * If the location of principal practice recorded in the registration data was different from the corresponding details of their main job self-reported by practitioners in the survey, the location was derived hierarchically based on main job information and then on principal practice location then place of residence. * Date of birth is one of many data items previously collected by the AIHW Labour Force Surveys, which is now collected by the NRAS. * The three employment-related questions in the new survey are now nationally consistent, but vary from the previous AIHW Labour Force Survey. Due to the differences in data collection (including survey design and questionnaire), processing and estimation methods, it is recommended that comparisons between workforce data from the NHWDS and the previous AIHW Labour Force Survey be made with caution.   AIHW Published Numbers   * For this indicator, the rates are based on practitioners employed in the medical, allied health and nursing and midwifery workforces, which is consistent with data published in AIHW's workforce reports. | |
| Accessibility | Published products available on the AIHW website include workforce reports, survey questionnaires, user guides to the data sets and supplementary detailed tables. | |
| Interpretability | Explanatory information for the Medical Workforce Survey, Dental Workforce Survey and the Nursing and Midwifery Workforce Survey is contained in the published reports, supplementary detailed tables and data quality statements to the data set for each. For the allied health professions, information about their workforce surveys is available in the National Health Workforce Data Set: allied health practitioners data quality statement. This includes collection method, scope and coverage, survey response, imputation and weighting procedures, and assessment of data quality (including comparison with other data sources).  These are available via the AIHW website and readers are advised to read caveat information to ensure appropriate interpretation of the performance indicator. | |
| Data Gaps/Issues Analysis | |  |
| Key data gaps /issues | The Steering Committee notes the following issues:   * The rates have been calculated per 100 000 population for this indicator to assist with interpretation. * Due to the differences in data collection, processing and estimation methods, including survey design and questionnaire, it is recommended that comparisons between workforce data from the National Health Workforce Data Set (NHWDS) and the previous AIHW Labour Force Survey be made with caution and noted in any analyses. * Results for the indicator are estimates because the survey data have undergone imputation and weighting to adjust for non-response. It should be noted that any of these adjustments may have introduced some bias in the estimates and any bias is likely to become more pronounced when response rates are low or when estimates are based on a small number of survey records. Care should be taken when drawing conclusions about the size of the differences between estimates. * The 2012 and 2013 medical, allied health and detnal workforce indicator data exclude provisional registrants (there is no provisional registrant type for nurses and midwives). | |