

# Indicator documentation

## Health status (Tier 1)

### 1.1 Health conditions dimension

#### 1.1.1 Prevalence of chronic diseases

Proposed definition:	The prevalence of a range of conditions including diseases of the circulatory system, cancers, respiratory disease, diabetes and renal disease (see page 8).
Rationale:	All these diseases are serious, debilitating and distressing and can ultimately lead to death. These diseases (along with injury) are the most common causes of death. Prevalence and mortality can frequently be reduced by preventive or medical/surgical action.
Desired outcome:	To achieve low and similar prevalence of these diseases in each area, decreasing over time.
Numerator:	<p>The number of people in the ABS National Health Survey who report having these diseases or conditions.</p> <p>Reported diseases would be selected from amongst those whose details were collected in the most recent ABS National Health Survey. As much as possible these should include diseases that are a substantial burden in terms of death or suffering in regional/remote areas, relate to rural environment or are substantial contributors to the burden on Indigenous people. Continuity with previous reporting is desirable. Diseases to be included should be reviewed before reporting. Diseases for which reporting is likely to be desirable include: ischaemic heart disease, other circulatory diseases, chronic obstructive pulmonary disease, diabetes, renal disease and lung cancer; but could include others.</p>
Denominator:	The number of people who participate in the survey.
Calculation method:	<p>Indirect age-standardisation using Major Cities age-specific rates for people who self-identify that they have these diseases. Comparison between years within areas will require standardisation to age-specific rates in each individual area for either the earlier year, or the year in which the largest sample was taken (e.g. 1995). The reported statistic will be a ratio of observed to expected cases. Confidence intervals calculated using Fieller's Theorem or similar method.</p>
Data source:	ABS National Health Survey (currently 1995 and 2001 available).
Presentation:	<p>MC      IR      OR      Total</p> <p>Indirect age-standardised prevalence for each of the diseases (expressed as a ratio of observed to expected cases).</p>

	For males and females, and for life-stage age groups.
	Total (Indigenous plus non-Indigenous) population. If inter-regional comparisons for non-Indigenous people are different from those for the total population, present for non-Indigenous also.
	In all cases make comparison with rate estimates for the total Indigenous population.
	For each year (e.g. 1995 and 2001 using Major Cities age-specific rates in each year as the standard).
	Time series. Compare rate changes between years.
	Include 95% confidence intervals for all estimates.
Data coverage:	National and approximately 5 yearly (prior to 2001), 2-3 yearly (from 2001).
Data issues:	<p>The National Health Survey has little coverage in remote areas. Sample size was 54,000 in 1995, but was smaller (26,000) in 2001. For many issues (particularly those which are reasonably uncommon), reporting may not be possible in some areas, or may be possible only when data for regional areas is aggregated. Reporting will generally only be possible for Major Cities, and Inner and Outer Regional areas. Reporting will not be possible for remote areas.</p> <p>Even though comparisons include Inner and Outer Regional areas, sampling may be concentrated in larger centres where it is more cost-effective. While this is suspected, it is not confirmed. The effect of possible biased sampling is unclear, but it may act to reduce the size of differentials in these areas.</p> <p>Prevalence of conditions is self-reported and may not be entirely accurate. Reported rates could reflect the prevalence or incidence of disease, individual awareness or the rate at which people are tested for the disease (e.g. diabetes) or risk factor (e.g. hypertension).</p> <p>As with almost all surveys, the small numbers of Indigenous people surveyed make it impractical to report for Indigenous people in each area. However, regional reporting for non-Indigenous people may be possible because of their greater representation. Where reporting for Indigenous people at a regional level is not possible, reporting at the national level should be attempted. Where rates for the total and non-Indigenous populations show similar patterns, those for non-Indigenous people need not be included (for the sake of brevity).</p> <p>Hypertension and cholesterol would be useful to report, but it is likely that a negative response may be due to knowingly not having high blood pressure or high cholesterol levels, or simply because no test has ever been conducted.</p> <p>Data from the National Health Survey are 'weighted up' to reflect the age and sex structure of the Australian population. Calculation of confidence intervals will be on the basis of these weighted estimates, and standard errors should be treated accordingly (using</p>

Related indicators: Fieller's Theorem or a similar method).  
Leading causes of death and 'excess' death (1.4.4), Specialist hospital procedures (3.2.2).

Consultation with: Health Section, ABS.

### 1.1.2 Prevalence of injuries

Proposed definition:	Prevalence of people with injuries (see page 9).
Rationale:	Injury is a leading cause of death and is likely to be more common in non-metropolitan areas.
Desired outcome:	To achieve low and similar prevalence of these injuries in each area, decreasing over time.
Numerator:	The number of people in the ABS National Health Survey who report having a recent injury for which they sought medical treatment (or took some other action); and the number reporting a long-term condition due to an injury.
Denominator:	The number of people who participate in the survey.
Calculation method:	Indirect age-standardisation using Major Cities age-specific rates for people who self-identify as having an injury. Comparison between years within areas will require standardisation to age-specific rates in each individual area for either the earlier year, or the year in which the largest sample was taken (e.g. 1995). The reported statistic will be a ratio of observed to expected cases. Confidence intervals calculated using Fieller's Theorem or similar method.
Data source:	ABS National Health Survey (currently 1995 and 2001 available).
Presentation:	MC      IR      OR      Total Indirect age-standardised prevalence for both injury definitions (recent and condition resulting from) – expressed as a ratio of observed to expected cases. For males and females, and for life-stage age groups. Total (Indigenous plus non-Indigenous) population. If inter-regional comparisons for non-Indigenous people are different from those for the total population, present for non-Indigenous also. In all cases make comparison with rate estimates for the total Indigenous population. For each year (e.g. 1995 and 2001 using Major Cities age-specific rates in each year as the standard). Include 95% confidence intervals for all estimates.
Data coverage:	National and approximately 5 yearly (prior to 2001), 2-3 yearly (from 2001).
Data issues:	Data issues basically the same as those listed for indicator 1.1.1. See comments on page 62.
Related indicators:	Leading causes of death and 'excess' death (1.4.4).
Consultation with:	Health Section, ABS.

### 1.1.3 Prevalence of depressive, anxiety and substance abuse disorders

Proposed definition:	Percentage of males and females aged 18 years and over in each area who report depressive, anxiety and substance abuse disorders, and psychological distress (see page 10).
Rationale:	Depression, anxiety and substance abuse are major mental health conditions. This indicator describes whether there are regional differences in the prevalence of these disorders and of psychological distress.
Desired outcome:	To reduce the prevalence of depressive, anxiety and substance abuse disorders and psychological distress in the population and any differentials in prevalence between areas.
Numerator:	The number of males and females in the ABS Mental Health and Wellbeing Survey (MH&WS) and ABS National Health Survey (NHS) selected age groups (18–24, 25–44, 45–64, 65 years and over) in each area who report these disorders.
Denominator:	Total number of males and females in the surveys who responded to the question.
Calculation method:	Indirect age-standardisation using Major Cities age-specific rates for people who self-identify as having each of these disorders. Comparison between years within areas will require standardisation to age-specific rates in each individual area for either the earlier year, or the year in which the largest sample was taken (e.g. 1995 (NHS) or 1997 (MH&WS)). The reported statistic will be a ratio of observed to expected cases. Confidence intervals calculated using Fieller's Theorem or similar method.
Data source:	The most recent ABS Mental Health and Wellbeing Survey and ABS National Health Survey.
Presentation:	MC      IR      OR      Total Percentage of males and females aged 18 years and over who report depressive, anxiety and substance abuse disorders as well as psychological distress. For males and females, and for life-stage age groups. Total (Indigenous plus non-Indigenous) population. If inter-regional comparisons for non-Indigenous people are different from those for the total population, present for non-Indigenous also. In all cases make comparison with rate estimates for the total Indigenous population, where possible. Time series. Comparison of rates of depression, anxiety and substance abuse disorder with results from the 1997 ABS MH&WS. Comparison of psychological distress with

	2001 NHS.
	Include 95% confidence intervals for all estimates.
Data coverage:	National and occasional (MH&WS), 5 yearly (NHS).
Data issues:	The scope of the MH&WS means that there is little or no representation of those in remote and very remote areas and that reporting for Indigenous people is unlikely to be practical.
	For issues pertaining to ABS NHS data see page 62.
Related indicators:	Happiness (1.3.3), Leading causes of death and 'excess' death (1.4.4).
Consultation with:	Health Section, ABS. Professor Fiona Judd (Monash University).

### 1.1.4 Oral health

Proposed definition:	The mean number of decayed, missing and filled teeth (dmft) in 6 and 12 year olds (see page 10).
Rationale:	The indicator provides a measure of the population's oral health at an early age when the foundation for future oral health is being laid. Poor oral health in childhood predicts poor oral health in older age; and dental health status in adulthood relates (with children's dental health) to potential demand for service. This indicator could be used to identify the need for further efforts to enhance children's oral health in some geographic areas and to direct services generally. Ages 6 years and 12 years are WHO key age groups.
Desired outcome:	To achieve low levels of decayed, missing and filled teeth.
Numerator:	The number of decayed, missing or filled teeth (dmft) for those in the Child Dental Health Survey who were 6 years old and 12 years old at the time of participation.
Denominator:	The number of participants in the Child Dental Health Survey who were 6 and 12 years old.
Calculation method:	Calculate the mean number of dmft teeth for 6 and 12 year olds in each area.
Data source:	AIHW Dental Statistics Research Unit, AIHW. Child Dental Health Survey.
Presentation:	MC      IR      OR      R      VR      Total Mean number of dmft teeth for: <ul style="list-style-type: none"><li>• 6 year olds</li><li>• 12 year olds</li></ul>
Data coverage:	National and annual since 1989 for 6 and 12 year olds.
Data issues:	Data for the 6 and 12 year olds are collected through school dental clinics, and are considered to capture details of almost all children who attend school (although coverage is higher in some states than others). The need for payments by parents in some states reduces the participation and therefore the available data. Overall data coverage is adequate in all (including remote) areas. At present it is not possible to report for Indigenous people. Information about Indigenous status is collected well in only a few states. Work is proceeding to improve data quality and it is hoped that reporting will be possible in the future.  The National Oral Health Survey has not been used to calculate the mean number of decayed, missing and filled teeth in 35-44 year olds, because the latest data available is for 1987-88. Data from this survey does not appear to be well distributed across rural and remote areas. If data becomes available for later years, and the coverage outside Major Cities is better, data for 35-44 year olds could be presented.  In addition, the National Oral Health Survey data does not

allow differentiation of Indigenous from non-Indigenous records; consequently it is not possible to report separately for Indigenous or non-Indigenous people.

Details of edentulism are available from the National Health Survey, although interpretation may be problematic.

Related indicators: Dental consultations (3.5.5), Supply of health workers (3.5.2).

Consultation with: Dental Statistics and Research Unit, AIHW.

### 1.1.5 Communicable diseases

Proposed definition:	<p>Rate of disease notifications for a number of notifiable diseases:</p> <ul style="list-style-type: none"> <li>• Ross River virus;</li> <li>• pertussis;</li> <li>• gastroenteric disease (e.g. campylobacteriosis and salmonellosis); and</li> <li>• sexually transmitted infections ((e.g. chlamydia, syphilis).</li> </ul> <p>See page 11.</p>						
Rationale:	<p>Incidence of communicable diseases can be moderated by public health action. Elevated rates of communicable disease in some areas may suggest policy or public health action.</p>						
Desired outcome:	<p>To achieve low and similar rates of notifications in each area, decreasing over time.</p>						
Numerator:	<p>The number of cases of each disease notified in each year for which data are available. If numbers are too small, report for aggregated periods as appropriate.</p>						
Denominator:	<p>The estimated population living in each area at that time.</p>						
Calculation method:	<p>Indirect age-standardised rates, using Major Cities age-specific rates in the most recent year as the standard (allows comparisons across time as well as regions). Comparison between years requires standardisation to a single reference year (e.g. 1997).</p>						
Data source:	<p>National Notifiable Diseases Surveillance System (NNDSS) collection. ABS population estimates.</p>						
Presentation:	<table border="0" style="width: 100%;"> <tr> <td style="width: 10%;">MC</td> <td style="width: 10%;">IR</td> <td style="width: 10%;">OR</td> <td style="width: 10%;">R</td> <td style="width: 10%;">VR</td> <td style="width: 10%;">Total</td> </tr> </table> <p>Observed number of notifications in each year;</p> <p>Notification rate for persons (indirect age-standardised) each year:</p> <ul style="list-style-type: none"> <li>• Ross River virus;</li> <li>• pertussis;</li> <li>• gastroenteric disease;</li> <li>• sexually transmitted infections.</li> </ul>	MC	IR	OR	R	VR	Total
MC	IR	OR	R	VR	Total		
Data coverage:	<p>Yearly (from 2001) and national.</p>						
Data issues:	<p>Only a proportion of cases of disease are notified. Increases in rate of notification may be as a result of better surveillance, increased testing for the disease or an increase in the rate of disease. Comparison across areas assumes uniform likelihood of testing for and reporting of cases.</p> <p>There would be no reporting by sex or for Indigenous people, both for reasons of statistical power, possible concerns about accurate identification of Indigenous status and for issues of sensitivity.</p> <p>Reporting requires the consent of the Communicable Diseases Network of Australia (CDNA). Presented results and their</p>						

interpretation need to be approved by CDNA before release.

Because immunisation programs have been so successful, peak rates of pertussis are now associated with teenagers rather than infants. Age-specific rates should be carefully reviewed when comparing inter-regional rates.

Related indicators:

Immunisation rates (3.1.1).

Consultation with:

Communicable Diseases & Environmental Health Branch,  
Commonwealth Department of Health and Ageing (DoHA).

### 1.1.6 Birth outcomes

Proposed definition:	Mean and median birth weight and percentage of birth weights in each of a number of ranges (<1,500g, 1,500–2,499g, 2,500–4,199g, 4,200+g) by Indigenous status of mother (see page 11).
Rationale:	Indicator of health status of babies and of the community in general. Being a healthy baby is a good foundation for adult health.
Desired outcome:	To achieve similar and low incidence of out-of-range birth weight babies in all areas, decreasing with time.
Numerator:	Birth weight of babies.
Denominator:	The number of babies born live (excludes still births).
Calculation method:	Percentages within each birth weight range to be calculated for individual maternal age groups in each area, and applied to the total number of live births in each maternal age group in the states and years for which data are available. Means, medians and percentiles calculated as crude (without standardisation).
Data source:	National Perinatal Statistics Unit (NPSU) National Perinatal Database.
Presentation:	MC      IR      OR      R      VR      Total Mean, median, 25th and 75th percentiles of birth weight. Direct age standardised percentage of births in each range: <1,500g, 1,500–2,499g, 2,500–4,199g, 4,200+g. Indigenous (if possible), non-Indigenous and total populations. Time series (if possible and with caution (see data issues below)).
Data coverage:	National and yearly.
Data issues:	There is some relationship between birth weight and maternal age, therefore age standardisation is necessary. Time series for Indigenous and non-Indigenous should be done cautiously and in close consultation with NPSU and Indigenous stakeholders (e.g. NCATSI and OATSIH). Uncertainty about the accuracy of Indigenous identification may prevent calculation and comparison of regional differences for Indigenous babies. If so, overall Indigenous statistics should be presented alongside regional statistics for non-Indigenous and total populations. Data provided by some states and/or in some years may not include postcode, therefore rates calculated in each year may need to employ different denominators. Comparisons across time may be affected.
Related indicators:	Perinatal mortality (1.4.2), Fertility (2.3.4).
Consultation with:	AIHW National Perinatal Statistics Unit (NPSU).

## 1.2 Human function dimension

### 1.2.1 Prevalence of disability

Proposed definition:	<p>The age-standardised prevalence rate in the general population and in the population younger than 65 years with any disability and the age-standardised percentage of the same populations with a profound/severe activity limitation.</p> <p>Also, the estimated percentage of the general population with disabilities in these two categories (see page 12).</p>
Rationale:	<p>Disability (physical, intellectual, psychological and acquired brain injury) has significant impacts on the lives of affected people, who constitute a significant proportion of the Australian population. Understanding of geographic variation may inform policy.</p> <p>Standardisation protects against the impact of different age structures. The number of people with disability (within both categories) in each area is an indicator of burden.</p>
Desired outcome:	<p>To achieve rates of disability and profound/severe activity limitation that are low and similar in all areas; and becoming lower over time.</p>
Numerator:	<p>The number of individuals and the number younger than 65 years identified in the survey as having a disability; and as having a severe or profound disability.</p>
Denominator:	<p>The number of individuals identified in the survey.</p>
Calculation method:	<p>Indirect age-standardisation to the Major Cities age-specific rates calculated from the same survey.</p>
Data source:	<p>ABS Survey of Disability, Ageing and Carers.</p>
Presentation:	<p>MC      IR      OR      Total</p> <p>Indirect age-standardised rate for all ages and for those younger than 65 years.</p> <p>Crude percentage relating to:</p> <ul style="list-style-type: none"><li>• any disability; and;</li><li>• profound or severe disability.</li></ul>
Data coverage:	<p>Data available 5 yearly, national.</p>
Data issues:	<p>These data are available from a survey, which provides small numbers in the most remote areas; consequently confidence in the point estimates for these areas is reduced. There is no Indigenous identifier.</p> <p>People with a severe/profound disability may move to a less remote area in order to access care; consequently, interpretation of the data will require caution.</p>

Reporting of rates for those younger than 65 years may be useful because of the potentially greater possibility of older people with a disability migrating to less remote centres likely to have greater access to services.

Related indicators: Access to disability services (3.5.7).  
Consultation with: Functioning and Disability Unit, AIHW.  
Disability, Ageing and Carers Section, ABS.

### 1.2.2 Reduced activity because of illness

Proposed definition:	The estimated number of days of reduced activity as a result of illness for males and females living in each geographic area (see page 12).
Rationale:	Days of reduced activity (from the ABS National Health Survey (NHS)) – the age-standardised mean of the number of days of reduced activity as a result of illness. The indicator implies the overall burden of ill health, including that from fairly minor illnesses.
Desired outcome:	To achieve low and similar numbers of days of reduced activity as a result of illness, decreasing over time.
Numerator:	The number of days of reduced activity for each respondent in the previous 2 weeks (as recorded in the survey).
Denominator:	The number of respondents to the question in the survey.
Calculation method:	Directly age-standardised to the 2001 Australian population.
Data source:	ABS National Health Survey.
Presentation:	MC      IR      OR      Total  The mean number of days of reduced activity per fortnight for adult males and females in each area (age-standardised).  For all ages and also for those younger than 65 years.  For Indigenous, non-Indigenous and total population (as the data allows).
Data coverage:	National and approximately 5 yearly (prior to 2001), 2-3 yearly (from 2001).
Data issues:	The mean only will be reported. Reporting of medians, 25th and 75th percentiles may be misleading, as it is possible for people to have had more than the 2 weeks with reduced activity. Also, if people have been unwell for some time, 'usual activity' may be similar to 'reduced activity' for an otherwise fairly healthy person.  There may be some difficulty in reporting for the remote areas due to restricted sampling in those areas. The indicator may need to be restricted to population younger than 65 years. Reporting for Indigenous people is unlikely to be possible because of small numbers.  Reporting days away from usual activity may be a better measure than days off work, because employed and unemployed people are included (rather than just employed people). Differences in rates of employment across areas could otherwise add bias.  The National Health Survey data has poor coverage in remote areas, difficulty reporting for Indigenous people at regional level, and may be biased in the more remote areas.

See comments on page 62.

Related indicators: Self-assessed health status (1.3.2).

Consultation with: Health Section, ABS.

## 1.3 Life expectancy and wellbeing dimension

### 1.3.1 Life expectancy

Proposed definition:	Life expectancy at birth for males and females within each area, as well as the probability of living to age 65 years (see page 13).
Rationale:	Reports on an internationally accepted marker of overall health and standard of living. Provides an alternative perspective on overall mortality.
Desired outcome:	To achieve similar life expectancy in all areas for all groups, increasing over time.
Numerator:	Number of deaths.
Denominator:	Number in the population.
Calculation method:	Calculation methods as in Pollard, Yusuf & Pollard (1975). Calculation of life expectancy and probability of survival based on development of abridged life tables from mortality data.
Data source:	AIHW Mortality and Population Databases.
Presentation:	MC      IR      OR      R      VR      Total For males and females: <ul style="list-style-type: none"><li>• life expectancy; and</li><li>• probability of living to 65 years.</li></ul> Total and non-Indigenous populations. Overall Indigenous life expectancy should be compared with the regional rates for non-Indigenous people.
Data coverage:	National and yearly.
Data issues:	It is possible that migration of older sicker people from remote to less remote areas affects the calculated value of life expectancy. Calculation of probability of living to age 65 provides an additional perspective. The smaller population and relatively small numbers of deaths in the more remote areas could cause instability in estimates of age-specific death rates. It is not currently possible to report these figures for the Indigenous population because of poorer identification of Indigenous deaths and likelihood of better identification in more remote areas.
Related indicators:	Overall mortality (1.4.1).
Consultation with:	Summary Measures Unit, AIHW.

### 1.3.2 Self-assessed health status

Proposed definition:	Percentage of respondents' health status assessed as excellent, very good, good, fair, poor in each area (see page 14).
Rationale:	Reflects the gravity and persistence of illness and its consequent impact on the ability of people to function normally.
Desired outcome:	To achieve high and similar proportions of people self-reporting excellent health status in all areas.
Numerator:	Number of people in each self-assessed health status category and in each area.
Denominator:	Population of survey respondents from each area.
Calculation method:	Indirect age standardisation using Major Cities age-specific rates for people who report each category of self-assessed health. Comparison between years within areas will require standardisation to age-specific rates in each individual area for either the earlier year, or the year in which the largest sample was taken (e.g. 1995). The reported statistic will be a ratio of observed to expected cases. Confidence intervals calculated using Fieller's Theorem or similar method.
Data source:	ABS National Health Survey (currently 1995 and 2001 available).
Presentation:	MC      IR      OR      Total Indirect age-standardised rate at which people assess their health as excellent, very good, good, fair or poor (expressed as a ratio of observed to expected cases). For males and females, and for life-stage age groups. Total (Indigenous plus non-Indigenous) population. If inter-regional comparisons for non-Indigenous people are different from those for the total population, present for non-Indigenous people also. In all cases make comparison with rate estimates for the total Indigenous population. For each year (e.g. 1995 and 2001 using Major Cities age-specific rates in each year as the standard). Time series. Compare rate changes between years. Include 95% confidence intervals for all estimates.
Data coverage:	National and approximately 5 yearly (prior to 2001), 2-3 yearly (from 2001).
Data issues:	Responses are self-assessed. Measures of self-assessed health status are based on subjective assessment by individuals about how they feel. As such this measure should be treated with caution.

The National Health Survey data has poor coverage in remote areas, difficulty reporting for Indigenous people at regional level, and may be biased in the more remote areas.  
See comments on page 62.

Related indicators: Happiness (1.3.3).  
Consultation with: Health Section, ABS.

### 1.3.3 Happiness

Proposed definition:	How people in each area feel about their lives in general (delightful through to terrible). See page 14.
Rationale:	Happiness is a major life goal, and a measure of mental health. How people feel about their lives is likely to reflect their general circumstances.
Desired outcome:	To achieve a high and similar proportion of people happy with their lives in area.
Numerator:	The number of respondents to the ABS National Health Survey who rated their lives as delightful through to terrible.
Denominator:	Number of responding males and females in each appropriate age group surveyed in each area.
Calculation method:	Indirect age-standardisation using Major Cities age-specific rates for people who report their lives as delightful through to terrible. Comparison between years within areas will require standardisation to age-specific rates in each individual area for either the earlier year, or the year in which the largest sample was taken (e.g. 1995). The reported statistic will be a ratio of observed to expected cases. Confidence intervals calculated using Fieller's Theorem or similar method.
Data source:	ABS National Health Survey (currently 1995 and 2001 available).
Presentation:	MC      IR      OR      Total Indirect age-standardised rate at which people identify with each category of 'how they feel about life as a whole' (expressed as a ratio of observed to expected cases). For males and females, and for life-stage age groups. Total (Indigenous plus non-Indigenous) population. If inter-regional comparisons for non-Indigenous people are different from those for the total population, present for non-Indigenous also. In all cases make comparison with rate estimates for the total Indigenous population. For each year (e.g. 1995 and 2001 using Major Cities age-specific rates in each year as the standard). Time series. Compare rate changes between years. Include 95% confidence intervals for all estimates.
Data coverage:	National and approximately 5 yearly (prior to 2001), 2-3 yearly (from 2001).
Data issues:	The National Health Survey data has poor coverage in remote areas, has difficulty reporting for Indigenous people at regional level, and may be biased in the more remote areas. See comments on page 62.
Related indicators:	Workforce and employment (2.2.4), Self-assessed health status (1.3.2).
Consultation with:	Cardiovascular Disease, Diabetes and Risk Factor Monitoring Unit, AIHW; and Health Section, ABS.

## 1.4 Deaths dimension

### 1.4.1 Overall mortality

Proposed definition:	Indirectly age-standardised 'all cause' and age-specific death rates, by sex in each area, as well as trends over time and heterogeneity within broad geographic areas (see page 15).						
Rationale:	Overall mortality is perhaps the most significant and ultimate indicator of population health. The mortality data base is also one on the least ambiguous and complete of the health data bases.						
Desired outcome:	To achieve low death rates, similar in all areas and diminishing over time.						
Numerator:	The number of deaths in the 3 most recent years for which data are available.						
Denominator:	The population in each area in the 3 most recent years for which mortality data are available.						
Calculation method:	<p>Indirect age standardisation using Major Cities age-specific rates for a specified period (e.g. 1997–1999). Comparison between years requires standardisation to one single reference period (e.g. 1997–1999).</p> <p>Confidence intervals should be used. They could be calculated using the square root transform or similar method.</p> <p>In trends analysis, indirectly age standardise to Major Cities rates in one (perhaps the most recent) year. Assess the significance of any trends using weighted least squares.</p> <p>In reviewing heterogeneity, indirectly age standardise rates in each SLA using Major Cities age-specific rates as the standard, then group SLAs within remoteness categories.</p>						
Data source:	AIHW Mortality and Population Databases.						
Presentation:	<table><thead><tr><th>MC</th><th>IR</th><th>OR</th><th>R</th><th>VR</th><th>Total</th></tr></thead></table> <p>For males and females:</p> <ul style="list-style-type: none"><li>• number of deaths;</li><li>• indirect age-standardised death rate; and</li><li>• age-specific death rates.</li></ul> <p>For the total (Indigenous plus non-Indigenous) and non-Indigenous populations.</p> <p>Describe indirect age-standardised death rates in each area for non-Indigenous people younger than 65 years.</p> <p>For each of these comparisons, also compare with overall rates for Indigenous people living in those states for which identification is considered to be best – these are generally those states with large proportions of their Indigenous people living in regional and especially remote areas.</p>	MC	IR	OR	R	VR	Total
MC	IR	OR	R	VR	Total		

	Trend over time. Comparison of mean, median and percentiles for SLA-specific death rates within each broad geographic area.
Data coverage:	Data are available nationally and yearly.
Data issues:	<p>Older rural/ remote non-Indigenous people tend to exhibit lower mortality than their metropolitan counterparts (although for younger age groups the tendency is reversed), suggesting that individuals with poorer health tend to move away from remote areas towards less remote centres, presumably to access services. This indicator may underestimate mortality for people in more remote areas.</p> <p>There is significant potential for Indigenous mortality to affect overall mortality and so rates for the Indigenous, non-Indigenous and total populations should each be described where possible.</p> <p>ABS has identified that Indigenous deaths are underestimated in all states and badly so in particular states. Identification may be more accurate in remote areas, which will tend to bias any comparison of Indigenous mortality by area. Until this problem is rectified or the size of any effect understood, reporting of mortality will omit analysis for Indigenous rates, while reporting of non-Indigenous rates will carry a small, quantifiable bias.</p> <p>Indigenous population data by area is available only for 1996 at present. It is likely that population estimates for Indigenous populations will continue to be available for Census years only. It is likely that calculation of rates for non-Indigenous populations will therefore be slightly biased in more remote areas.</p> <p>Rates may need to be based on deaths over several years because of the small populations and numbers of deaths in the more remote areas.</p>
Related indicators:	Life expectancy (1.3.1).
Consultation with:	Population Health Unit (AIHW).

### 1.4.2 Perinatal mortality

Proposed definition:	Perinatal mortality (foetal, neonatal and overall perinatal death rate) per 1,000 births (see page 16).
Rationale:	Perinatal mortality is an indicator of population health and birth outcomes.
Desired outcome:	To achieve low and similar rates of perinatal mortality in all areas, decreasing over time.
Numerator:	(a) Number of stillborn infants weighing at least 400g or born after at least 20 weeks gestation in each area (foetal deaths). (b) Number of neonatal deaths (deaths of babies within 28 days of birth) in each area. (c) Overall perinatal deaths in each area – that is, a + b.
Denominator:	Total births (live births plus stillbirths) to women from each area.
Calculation method:	Crude rates and indirect age standardisation, using Major Cities maternal age-specific death rates as the standard.
Data source:	ABS Perinatal Deaths data, ABS Births data.
Presentation:	MC      IR      OR      R      VR      Total  Average annual number of still births, neonatal deaths and total births.  Crude and indirectly age standardised: <ul style="list-style-type: none"><li>• stillbirth rate;</li><li>• neonatal death rate; and</li><li>• perinatal death rate;</li></ul> Total population.  Time trend for the total (i.e. Indigenous plus non-Indigenous) population.
Data coverage:	National, annual.
Data issues:	Regional comparisons for Indigenous and non-Indigenous populations are not possible with data currently available.
Related indicators:	SEIFA (2.2.8), Birth outcomes (1.1.6).
Consultation with:	National Perinatal Statistics Unit (NPSU), AIHW.

### 1.4.3 Premature mortality

Proposed definition:	Indirect age-standardised 'all cause' death rate for those younger than 65 years in each area. Years of potential life lost and average years of potential life lost per death for those who do not reach 65 years of age (see page 16).
Rationale:	Overall mortality can be misleading. Mortality for older residents (particularly non-Indigenous) living in more remote areas is lower than for their counterparts from metropolitan areas. This is possibly a result of migration by older people with health problems from rural and remote areas to more populous areas with better health services. The number of years of potential life lost provides a single measure of untimely death, where deaths of infants, children and young adults have a large impact on the reported statistic.
Desired outcome:	To achieve low and similar rates of premature death in each area.
Numerator:	The age at death and the difference between this and 65 years for each individual who dies in the reference period.
Denominator:	The total number of deaths (i.e. all deaths) in the reference period.
Calculation method:	Years of potential life lost is the sum, for those who do not live to 65 years, of the shortfall. This number divided by the total number of deaths (of any age), is a measure of the average shortfall at death in each population.
Data source:	AIHW Mortality and Population Databases.
Presentation:	MC      IR      OR      R      VR      Total Age-standardised death rate for those younger than 65 years. Years of potential life lost. Average years of potential life lost per death. For males and females. Indigenous, non-Indigenous, total population (as the data allows).
Data coverage:	Yearly and national.
Data issues:	Issues are similar to those outlined for overall mortality above. Mortality of Indigenous people would not be reported until issues surrounding poor identification were resolved. Presentation of results for the total population and particularly the non-Indigenous population would be particularly useful here.  Selection of 65 as the age before which death is premature has been on the basis that, at ages older than this, migration to less remote centres (so as to access services) is likely to invalidate comparisons between areas. In all probability a figure of 80 or 85 years may be a better measure of the age to which people could

aspire to live. Consequently, this measure is likely to underestimate a more appropriate value of years of potential life lost.

Related indicators: Overall mortality (1.4.1), Life expectancy (1.3.1).

Consultation with: Health Registers and Cancer Monitoring Unit, AIHW.

#### 1.4.4 Leading causes of death and 'excess' death

Proposed definition:	The number of deaths due to each major cause and the number of deaths in 'excess' of that expected if Major Cities rates applied in each area (see page 16).						
Rationale:	<p>Cardiovascular disease, cancer, respiratory disease and injury are the most common general causes of death.</p> <p>A range of specific causes may be responsible for much of the higher rates of death in regional and remote areas. Identification of these causes and their relative importance may help to better direct interventions and services.</p>						
Desired outcome:	Low and similar rates of death as a result of each cause, in each area. No 'excess' deaths outside Major Cities.						
Numerator:	<p>For the 3 most recent years for which data are available:</p> <ul style="list-style-type: none"><li>• the number of deaths due to cardiovascular disease (ICD9 390–459; ICD10 I00–I99);</li><li>• the number of deaths due to cancer (ICD9 140–208, 210–239; ICD10 C00–C97, D00–D48);</li><li>• the number of deaths due to respiratory disease (ICD9 470–478, 490–519; ICD10 J30–J98);</li><li>• the number of deaths due to injury (ICD9 800–999; ICD10 V01–Y89).</li><li>• the number of deaths due to specific causes identified as being important contributors to the 'excess' deaths burden in regional and remote areas.</li></ul>						
Denominator:	The population in each area in the 3 most recent years for which mortality data are available.						
Calculation method:	<p>Indirect age standardisation using Major Cities age-specific rates for each cause of death for the 3 most recent years (e.g. for 2002–2004).</p> <p>'Excess' deaths described as the number of deaths in excess of those expected if Major Cities rates applied to each 5-year age group in each area.</p>						
Data source:	AIHW Mortality and Population databases.						
Presentation:	<table><thead><tr><th>MC</th><th>IR</th><th>OR</th><th>R</th><th>VR</th><th>Total</th></tr></thead></table> <p>Indirect age-standardised death rate.</p> <p>Number of deaths.</p> <p>Number of deaths in excess of those expected if Major Cities rates applied.</p> <p>For males and females:</p> <ul style="list-style-type: none"><li>• non-Indigenous and total population – compare with overall rates for Indigenous (i.e. no regional analysis until data quality improves); and</li><li>• repeat for non-Indigenous 0–64 years.</li></ul>	MC	IR	OR	R	VR	Total
MC	IR	OR	R	VR	Total		

For each disease group (above) and for other more specific disease groups such as:

- ischaemic heart disease and cerebrovascular disease;
- lung, breast, colorectal and cervical cancer;
- chronic obstructive pulmonary disease and asthma; and
- motor vehicle accidents, suicide and interpersonal violence.

Data coverage:

New national data are available yearly.

Data issues:

Issues are similar to those outlined for the indicator of overall mortality.

Reporting for asthma should also be for 5–34 year olds, because in older age the diagnosis for asthma can be confused with chronic obstructive pulmonary disease.

Related indicators:

Overall mortality (1.4.1), Prevalence of chronic diseases and injury (1.1.1–1.1.2).

Consultation with:

Population Health Unit, AIHW.