

Indicator documentation

Health status (Tier 1)

1.1 Health conditions dimension

1.1.1 Prevalence of chronic diseases

Proposed definition:	Prevalence of circulatory and respiratory diseases, cancer, diabetes and renal disease (see page 8).
Rationale:	All these diseases are serious, debilitating, 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 modified by preventive or medical/surgical action.
Desired outcome:	Low and similar prevalence of these diseases in each area, decreasing over time.
Numerator:	The number of people who report having these diseases or conditions in the National Health Survey. Reported diseases to include cerebrovascular disease and stroke, heart disease, hypertension and all diseases of the circulatory system, total neoplasms, asthma, bronchitis/emphysema and total respiratory diseases, total diabetes and kidney diseases.
Denominator:	The number of people who participate in the National Health Survey.
Calculation method:	Indirect age-standardisation using standard rates based on the prevalence of people who self-identify with these diseases nationally. Comparison between years will require standardisation to age-specific rates for a single year (e.g. 1995).
Data source:	ABS National Health Survey (currently 1989–90, 1995 and 2001 available).
Presentation:	MC IR OR R/VR Total Indirect age-standardised prevalence for each of the diseases. Males and females. Indigenous, non-Indigenous and total population (as the data allows).
Data coverage:	Time series (for each of the years in which data is available). National and approximately 5-yearly.

Data issues:	<p>The National Health Survey has low coverage in remote and very poor or non-existent coverage in very remote areas. Sample size is typically greater than 50,000. For many issues (particularly those which are reasonably uncommon), reporting is not possible in these areas, or is possible only when data for remote and very remote areas are aggregated.</p> <p>Sampling in rural and remote areas may be concentrated in larger centres where sampling is more cost effective. While this is suspected, it is not confirmed. The effect of possible biased sampling is unclear, but may reduce the size of differentials in rural and remote areas.</p> <p>Prevalence of conditions is self-reported and may not be entirely accurate.</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.</p>
Related indicators:	Leading causes of death (1.4.5), Specialist hospital procedures (3.2.2).
Consultation with:	Tim Carlton and Paul Atyeo (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:	Low and similar prevalence of these injuries in each area, decreasing over time.
Numerator:	<p>The number of people who report having an injury in the ABS National Health Survey.</p> <p>Reported injuries to include fractures, dislocations, sprains and strains, open wounds, bruising and crushing, burns and scalds, complications of surgical and medical care and total injuries.</p>
Denominator:	The number of people who participate in the National Health Survey.
Calculation method:	Indirect age-standardisation using standard rates based on the prevalence of people who self-identify with these injuries nationally. Comparison between years will require standardisation to age-specific rates for a single year (e.g. 1995).
Data source:	ABS National Health Survey (currently 1989–90, 1995 and 2001 available).
Presentation:	<p>MC IR OR R/VR Total</p> <p>Indirect age-standardised prevalence.</p> <p>Males and females.</p> <p>Indigenous, non-Indigenous and total population (as the data allows).</p> <p>Time series (for each of the years in which data is available).</p> <p>Report for each of the injuries mentioned.</p>
Data coverage:	National and approximately 5-yearly.
Data issues:	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 63.
Related indicators:	Leading causes of death (1.4.5).
Consultation with:	Tim Carlton and Paul Atyeo (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 (see page 10).
Rationale:	Depression, anxiety and substance abuse are major mental health conditions. This indicator describes whether the prevalence of depressive disorders is different in rural and remote areas.
Desired outcome:	To reduce the prevalence of depressive, anxiety and substance abuse disorders in the population and any differentials in prevalence between areas. To promote better detection and treatment of depression.
Numerator:	The number of males and females in 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 survey who responded to the question.
Calculation method:	Simple proportions and indirect age-standardised proportions using the age-specific proportions from the overall population in the survey as the standard.
Data source:	1997 ABS Mental Health and Wellbeing Survey.
Presentation:	MC IR OR R/VR Total Percentage of males and females aged 18 years and over who report depressive, anxiety and substance abuse disorders. For age groups (as the data allows): <ul style="list-style-type: none">• 18–24• 25–44• 45–64• 65 years and over and• for all ages (age-standardised). For Indigenous, non-Indigenous and total populations (as the data allows). Time series is not possible at present.
Data coverage:	National, 1997.
Data issues:	The scope of the survey means that there is little or no representation of those in remote and very remote areas and that reporting for Indigenous people will be difficult or impossible.
Related indicators:	Happiness (1.3.3), Leading causes of death (1.4.5).
Consultation with:	Josie Barac, Tim Carlton, Lishani Gunawardena (Health Section, ABS). Professor Fiona Judd (Monash University).

1.1.4 Decayed, missing and filled teeth

Proposed definition:	The mean number of decayed, missing and filled (dmf) teeth in 6, 12 and 35–44 year olds in each area. The percentage of those 65 years and older who are edentulous (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 and in adulthood. Poor oral health in childhood predicts poor oral health in older age, 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, 12 and 35–44 are WHO key age groups. Edentulism in older people is an indication of available services in the past in terms of physical and financial access.
Desired outcome:	Low levels of decayed, missing and filled teeth and edentulism in all areas.
Numerator:	<p>The number of teeth that are decayed, missing or filled for those in the Child Dental Health Survey who were 6 years old and 12 years old at the time of participation, and for those who were 35–44 years old at the time of the National Oral Health Survey.</p> <p>The number of people 65 years and older, who were edentulous at the time of the National Health Survey, by 5-year age group.</p>
Denominator:	<p>The number of participants in the Child Dental Health Survey who were 6 and 12 years old and the number in the National Oral Health Survey who were 35–44 years old.</p> <p>The number of people who are in each 5-year age group and older than 65 years in the National Health Survey.</p>
Calculation method:	<p>Calculate the mean number of dmf teeth, the median, 25th and 75th percentiles, for each age group in each area.</p> <p>Percentages of edentulism for those 65 years and older age-standardised indirectly to the national age-specific proportions. Comparison between years will require standardisation to age-specific rates for a single year (e.g. 1995).</p>
Data source:	<p>AIHW Dental Statistics Research Unit, AIHW. Child Dental Health Survey, National Oral Health Survey.</p> <p>ABS National Health Survey.</p>

Presentation:	MC IR OR R VR Total
	Number of dmf teeth for each individual (mean, median, 25th and 75th percentiles):
	<ul style="list-style-type: none"> • 6 year olds • 12 year olds • 35-44 year olds.
	Age-standardised percentage of older people who are edentulous.
Data coverage:	National and annual since 1989 for 6 and 12 year olds, 1987 for 35-44 year olds, and 1989-90, 1995 and 2001 for those older than 65 years.
Data issues:	The 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.
	Data to calculate the mean number of decayed, missing and filled teeth in 35-44 year olds is only currently available for 1987/88; there has not been another National Oral Health Survey since. Data for the survey did not appear to be well distributed across rural and remote areas. Until data is available for other years, and the coverage outside major cities is better, data for 35-44 year olds would not be presented.
	Data for the 6 and 12 year olds is collected through school dental clinics, and is 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. 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 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 63.
Related indicators:	Dental consultations (3.5.5), Numbers of health workers (3.5.2).
Consultation with:	David Brennan and Jason Armfield (Dental Statistics and Research Unit, AIHW).

1.1.5 Communicable diseases

Proposed definition:	Rate of disease notifications for a number of notifiable diseases: all arboviral disease (e.g. Ross River, Barmah Forest); pertussis; foodborne disease (e.g. campylobacterosis and salmonellosis); sexually transmitted infections (e.g. chlamydia, syphilis). See page 11.
Rationale:	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.
Desired outcome:	Low and similar rates of notifications in each area, decreasing over time.
Numerator:	The number of cases of each disease notified in each year for which data is available. If numbers are too small, report for aggregated periods as appropriate.
Denominator:	The population in each area for that period.
Calculation method:	Indirect age-standardised rates, using national age-specific rates as the standard. Comparison between years requires standardisation to a single reference year (e.g. 1997).
Data source:	National Notifiable Diseases Surveillance System (NNDSS) collection. AIHW population databases.
Presentation:	MC IR OR R VR Total Notification rate for persons (age-standardised): <ul style="list-style-type: none">• arboviral disease;• pertussis;• foodborne disease;• sexually transmitted infections.
Data coverage:	Yearly and national.
Data issues:	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. 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.
Related indicators:	Immunisation rates (3.1.1).
Consultation with:	Jenean Spencer, Peter Lindenmayer (Communicable Diseases & Environmental Health Branch, Commonwealth Department of Health and Ageing (DoHA)). Reporting requires consultation with the Communicable Diseases Network, Australia (CDNA).

1.1.6 Birth outcomes

Proposed definition:	Mean 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:	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 and still).
Calculation method:	Means, medians and percentages to be calculated for individual age groups or age-standardised (using the national means, medians and percentages for each 5-year age group of maternal age). In comparing between years, means and medians are standardised to a single year (e.g. 1997).
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. Percentage of births in each range: <1,500g, 1,500–2,499g, 2,500–4,199g, 4,200+g. Indigenous, non-Indigenous and total population. Time series (currently 1992–1999 available).
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).
Related indicators:	Perinatal mortality (1.4.2), Fertility (2.3.4).
Consultation with:	Elizabeth Sullivan (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 population younger than 65 years with any disability and the age-standardised percentage of the same population with a profound/severe activity limitation.</p> <p>Also, the estimated number of people with disabilities in these two groups (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 provides an indicator of burden.</p>					
Desired outcome:	Rates of disability and profound/severe activity limitation low and similar in all areas, becoming lower over time.					
Numerator:	<p>The number of individuals younger than 65 years identified in the survey as having a disability.</p> <p>And the number younger than 65 years identified as having a severe or profound disability.</p>					
Denominator:	The number of individuals younger than 65 years identified in the survey.					
Calculation method:	Indirect age-standardisation to the national age-specific rates calculated from the same survey.					
Data source:	ABS Survey of Disability, Ageing and Carers.					
Presentation:	<table><thead><tr><th>MC</th><th>IR</th><th>OR</th><th>R/VR</th><th>Total</th></tr></thead></table> <p>Age-standardised prevalence rates (0–64 year olds): all disability; and profound or severe disability.</p>	MC	IR	OR	R/VR	Total
MC	IR	OR	R/VR	Total		
Data coverage:	Data available 5-yearly, national.					
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 consideration of the prevalence of ‘all disabilities’.</p> <p>It is likely that low levels of sampling will prevent reporting for people from remote and very remote areas.</p>					
Related indicators:	Access to disability services (3.5.7).					

Consultation with: Xingyan Wen and Phil Anderson, Ros Madden (Disability Services Unit, AIHW).
Ken Black, Margaret Sherley (Disability, Aging 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 – the age-standardised mean of the number of days of reduced activity as a result of illness from the National Health Survey.
Desired outcome:	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 two weeks (as recorded in the National Health Survey).
Denominator:	The number of respondents to the question in the survey.
Calculation method:	Indirectly age-standardised to the national age-specific rates. For comparison over time, standardisation should be to national rates in one of the years (e.g. 1995). Comparison between years will require standardisation to age-specific rates for a single year (e.g. 1995).
Data source:	ABS National Health Survey.
Presentation:	MC IR OR R/VR 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 5-yearly.
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 two 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 63.

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

Consultation with: Tim Carlton, Paul Atyeo (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 55 and 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:	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: life expectancy; probability of living to: <ul style="list-style-type: none">• 55 years; and• 65 years. Indigenous, non-Indigenous and total population (as the data allows).
Data coverage:	National and 3-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 55 or 65 provides an additional perspective. The smaller population and relatively small number 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:	John Goss (Summary Measures Unit, AIHW).

1.3.2 Self-assessed health status

Proposed definition:	Percentage of respondent's health status assessed as excellent, very good, good, fair, poor by 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:	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-standardised to the national age-specific rates calculated from this survey. Comparison between years will require standardisation to national rates in one of the years only.
Data source:	ABS National Health Survey (currently 1989-90, 1995 and 2001 available).
Presentation:	MC IR OR R/VR Total The age-standardised and crude percentages of males and females who rate their health as excellent, very good, good, fair or poor. For Indigenous, non-Indigenous and the total population (as the data allows). Time trend.
Data coverage:	Every 5 years after the National Health Survey.
Data issues:	Responses are self-assessed. Standardisation is necessary to ensure that comparison between areas is valid (as the age-sex structure of the population of respondents from each area may well vary). Comparison over time relies on methodology and survey questions remaining constant. 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 63.
Related indicators:	Happiness (1.3.3).
Consultation with:	Tim Carlton, Paul Atyeo (Health Section, ABS).

1.3.3 Happiness

Proposed definition:	How people 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 and their degree of happiness about being alive.
Desired outcome:	A high and similar proportion of people happy with their lives.
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:	Indirectly age-standardise the percentage of the population who rate their lives as delightful through to terrible, using the national age-specific rates. Comparison between years requires the use of standard rates from one year only as the standard.
Data source:	ABS National Health Survey (currently 1989-90, 1995 and 2001 available).
Presentation:	MC IR OR R/VR Total The age-standardised percentage of people in each category of 'how they feel about life as a whole'. For Indigenous, non-Indigenous and the total population (as the data allows).
Data coverage:	National, every 5 years.
Data issues:	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 63. Mental health score was considered as a measure of happiness, but how people felt about their lives was considered to be a clearer measure.
Related indicators:	Workforce and employment (2.2.4), Self-assessed health status (1.3.2).
Consultation with:	Tracy Dixon (Cardiovascular Disease, Diabetes and Risk Factor Monitoring Unit, AIHW). Tim Carlton (Health Section, ABS).

1.4 Deaths dimension

1.4.1 Overall mortality

Proposed definition:	Indirectly age-standardised 'all cause' death rate, trend 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.
Desired outcome:	Low death rate, similar in all areas and diminishing over time.
Numerator:	The number of deaths in the three most recent years for which data is available.
Denominator:	The population in each area in the three most recent years for which mortality data is available.
Calculation method:	Indirect age standardisation using national 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).
Data source:	AIHW Mortality and Population Databases.
Presentation:	MC IR OR R VR Total For males and females: <ul style="list-style-type: none">• number of deaths; and• indirect age-standardised death rate. For Indigenous, non-Indigenous, total population (as the data allows). Trend over time. Comparison of rates for SLAs within broad geographic areas.
Data coverage:	Data is available nationally and yearly.
Data issues:	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. There is significant potential for Indigenous mortality to affect overall mortality and so rates for Indigenous, non-Indigenous and the total population should each be described where possible. ABS estimates that Indigenous deaths are underestimated in all States and particularly badly in some States (currently Victoria, New South Wales, Tasmania and the Australian Capital Territory). 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, while reporting of non-Indigenous rates will carry a small quantifiable bias.

Indigenous population data by area is available only for 1996 at present. It is likely that population estimates for Indigenous will continue to be available for Census years only. Calculation of rates for non-Indigenous populations will therefore likely be slightly biased in more remote areas.

Rates need to be based on deaths over several years because of the small populations and numbers of deaths in the more remote areas.

Related indicators: Age-specific mortality (1.4.3), Life expectancy (1.3.1).

Consultation with: Nil.

1.4.2 Perinatal mortality

Proposed definition:	Perinatal mortality (fetal, neonatal and overall perinatal death rate) per 1,000 births for Indigenous, non-Indigenous and total persons (see page 15).
Rationale:	Perinatal mortality is an indicator of population health and birth outcomes.
Desired outcome:	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. 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 and stillbirths) to women from each area.
Calculation method:	Indirect age-standardisation, using national 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 and neonatal deaths. Stillbirth rate. Neonatal death rate. Perinatal death rate. Indigenous, non-Indigenous and total population (as the data allows). Time trend (for the total (i.e. Indigenous plus non-Indigenous) population).
Data coverage:	National, annual.
Data issues:	It is likely that poor identification of Indigenous mortality will prevent meaningful use of statistics for Indigenous (and perhaps also for non-Indigenous populations).
Related indicators:	SEIFA (2.2.8), Birth outcomes (1.1.6).
Consultation with:	Dr Elizabeth Sullivan (NPSU).

1.4.3 Age-specific mortality

Proposed definition:	Age-specific death rates for males and females from each area. See page 16.
Rationale:	Age-specific death rates give finer detail required for policy development by identifying life stages at which rates are particularly elevated. Age-specific death rates also provide a more direct (but cumbersome) comparison of mortality across the areas.
Desired outcome:	Age-specific death rates similar in all areas.
Numerator:	Numbers of deaths in each age group.
Denominator:	Population in each age group.
Calculation method:	Divide the number of deaths by the population.
Data source:	AIHW Mortality and Population Databases.
Presentation:	MC IR OR R VR Total Number of deaths. Rate per 100,000 population. For age groups 0-4, 5-14, 15-24, 25-44, 45-64, 65-74, 75+. For males and females. Indigenous, non-Indigenous and total population (as the data allows).
Data coverage:	National and annual.
Data issues:	As for overall mortality. Reporting of Indigenous mortality is likely to be rendered impractical by poor identification.
Related indicators:	Other mortality indicators (1.4.1-1.4.5), Demography (2.3.1).
Consultation with:	Nil.

1.4.4 Premature mortality

Proposed definition:	Indirectly age-standardised 'all cause' death rate for people younger than 65 years, by sex in each area. Years of life lost and average years of life lost per death for those who fail to reach 70 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 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. Standardised death rates for younger people (i.e. younger than 65 years) provide a check. The number of years of 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:	Low and similar rates of premature death in each area.
Numerator:	The number of deaths of 0–64 year olds in a certain time period. The age at death and the difference between this and 70 years for each individual who dies in this period.
Denominator:	The population of 0–64 year olds in each area in the years for which mortality data is available. The total number of deaths in these years.
Calculation method:	Indirect age standardisation using national age-specific rates for those aged 0–64 years (e.g. for 1997–1999). Years of life lost is the sum, for those who fail to live to 70 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 Indirect age-standardised death rate (0–64 years). Years of life lost. Average years of life lost per death. For males and females. Indigenous, non-Indigenous, total population (as the data allows).
Data coverage:	Three-yearly and national.

Data issues: Issues are similar to those outlined for overall mortality above. Mortality of Indigenous people would not be reported until after 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 70 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 life lost.

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

Consultation with: Chris Stevenson (Health Registers and Cancer Monitoring Unit, AIHW).

1.4.5 Leading causes of death and excess deaths

Proposed definition:	Mortality and excess deaths due to cardiovascular disease, cancer, respiratory disease, diabetes, renal disease and injury (all ages and 0–64 year olds), in the three years for which data are most recent (see page 16).
Rationale:	<p>Cardiovascular disease, cancer, respiratory disease and injury are the most common general causes of death.</p> <p>Diabetes is a common contributor to death, and is especially prevalent in the Indigenous community and is a national health priority area.</p> <p>Death due to renal disease is much more common in remote areas, likely as a result of the larger numbers of Indigenous people who live there. Risk factors for renal disease (diabetes and urinary tract infection) are potentially preventable. The prevalence of renal disease may be increasing rapidly in more remote areas.</p> <p>For some of these conditions there appear to be higher rates in remote areas.</p>
Desired outcome:	Low and similar rates of death as a result of each cause, in each area.
Numerator:	<p>For the three most recent years for which there is data:</p> <ul style="list-style-type: none">• the number of deaths due to cardiovascular disease (ICD9 390–459; ICD10 I00–I99);• the number of deaths due to cancer (ICD9 140–208, 210–239; ICD10 C00–C97, D00–D48);• the number of deaths due to respiratory disease (ICD9 470–478, 490–519; ICD10 J30–J98);• the number of deaths whose principal cause was diabetes and also the number for which diabetes was mentioned as a contributor (ICD9 250; ICD10 E10–E14);• the number of deaths due to renal disease (ICD9 580–589; ICD10 N00–N19); and• the number of deaths due to injury (ICD9 800–999; ICD10 V01–Y89).
Denominator:	The population in each area in the three most recent years for which mortality data is available.
Calculation method:	<p>Indirect age standardisation using national age-specific rates for each cause of death (e.g. for 1997–1999).</p> <p>Excess deaths described as the number of deaths in excess of those expected if major city rates applied to each 5-year age group in each area.</p>
Data source:	AIHW Mortality and Population databases.

Presentation:	MC IR OR R VR Total
	Indirect age-standardised death rate. Number of deaths in excess of those expected if major city rates applied.
	For males and females: <ul style="list-style-type: none"> • Indigenous, non-Indigenous and total population (as the data allows); • repeat for non-Indigenous 0–64 years.
	For each disease group (above) and for each of the following more specific disease groups: <ul style="list-style-type: none"> • 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:	Three-yearly and national.
Data issues:	Issues are similar to those outlined for the indicator of overall mortality. Reporting for asthma also 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:	Nil.

Determinants of health (Tier 2)

2.1 Environmental factors dimension

2.1.1 Fluoridated water

Proposed definition:	The percentage of 'local areas' in which reticulated water supplies have a fluoride concentration within the NHMRC guidelines (see page 18).
Rationale:	Fluoride augmentation of domestic water supplies reduces the risk of dental caries in children and in their later life. Opportunity for public health gain exists in any area where less than 100% of reticulated water supplies contain adequate fluoride.
Desired outcome:	All reticulated water supplies to contain adequate fluoride.
Numerator:	The number of areas (defined by postcode) which have reticulated water supplies with adequate fluoride concentration.
Denominator:	The number of postcodes.
Calculation method:	Simple percentage of postcode areas with adequate fluoride concentration.
Data source:	Dental Statistics and Research Unit (DSRU), AIHW.
Presentation:	MC IR OR R VR Total Percentage of postcodes where reticulated water supplies have adequate fluoride concentration.
Data coverage:	This data set is national, with data for the various areas updated from time to time. Some data within this data set may be up to a decade old.
Data issues:	This indicator describes only the concentration of reticulated water supplies; it reports nothing about private water supplies. Some water (e.g. some bore water) is naturally fluoridated, while tank (collected rain) water contains very little fluoride. This data set does not provide information about the percentage of water supplies that have adequate fluoride, it simply provides information about whether the fluoride in reticulated water supplies in any particular postcode is equal to or greater than the NHMRC target.
Related indicators:	Decayed, missing and filled teeth (1.1.4), Dental consultations (3.5.5).
Consultation with:	David Brennan, Jason Armfield (Dental Statistics and Research Unit, AIHW).

2.2 Socioeconomic factors dimension

2.2.1 Educational status of the adult population

Proposed definition:	The percentage of persons aged 20–39, 40–59 and 60+ who completed primary school, Year 10, high school (i.e. to matriculation) or have tertiary qualifications (see page 20).
Rationale:	The indicator of adult educational status compares educational background of the adult population currently living in each area.
Desired outcome:	High level of education in each area.
Numerator:	The number of persons 20–39, 40–59 and 60+ years who left school when younger than 12, 17 or aged 17 years and older, and the number who have completed some tertiary qualification (including level/type of qualification (TAFE certificate, bachelor degree or better, other (e.g. diploma)).
Denominator:	The number of people aged 20–39, 40–59 and 60+ years in each area.
Calculation method:	Simple percentage for each age group.
Data source:	ABS Census.
Presentation:	MC IR OR R VR Total For age groups: 20–39, 40–59, 60+ years. Percentage adults left school: <ul style="list-style-type: none">• before age 12 years;• before age 17 years; or• after turning 17 years. Percentage of adults who completed some tertiary qualification. Indigenous, non-Indigenous and total population.
Data coverage:	5-yearly, national.
Data issues:	In 1991 and 1996, data about the level of schooling achieved is not available; consequently, age left school can be used instead. However, in 2001, the Census collected information on level of schooling achieved, not age left school, and consequently there will be a break in the continuous reporting of this indicator.
Related indicators:	Progression from school to university (2.2.3), High school retention rates (2.2.2).
Consultation with:	Gill McPadden, Kathie Whiting (Client Services, ABS).

2.2.2 High school retention rates

Proposed definition:	The percentage of 17 year olds enrolled in secondary school (see page 20).
Rationale:	The number of people enrolled in secondary schools is an indicator for measuring the potential for future employment and potential for health. This is also a measure of the opportunity afforded to children in each area.
Desired outcome:	High and similar proportion of people at school when 17 years old in each area.
Numerator:	The number of 17 year old males and females from each area enrolled in secondary school, by Indigenous status.
Denominator:	Population of Indigenous and non-Indigenous males and females aged 10–14 years in each area (four years previously) divided by five. This population group of younger people four years previously has been selected to account for the fact that the population of 17 years olds in remote areas will have dwindled as people seek employment in less remote areas).
Calculation method:	The reported statistic is a simple percentage.
Data source:	ABS Census, AIHW Population Database.
Presentation:	MC IR OR R VR Total Number enrolled. Percentage enrolled. For males and females. For Indigenous, non-Indigenous and total.
Data coverage:	5-yearly, national.
Data issues:	ABS Census data is available only for census years, but it is possible to obtain this information by postcode of the child's home address. DEST data for completions for secondary schools is not available so it is not possible to gain an accurate picture of persons who completed secondary school. Data for government and non-government schools is only available from 1998; prior to 1998, data is available for non-government schools only. DEST data is the count of the number of children at any age enrolled by postcode of the school. It is not possible to provide this data by postcode of the child's home address.
Related indicators:	Progression from school to university (2.2.3), Educational status of the adult population (2.2.1).
Consultation with:	Gill McPadden (Client Services, ABS).

2.2.3 Progression from school to university

Proposed definition:	The proportion of 17–20 year old persons who have commenced first year of university, for the first time (see page 20).
Rationale:	The number of people enrolled in tertiary education is an indicator for measuring the potential for future employment, higher socioeconomic status, and the greater potential for better health. This is also a measure of the opportunity afforded to children in each area.
Desired outcome:	Similar percentage of each cohort going on to commence at university in each area.
Numerator:	Number of male and female students aged 17–20 from each area enrolled in first year of university.
Denominator:	Population of males and females aged 10–14 years (divided by five) in each area 5 years previously. This age group is chosen to ensure the population estimate for youth in rural and remote areas is not underestimated. A proportion of young adults often leave rural and remote areas to seek employment or education in larger centres and therefore rural and remote population of 17–20 year olds is deflated.
Calculation method:	The reported statistic is a simple percentage.
Data source:	DEST university commencements, AIHW Population database.
Presentation:	MC IR OR R VR Total Percentage commenced university. Males and females. Indigenous, non-Indigenous and total population. Time trend.
Data coverage:	National, annual.
Data issues:	Rural/remote students may have already moved to the city prior to enrolling at university therefore limiting the capture of rural/remote students. This indicator assumes that if an individual enrolls at university, they will do so once before they reach 21 years of age. Data pertaining to university completions are not available for geographic areas. Data pertaining to enrolments at TAFE may be available from the National Centre for Vocational Education Research.
Related indicators:	High school retention rates (2.2.2).
Consultation with:	Geoff Izzard (Statistics Unit, DEST).

2.2.4 Workforce and employment

Proposed definition:	Proportions of males and females aged 15–64 and 15–54 years: a) in the labour force (labour force participation rate); b) unemployed as a proportion of the labour force (unemployment rate); c) employed as a proportion of the population (employment/population ratio). See page 21.
Rationale:	Unemployment reflects the level of social disadvantage experienced which is a risk factor for health. An improvement in employment level may translate into improvements in health.
Desired outcome:	Low and similar levels of unemployment in each area, diminishing over time.
Numerator:	For each age group (15–64 or 15–54 years) and for each area: a) number of people in the labour force; b) number of unemployed people (i.e. without a job but in the labour force); c) number of employed people.
Denominator:	Estimated resident population of people aged (15–64 or 15–54 years) in each area in the same census year.
Calculation method:	Indirectly age-standardised using national employment age-specific rates for the same period. Comparison between years requires standardisation to rates in a single year.
Data source:	ABS Census.
Presentation:	MC IR OR R VR Total For males and females: <ul style="list-style-type: none">• labour force participation rate;• unemployment rate;• employment/population ratio. Indigenous, non-Indigenous and total population. Time trend.
Data coverage:	National, 5-yearly after the Census.
Data issues:	CDEP has not been included because of concerns of data validity and quality (CDEP data available from ABS describes the number registered with/for CDEP and not the number who are actually engaged working). This indicator does not describe whether employment is full time or part time.
Related indicators:	Indicators of income (2.2.5–2.2.7) and mortality (1.4.1–1.4.5).
Consultation with:	Kathie Whiting (Client Services, ABS). Brendan Brady (Labour Force and Rural Health Unit, AIHW).

2.2.5 Household income

Proposed definition:	<p>Equivalised 'after-tax' household income (adjusted for the number and age of those in the household).</p> <p>The gross household income and the number in each household (see page 22).</p>
Rationale:	<p>Income provides people with opportunities, control, access to housing, goods and services as well as mobility. Reporting average (adult) income and household income does not consider the larger number of children in more remote households. This indicator attempts to provide a measure of the after-tax income with which to support each individual in a household. The household is used as the unit of income because individuals in households generally share resources. Also while some households have large incomes, many will have small incomes and also many children.</p>
Desired outcome:	<p>High and similar levels of income in each area.</p>
Numerator:	<p>Household 'after-tax' income (from the ABS Survey of Income and Housing Costs (SIHC)).</p> <p>Gross household income (from Census).</p> <p>Number of adults (15+) and children (0-14) usually resident in each household (from Census).</p>
Denominator:	<p>Household age and sex structure and the number in the household (from SIHC).</p> <p>The number of households (from Census).</p>
Calculation method:	<p>The basis of the summary statistic is the after-tax income weighted by the number and age of individuals in the household. The new OECD summary measure (replacing the old OECD measure and the Henderson scales) is essentially the after-tax household income divided by the weighted number of people in the household (the first adult = 1, subsequent adults = 0.5, children = 0.3 each).</p> <p>Reported statistics would include the mean, median, 25th and 75th percentiles of the weighted after-tax household income.</p> <p>From the ABS Census, the mean, median, 25th and 75th percentile of:</p> <ul style="list-style-type: none">• the gross household income; and• the number of adults and children in each household.
Data source:	<p>ABS Survey of Income and Housing Costs and ABS Census.</p>

Presentation:	<p>From SIHC: MC IR OR</p> <ul style="list-style-type: none"> • equivalised after-tax household income, expressed as the mean, median, 25th percentile and 75th percentile. <p>From ABS Census: MC IR OR R VR Total</p> <ul style="list-style-type: none"> • Gross household income • number usually resident in each household <ul style="list-style-type: none"> adults children total. <p>Reporting against Indigenous and non-Indigenous is not possible from the ABS Survey of Income and Housing Costs, but is possible using Census data.</p>
Data coverage:	National and 2-3-yearly after each ABS Survey of Income and Housing Costs or 5-yearly for the Census.
Data issues:	<p>Data for the ABS Survey of Income and Housing Costs only exists from 1994-95 onwards; the sample size is approximately 10,000.</p> <p>The SIHC does not collect information in most of the remote areas. There would be very little information that could be provided with any accuracy for the remote areas, since they only account for a small part of the population, therefore any analysis would be largely confined to 'major city', 'inner regional' and 'other' areas. Reliable estimates of change over time could not be provided because of the relatively brief period over which data has been collected.</p> <p>Data from the Census describes only gross household income (i.e. it is not possible to describe equivalised after-tax household income), but coverage is good in all areas.</p>
Related indicators:	Gap between rich and poor (2.2.6).
Consultation with:	Jenny Harber, Leon Pietsch (Living Conditions Section, ABS). Gill McPadden (Client Services, ABS).

2.2.6 Gap between rich and poor

Proposed definition:	The ratio of the income earned by high income earners to the income earned by low income earners (see page 22).
Rationale:	Income inequality as well as income per se have been suggested as determinants of poor health. This indicator attempts to provide insight into the disparity in income between households in each area.
Desired outcome:	Small differences only between the incomes of the rich and those of the poor in all areas.
Numerator:	Not applicable.
Denominator:	Not applicable.
Calculation method:	Sort households in each area by equivalised 'after-tax' household income (see indicator 2.2.5, Household income). Weight for the number of people in each household. Determine the dollar value of equivalised after tax income for each decile. Divide the amount earned by the person at one decile by the amount earned by the person at another. The ratios describe how much more one group earns than the other group. P10 for example is the income earned by individuals who earn less than 90% of the individuals in the area, but are more affluent than 10% of individuals in the area. These deciles can also be expressed as a percentage of the Australian median after-tax household income.
Data source:	ABS Survey of Income and Housing Costs (SIHC).
Presentation:	MC IR OR & Total Ratios: <ul style="list-style-type: none">• P90:P10• P80:P20• P80:P50• P20:P50 P90 and P10 also to be compared to the Australian median. Time series (currently 1996 and 1999–2000).
Data coverage:	National, every 2 or 3 years.

Data issues: Data for the ABS Survey of Income and Housing Costs only available from 1994–95 onwards.

The SIHC does not collect information in most of the remote areas. There would be very little information that could be provided with any accuracy for the remote areas, since they only account for a small part of the population, therefore any analysis would be largely confined to ‘major city’, ‘inner regional’ and ‘other’ areas. Reliable estimates of change over time can only be provided since 1996 (i.e. limited time series).

Reporting against Indigenous and non-Indigenous is not possible from the SIHC.

Related indicators: Household income (2.2.5).

Consultation with: Jenny Harber, Leon Pietsch (Living Conditions Section, ABS).

2.2.7 Sources of income

Proposed definition:	The percentage of people reliant on each sector for their main source of income (see page 22).						
Rationale:	From this indicator it is possible to gauge the importance of a number of different sectors to the livelihoods of people in rural, regional and remote areas.						
Desired outcome:	Less reliance on social security and greater reliance on public and private sector employment and on small business.						
Numerator:	The number of adults whose main source of income is in each sector in each area.						
Denominator:	The number of adults in each area.						
Calculation method:	The statistic is expressed as a simple proportion.						
Data source:	ABS Census.						
Presentation:	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center;">MC</td> <td style="text-align: center;">IR</td> <td style="text-align: center;">OR</td> <td style="text-align: center;">R</td> <td style="text-align: center;">VR</td> <td style="text-align: center;">Total</td> </tr> </table> <p>The percentage and number of the adult population (15+) whose main source of income is in each of the following economic sectors:</p> <ul style="list-style-type: none"> • agriculture, forestry and fishing; • mining; • manufacturing; • electricity, gas and water supply; • construction; • wholesale trade; • retail trade; • accommodation, cafes and restaurants; • transport and storage; • communication services; • finance and insurance; • property and business services; • government administration and defence; • education; • health and community services; • cultural and recreational services; • personal and other services; • non-classifiable economic units; • unemployed; • not in the labour force. <p>Time series (currently 1991, 1996 and 2001 available).</p>	MC	IR	OR	R	VR	Total
MC	IR	OR	R	VR	Total		
Data coverage:	National and 5-yearly.						

Data issues: ABS Survey of Income and Housing Costs does not collect the wages, salaries and business income classified by industry (rather by salaries and wages, own incorporated business, investment returns and government benefits). SIHC data does not allow reporting for remote areas, and at this stage only over a limited time period. Also, it is not possible to derive after-tax income for two or more industries from that of a whole income (i.e. where an individual is reliant for income on more than one industry, it is not possible state what amount was derived from each).

Census data does not permit reporting of after-tax income, nor is it capable of allocating a dollar amount to income earned from each industry in which an individual works. It does, however, allow reporting over all geographic areas and over time.

The financial contribution of each sector can only be described using de-identified ATO Individual Income Tax Return data from the ABS when it is possible to differentiate between areas of different remoteness.

Related indicators: Business activity (2.3.11).

Consultation with: Claire Conroy (Rural and Regional Statistics National Centre, ABS).
Gill McPadden (Client Services, ABS).

2.2.8 SEIFA

Proposed definition:	<p>This indicator describes for each area, the percentage of the population who live in census collectors districts (CDs) which have a SEIFA quartile (i.e. lowest to highest quartiles).</p> <p>The mean SEIFA score for CDs in each area is inappropriate and will not be reported.</p> <p>The SEIFA index of disadvantage, of economic resources and of education and occupation, would be reported (see page 23).</p>																								
Rationale:	<p>SEIFA indexes are summary measures of socioeconomic wellbeing, which has strong links with health status.</p>																								
Desired outcome:	<p>Similar percentages of the population in each SEIFA quartile in each area.</p>																								
Numerator:	<p>Not applicable.</p>																								
Denominator:	<p>Not applicable.</p>																								
Calculation method:	<p>Rank CDs in each area by SEIFA score. Report the percentage of the population of each area that live in CDs for which the SEIFA score is in the lowest, 2nd, 3rd and highest national quartile.</p>																								
Data source:	<p>ABS Census.</p>																								
Presentation:	<table><thead><tr><th>MC</th><th>IR</th><th>OR</th><th>R</th><th>VR</th><th>Total</th></tr></thead><tbody><tr><td colspan="6">Percentage of the population who live in CDs with SEIFA scores in the lowest, 2nd, 3rd and highest quartile.</td></tr><tr><td colspan="6">For the index of:</td></tr><tr><td colspan="6"><ul style="list-style-type: none">• disadvantage;• economic resources and of education; and• occupation.</td></tr></tbody></table>	MC	IR	OR	R	VR	Total	Percentage of the population who live in CDs with SEIFA scores in the lowest, 2nd, 3rd and highest quartile.						For the index of:						<ul style="list-style-type: none">• disadvantage;• economic resources and of education; and• occupation.					
MC	IR	OR	R	VR	Total																				
Percentage of the population who live in CDs with SEIFA scores in the lowest, 2nd, 3rd and highest quartile.																									
For the index of:																									
<ul style="list-style-type: none">• disadvantage;• economic resources and of education; and• occupation.																									
Data coverage:	<p>National and 5-yearly after each Census.</p>																								
Data issues:	<p>1991 SEIFA is not reported because of concerns regarding comparability with SEIFA in 1996 and 2001.</p>																								
Related indicators:	<p>All socioeconomic indicators (2.2.1–2.2.7).</p>																								
Consultation with:	<p>Brendan Brady (Labour Force and Rural Health Unit, AIHW). Tenniel Guyer (Statistical Consulting, ABS).</p>																								

2.3 Community capacity dimension

2.3.1 Demography

Proposed definition:	Demographic characteristics of the population, including population size, growth rate, age and sex structure and proportion of the population who are Indigenous (see page 24).																										
Rationale:	It is important for policy development to be able to visualise the population in the rural/remote setting. Issues like population growth, ageing, changes in sex ratios and in the proportion who are Indigenous have implications for health status, policy and allocation of resources.																										
Desired outcome:	There is no desired outcome. This indicator is important for the interpretation of the others.																										
Numerator:	The population of males and females, population of people in each life-stage (0–14 years, 15–24 years, 25–44 years, 45–64 years, 65+ years), population and proportion of Indigenous persons for the most recent year of estimated resident population data for each area.																										
Denominator:	The number of years being compared (i.e. 5).																										
Calculation method:	For population growth: subtract the 1991 population from the 1996 population (for males and females in each area), divide by the 1991 population and then divide by 5. For other components of this indicator (relative sizes of populations, numbers in each life stage age group, percentage male and female, percentage Indigenous), presented statistics to be counts or simple percentages.																										
Data source:	AIHW population databases.																										
Presentation:	<table border="0" style="margin-left: 20px;"> <tr> <td>MC</td> <td>IR</td> <td>OR</td> <td>R</td> <td>VR</td> <td>Total</td> </tr> </table> <p>Population. Percentage of the Australian population. Number of Indigenous persons. Indigenous persons as percentage of the population in each area. Indigenous persons in each area as percentage of the Australian Indigenous population.</p> <table border="0" style="margin-left: 20px;"> <tr> <td>Males</td> <td>0–14</td> </tr> <tr> <td></td> <td>15–24</td> </tr> <tr> <td></td> <td>25–44</td> </tr> <tr> <td></td> <td>45–64</td> </tr> <tr> <td></td> <td>65 +</td> </tr> <tr> <td>Females</td> <td>0–14</td> </tr> <tr> <td></td> <td>15–24</td> </tr> <tr> <td></td> <td>25–44</td> </tr> <tr> <td></td> <td>45–64</td> </tr> <tr> <td></td> <td>65 +</td> </tr> </table> <p>Population growth (number and percentage change).</p>	MC	IR	OR	R	VR	Total	Males	0–14		15–24		25–44		45–64		65 +	Females	0–14		15–24		25–44		45–64		65 +
MC	IR	OR	R	VR	Total																						
Males	0–14																										
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	65 +																										
Females	0–14																										
	15–24																										
	25–44																										
	45–64																										
	65 +																										

Data coverage: 5-yearly and national.

Data issues: Substantial differences in the number of people identifying as Indigenous prevents description of the change in the Indigenous and non-Indigenous populations. Description of changes in the population living in remote and very remote areas may be unreliable because of assumptions made in the allocation of remoteness category to population data.

Related indicators: Dependency ratio (2.3.2).

Consultation with: Phil Trickett (Health Registers and Cancer Monitoring Unit, AIHW).
Frank Blanchfield (Geography Section, ABS).

2.3.2 Dependency ratio

Proposed definition:	The ratio of people older than 65 years and of people 14 years or younger to people of working age (15–64 years). See page 24.
Rationale:	High levels of dependence require higher levels of support.
Desired outcome:	Similar and low levels of apparent dependence in each area.
Numerator:	The number of people 0–14 and 65+ in each area.
Denominator:	The number of people 15–64 in each area.
Calculation method:	Divide the numerator by the denominator.
Data source:	AIHW population databases.
Presentation:	MC IR OR R VR Total The ratio.
Data coverage:	5-yearly and national.
Data issues:	The dependency ratio is synthetic. There is no guarantee that the people of working age are working; however, they are a source of support and care for people of dependent age.
Related indicators:	Demography (2.3.1).
Consultation with:	Joy Eshpeter (National Population Health Planning Branch, DoHA).

2.3.3 Internal migration

Proposed definition:	The number and proportion of the population in each age group migrating, and the direction of that migration expressed as the proportion of those responding to the Census lived in a different geographic area 12 months previously. The area in which they live now, and for those who had moved, the area in which they lived 12 months previously (see page 24).						
Rationale:	It is unconfirmed, but appears likely that older people or people with poor health tend to move from more remote areas to less remote areas, probably to access health or other facilities. An understanding of the migration of people living in these areas is essential for a valid interpretation of other indicators.						
Desired outcome:	There is no preferred outcome. The indicator has value in assisting interpretation of other indicators.						
Numerator:	The number who moved in the year prior to the Census.						
Denominator:	The number living in each area at the Census.						
Calculation method:	<p>Generate a five by five table, showing the numbers of people resident in each area, where they lived 12 months previously and where they lived at the time of the census.</p> <p>From the table, calculate the proportion from each area who subsequently move to another area in the year.</p> <p>Repeat for each age group (15-24, 25-44, 45-64, 65-74 and 75+). Indigenous, non-Indigenous and the total population.</p>						
Data source:	ABS Census.						
Presentation:	<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left; padding-right: 10px;">MC</td> <td style="text-align: left; padding-right: 10px;">IR</td> <td style="text-align: left; padding-right: 10px;">OR</td> <td style="text-align: left; padding-right: 10px;">R</td> <td style="text-align: left; padding-right: 10px;">VR</td> <td style="text-align: left;">Total</td> </tr> </table> <p>For each area, by age group:</p> <ul style="list-style-type: none"> • the percentage of the population in an area, who move to or from more remote areas; • the percentage of the population in an area, who move to or from less remote areas; and • the net change in the population in each area as a result of internal migration. <p>Indigenous, non-Indigenous and total population.</p>	MC	IR	OR	R	VR	Total
MC	IR	OR	R	VR	Total		
Data coverage:	National, 5-yearly after the Census.						
Data issues:	<p>An issue which this indicator does not address is the work-related seasonal movement of people (e.g. the movement of seasonal farm workers, opal miners, holiday makers, etc.) to rural and remote areas. An influx of people into these areas can put pressure on health systems designed to cater for fewer people locally.</p> <p>Comparison of location of residence one year previously has been used, rather than at last year's Census, because of the lower opportunity for deaths to invalidate the comparison.</p>						

Related indicators: Demography (2.3.1).

Consultation with: Michael Roden (Demography Section, ABS).

2.3.4 Fertility

Proposed definition:	Birth rates for females overall and in each age group (see page 24).																																										
Rationale:	Fertility impacts on health services and on poverty. Teenage fertility can impact adversely on life opportunities, while risks surrounding birth are greater for very young and old mothers. An understanding of how remoteness affects fertility for both Indigenous and non-Indigenous women and for different age groups would be useful.																																										
Desired outcome:	Low rates of teenage fertility and of births to older women.																																										
Numerator:	The number of births in a calendar year for females in each age group and for all ages in each area.																																										
Denominator:	The number of females in each 5-year age group.																																										
Calculation method:	<p>Divide numerator by denominator and multiply by 1,000 for each age group. Rates for all women indirectly age-standardised using national age-specific birthrates for women nationally.</p> <p>Teenage fertility rate is the number of live births to mothers aged less than 20 years in a given year per 1,000 females aged 15–19 years.</p>																																										
Data source:	ABS Birth Registration data, AIHW 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><tbody><tr><td colspan="6">Number of babies.</td></tr><tr><td colspan="6">Birthrate (births per 1000 women per year):</td></tr><tr><td colspan="6"><ul style="list-style-type: none">• less than 20 years;• 20–29 years;• 30–39 years; and• 40 years and over.</td></tr><tr><td colspan="6">Overall fertility (age-standardised).</td></tr><tr><td colspan="6">Indigenous, non-Indigenous and total population (as the data allows).</td></tr><tr><td colspan="6">Time trend for the total population.</td></tr></tbody></table>	MC	IR	OR	R	VR	Total	Number of babies.						Birthrate (births per 1000 women per year):						<ul style="list-style-type: none">• less than 20 years;• 20–29 years;• 30–39 years; and• 40 years and over.						Overall fertility (age-standardised).						Indigenous, non-Indigenous and total population (as the data allows).						Time trend for the total population.					
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Time trend for the total population.																																											
Data coverage:	Annual, national.																																										
Data issues:	Quality of the Indigenous identifier is poor. Changes in the likelihood of identifying as Indigenous over time prevent valid reporting of time trends for both Indigenous and non-Indigenous people.																																										
Related indicators:	Demography (2.3.1), Birth outcomes (1.1.6), Perinatal mortality (1.4.2).																																										
Consultation with:	Elizabeth Sullivan (National Perinatal Statistics Unit (NPSU)).																																										

2.3.5 Community safety

Proposed definition:	Mortality due to interpersonal violence and mortality of children under 5 years due to interpersonal violence (see page 25).
Rationale:	Homicide, including the death of young children is an extreme indicator of community safety and function. As well as mortality, higher levels of violence also generate fear and reduce opportunities for social interaction, significantly reducing the quality of life.
Desired outcome:	Low and similar levels of homicide in each area, diminishing over time.
Numerator:	Number of deaths of people and, as a subset, of 0–4 year old children in each area classified as non-accidental injury and neglect (ICD9 codes E960–E969; ICD10 T74 (maltreatment codes). This excludes late effects.
Denominator:	The number of people by 5-year age group and number of children aged 0–4 in each area.
Calculation method:	Indirect age standardisation using national age-specific homicide death rates. Comparison across time requires standardisation to a single period (e.g. for the period 1997–1999). Deaths of children expressed as crude rates.
Data source:	AIHW Mortality and Population Databases.
Presentation:	MC IR OR R VR Total Number of deaths. Deaths per 100,000 population. Male and female adults. Children. Time trend for total population of males and females. Indigenous, non-Indigenous and total population (as the data allows).
Data coverage:	National and yearly.
Data issues:	This indicator is a measure of an extreme outcome that is likely to be correlated to overall levels of violence and abuse within each community. Where violence, child abuse or neglect does not end in death, alternative data sources could include courts or police data. National Child Protection data (which might otherwise provide a good overview of child physical abuse) suffers from a number of problems. These include different case definitions in each State, the geographic identifier is not available in the national data set, notification to the system has a different probability in more remote areas and the identification of Indigenous children is affected by a range of issues which are likely to invalidate comparison. Small numbers of deaths may make comparison between some

areas difficult.

Rate of hospital separation due to neglect and injury due to interpersonal violence has been considered as an alternative or supporting indicator. Different admission policies may, however, affect the validity of this (hospital) indicator. Use of 'place of occurrence' field could allow reporting for interpersonal violence at home and interpersonal violence in the community. However, information on place of occurrence is available only for a proportion of records.

Related indicators:

Alcohol (2.4.2), Illicit drugs (2.4.3).

Consultation with:

Helen Moyle, Helen Johnston, Fadwa Al Yaman (Children Youth and Families Unit, AIHW).

2.3.6 Perception of risk

Proposed definition:	The percentage of the population who self-report engaging in risky behaviour while intoxicated with alcohol or an illicit drug (see page 26).
Rationale:	The perception of risk influences behaviour, which can influence the risk of accident or of chronic disease. Understanding of differences in the perception of risk (or the tendency to take risks) could be useful in addressing rates of accident or chronic disease in non-metropolitan areas.
Desired outcome:	Similar and low levels of risk taking behaviour in all areas.
Numerator:	While intoxicated with alcohol or an illicit drug, the number who self-reported working, swimming, boating, driving or operating hazardous machinery (personally risky), and the number who self-reported creating a public disturbance, damaging property, stealing or verbally or physically abusing someone (socially risky) in the past 12 months.
Denominator:	All respondents to the AIHW National Drug Household Survey.
Calculation method:	Indirect age-standardised percentage using national age-specific rates as the standard.
Data source:	AIHW National Drug Strategy Household Survey.
Presentation:	MC IR OR R/VR Total For males and females. Percentage reporting behaviour that was: <ul style="list-style-type: none">• personally risky; and• socially risky.
Data coverage:	National, every 3 years.
Data issues:	This survey has a relatively small sample size (10,030 in 1998, but 26,744 in 2001). CATI methodology in 2001 may reduce the opportunity for poorer people in more remote areas to respond. Prior to 2001, methodology significantly reduced the opportunity for many remote populations to participate. There may be a need to aggregate responses from the two most remote areas due to small sample sizes. The sample will not support separate Indigenous analysis.
Related indicators:	Prevalence of chronic disease and injury (1.1.1 and 1.1.2).
Consultation with:	Mark Cooper-Stanbury (Population Health Data and Information Services Unit, AIHW).

2.3.7 Housing tenure

Proposed definition:	The proportion of households that are: a) rented; b) being purchased; or c) owned (see page 27).
Rationale:	Home ownership provides families with a greater sense of control over their own lives and a greater sense of permanency. Renting can be a practical and economic alternative to purchasing.
Desired outcome:	Similar percentage of households renting in each area.
Numerator:	Number of households in each tenure category (those still purchasing, those who own outright and those who rent) in each area.
Denominator:	The total number of households in each area.
Calculation method:	Percentage-standardised by the age of the reference person in each dwelling using national age-specific percentages as the standard. Crude percentage to also be calculated. The standardised percentage seeks to describe the probability of renting, owning, etc. The crude percentage describes the actual percentage who are renting, owning, etc.
Data source:	ABS Census.
Presentation:	MC IR OR R VR Total Crude and age-standardised proportion of: <ul style="list-style-type: none">• households renting;• households purchasing dwelling; and• households that own dwelling. Time trend using data from each Census. Indigenous, non-Indigenous and total population. Graph: Data would be presented in a stacked column chart for each area.
Data coverage:	National and every 5 years after the ABS Census.
Data issues:	Age standardisation is necessary to compare the probability of renting between areas because the age structures of the populations are different and younger people are more likely to rent and less likely to own their dwelling.
Related indicators:	Overcrowding in households (2.3.8).
Consultation with:	Anne Marie Waters (Cardiovascular Disease, Diabetes and Risk Factor Monitoring Unit, AIHW). Leon Pietsch (Living Conditions Section, ABS). Gill McPadden (Client Services, ABS). Tenniel Guyer (Statistical Consulting, ABS).

2.3.8 Overcrowding in households

Proposed definition:	The percentage of households that are overcrowded (Canadian National Occupancy Standard), based on number of bedrooms, household size and composition (see page 27).
Rationale:	There is evidence to suggest that overcrowded dwellings are associated with a greater risk of communicable diseases, accidents and poorer mental health. It is expected that overcrowding may occur in more remote areas due to larger families and cultural practices of Indigenous people.
Desired outcome:	A low and similar level of crowding in each area.
Numerator:	The total number of bedrooms in the dwelling.
Denominator:	The number of bedrooms required (using the Canadian National Occupancy Standard).
Calculation method:	<p>The number of bedrooms required = ceiling of ((1*single adults) + (1*adult couples) + (children under 5/2) + (boys 5-17/2) + (girls 5-17/2)).</p> <p>If the number of bedrooms is less than the number required, then the dwelling is crowded.</p>
Data source:	ABS Census.
Presentation:	<p>MC IR OR R VR Total</p> <p>The percentage of households crowded, just right and under utilised.</p> <p>Indigenous, non-Indigenous and total population.</p> <p>Time trend.</p>
Data coverage:	National, every 5 years after the Census.
Data issues:	<p>A complex relationship which may be influenced by time actually spent in the home, cultural differences and the condition of housing.</p> <p>While data is presented using one single model across Australia, it can be argued that some groups may have different requirements or may use dwellings differently.</p>
Related indicators:	Housing tenure (2.3.7), Household income (2.2.5).
Consultation with:	Anne Marie Waters (Cardiovascular Disease, Diabetes and Risk Factor Monitoring Unit, AIHW). Anne Jenkins (Ageing and Aged Care Unit, AIHW).

2.3.9 Transport

Proposed definition:	The average number of registered motor vehicles per adult in each household (see page 28).
Rationale:	Large distances to services and little or no public transport make access to car transport important for accessing services, day-to-day living and for empowerment. People living in rural and remote areas who do not have access to a car are particularly disadvantaged. People without access to a car in metropolitan areas are likely to be far less disadvantaged.
Desired outcome:	High and similar ratios of cars to adults in each household, in each area.
Numerator:	The number of registered motor vehicles garaged at each household, in each area.
Denominator:	The number of adults aged 20 years and over who live in each household, in each area.
Calculation method:	Divide the numerator by the denominator. The indicator statistic is the mean, median, 25th and 75th percentile of the quotient.
Data source:	ABS Census.
Presentation:	MC IR OR R VR Total Number of cars per household. Household car to adult (20+ years) ratio. Mean, median, 25th and 75th percentiles of the ratio reported. For Indigenous, non-Indigenous and total households.
Data coverage:	National and 5-yearly after the ABS Census.
Data issues:	People living in metropolitan areas may have less need for cars, as these areas are better serviced by public transport. This indicator does not address road quality or the number of kilometres travelled each year by residents of each area.
Related indicators:	Workforce and employment (2.2.4), Distance to medical services (3.5.1).
Consultation with:	Gill McPadden, Dean Turner (Client Services, ABS). Brendan Brady (Labour Force and Rural Health Unit, AIHW).

2.3.10 Cost of living

Proposed definition:	In lieu of an overall cost of living statistic, prices of three fundamental groups of commodities are compared across areas: housing, food and petrol (see page 28).
Rationale:	It is not possible to report on consumer price index (CPI) or similar but appropriate summary measures comparing cost of living between areas. Comparison of the cost of food, petrol and housing provides some indication of the day-to-day cost of living experienced by rural populations. This indicator is recommended because poverty or affluence is at least as influenced by cost of living as by income.
Desired outcome:	Low and similar costs for these three commodities in each area.
Numerator:	Not applicable.
Denominator:	Not applicable.
Calculation method:	The price of petrol and index of food prices to be reported as they are. Mean cost of rent and mortgage to be standardised on the basis of the number of bedrooms in the dwelling.
Data source:	Mortgages and rental: ABS Census. Food prices: ABS Indexes of relative retail prices of food, Australian cities and towns 1984–1990 (discontinued survey), as well as specific ‘one-off’ State surveys. Petrol prices: Informed Sources P/L.
Presentation:	MC IR OR R VR Total Report the mean, median, 25th and 75th percentiles of mortgages and rents. Where details of price are not available for all locations (food and petrol), cost to be (scatter) plotted against continuous ARIA score for SLAs.
Data coverage:	Costs of housing are available nationally and every five years. Cost of petrol is available nationally and several times yearly. Cost of food is available for some States only, and irregularly.
Data issues:	Data availability is restricted. Petrol prices are available for each location for the previous month or over the past years. Housing prices and rents are available for all areas. Food prices (or rather indices) are available for 1984–1990, and also periodically for some States. Housing costs, and food and petrol prices reflect a proportion of the cost of living. There is no national ability to compare cost of living in metropolitan and other parts of Australia. Region-specific factors influencing people’s demands for these items (e.g. the need to drive greater distances and consume more petrol) need to be considered in interpreting this indicator. Comparison with the indicator of income in this framework (which has been equivalised) is valid.

Related indicators: Household income (2.2.5).
Consultation with: Petrol: Informed Sources P/L; Alan Price.
Housing: Leon Pietsch (Living Conditions Section, ABS).
Food: Steve Whennan (Consumer Price Index Section, ABS).

2.3.11 Business activity

Proposed definition:	The economic health of a region measured by business growth or decline (see page 29).
Rationale:	The opportunity for deriving a livelihood through paid employment, with its inherent health benefits, depends on the health of the business sector and opportunities for employment in the public sector. A buoyant economy is likely to encourage a healthy population.
Desired outcome:	Similar or increasing numbers of businesses (as expressed by counts of ABNs) in each area from year to year. Similar or increasing counts of small regional businesses, operating income and profit in each area from year to year.
Numerator:	Counts of single location ABNs registered for GST. Counts of regional small businesses, operating income, operating expenses, and profit.
Denominator:	Counts of regional small businesses.
Calculation method:	The statistic reports counts, simple means and medians, and the change in these from year to year.
Data source:	ABS ATO Australian Business Register (ABR). ABS ATO Business Income data (BID).
Presentation:	MC IR OR R VR Total Number of ABNs registered for GST. Number of regional small businesses. Mean and median: <ul style="list-style-type: none">• operating income;• operating expense; and• profit. For each year data exists.
Data coverage:	National, annual. ABR since October 2000, BID since 1995/1996.
Data issues:	Confidentiality and development issues currently prevent reporting by geographic areas smaller than State (for ABR), while for BID, Statistical Division is the smallest area against which it is possible to report. Small business is defined as those businesses whose total income or expenses were between \$10,000 and \$5m in a financial year. These data do not describe large or multi-locational businesses.
Related indicators:	Workforce and employment (2.2.4), Sources of income (2.2.7).
Consultation with:	Claire Conroy (Rural and Regional Statistics National Centre, ABS).

2.4 Health behaviours dimension

2.4.1 Tobacco

Proposed definition: The percentage of persons living in each area who are regular smokers, light regular smokers, occasional smokers, ex-smokers and who have never smoked (see page 30).

Rationale: Estimates the prevalence of smoking in adults. Smoking is a major risk factor for several important causes of morbidity, notably circulatory diseases, cancers and respiratory diseases.

Desired outcome: Prevalence of smoking low and similar in all areas, decreasing over time.

Numerator: From the National Drug Strategy Household Survey; the number of males and females in each area, in each age group (14 years and older) who:

- Are regular smokers (at least one cigarette, cigar or pipe per day);
- are regular smokers (at least once weekly);
- are occasional smokers (less often than weekly);
- are ex-smokers having smoked 100 or more cigarettes in life;
- have never smoked (including smoked less than 100).

From the ABS National Health Survey; the number of males and females in each area, in each age group (18 years and older) who:

- are regular smokers;
- are occasional smokers;
- are ex-smokers (100 or more in life);
- have never smoked.

Denominator: Number of males and females in each age group in each area 14 years and older in the National Drug Strategy Household Survey, and 18 years and older in the National Health Survey.

Calculation method: Calculate age-standardised proportions for males and females who are regular smokers, occasional smokers, ex-smokers having smoked 100 or more cigarettes in life, never smoked. Comparison across time will require proportions to be standardised to those from a single year (e.g. 1995 NHS).

Data source: National Drug Strategy Household Survey (currently 1998, 2001 available). Small sample size in 1995 prevents reporting by remoteness.

The ABS National Health Survey (currently 1989-90, 1995 and 2001 available).

Presentation: MC IR OR R/VR Total

For the National Drug Strategy Household Survey, the age-standardised percentage of males and females who:

- are regular smokers (at least daily);
- are regular smokers (at least once weekly);

- are occasional smokers (less often than weekly);
- are ex-smokers; and
- never smoked (including smoked less than 100).

Or crude percentage for each age group 14–24, 25–44, 45–64, 65+.

There may be a need to aggregate some categories where sensible.

For the ABS National Health Survey, the

age-standardised percentage of males and females 18+ who:

- are regular smokers;
- are occasional smokers;
- are ex-smokers (100 or more in life); and
- never smoked.

Or crude percentage for each age group 18–24, 25–44, 45–64, 65+.

For Indigenous, non-Indigenous and total population (as the data allows).

Data coverage:

Every 3 years (NDSHS) or 5 years (NHS), national.

Data issues:

The National Drug Strategy Household Survey has a relatively small sample size (10,030 in 1998, but 26,744 in 2001). CATI methodology in 2001 may reduce the opportunity for poorer people in more remote areas to respond. Prior to 2001, methodology significantly reduced the opportunity for many remote populations to participate. There may be a need to aggregate the remote areas due to small sample sizes.

The NDSHS will not support separate Indigenous statistics.

Other issues include those previously mentioned for indicators from national surveys.

The ABS National Health Survey has a larger sample size, greater history (thereby time series is possible). 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 63.

Results from the two surveys will not be identical, but should show similar trends.

Information about smoking rates of children which can be described by geographic area are not available nationally.

Related indicators:

Chronic diseases (1.1.1), Leading causes of death and excess deaths (1.4.5), SEIFA (2.2.8).

Consultation with:

Mark Cooper-Stanbury (Population Health Data and Information Services Unit, AIHW).

Tim Carlton and Paul Atyeo (Health Section, ABS).

2.4.2 Alcohol

Proposed definition:	The prevalence of alcohol consumption capable of resulting in harm in the short and long-term as defined by the NHMRC Australian alcohol guidelines 2001. These supersede the previous guidelines (more than 4 glasses for males and 2 glasses for females per day being hazardous, greater quantities daily classified as harmful). See page 30.
Rationale:	Moderate alcohol intake is not harmful and may be associated with some health benefits. Higher levels of intake (hazardous and harmful alcohol consumption) is a risk factor for a number of diseases/conditions, both for the individual and for others.
Desired outcome:	Low and similar levels of short- and long-term hazardous or harmful alcohol consumption in each area.
Numerator:	Number of males and females in each area, in each age group who have: <ul style="list-style-type: none">• alcohol consumption with potential for short- or long-term harm (new NHMRC definition); and• hazardous or harmful alcohol consumption (old NHMRC definition).
Denominator:	The total number of male and female respondents in the survey from each area and age group.
Calculation method:	Proportions for age groups are simple proportions. Proportion of the total population is age-standardised, using national proportions for each age group as the standard. Comparison between years will require standardisation to national age-specific proportions for one year only (e.g. 1995).
Data source:	AIHW National Drug Strategy Household Survey (currently 1998 and 2001 available). Small sample size in 1995 prevents reporting by remoteness. ABS National Health Survey (currently 1989–90, 1995 and 2001 available).

Presentation:	<p>MC IR OR R/VR Total</p> <p>From the AIHW National Drug Strategy Household Survey: Age-standardised percentage of males and females who drink alcohol in such a way as to risk:</p> <ul style="list-style-type: none"> • harm in the short term; and • harm in the long term. <p>The crude percentage who risk harm in the short and long term for the following age groups:</p> <ul style="list-style-type: none"> • 14–19 years • 20–29 years • 30–39 years • 40+years. <p>From the ABS National Health Survey: Age-standardised percentage of males and females who have: hazardous or harmful alcohol consumption; the crude percentage of those who have hazardous or harmful alcohol consumption in the following age groups:</p> <ul style="list-style-type: none"> • 18–29 yrs • 30–39 yrs • 40+ yrs. <p>For Indigenous, non-Indigenous and total population (as the data allows).</p> <p>Time series (currently 1989–90, 1995 and 2001 available).</p>
Data coverage:	National and 3-yearly.
Data issues:	<p>Issues are the same as for the Tobacco indicator (2.4.1).</p> <p>Definition of hazardous and harmful alcohol consumption has been modified recently. Definition of harmful and hazardous alcohol consumption will follow the recent NHMRC Australian alcohol guidelines 2001 instead of the previous definition. This is possible only for the AIHW data. The NHS data can only be defined in terms of the older definition (and will be reported as such).</p>
Related indicators:	Illicit drug use (2.4.3), and Tobacco consumption (2.4.1).
Consultation with:	<p>Mark Cooper-Stanbury (Population Health Data and Information Services Unit, AIHW).</p> <p>Tim Carlton (Health Section, ABS).</p>

2.4.3 Illicit drugs

Proposed definition:	The proportion of people who had recently used an illicit drug (all illicit drugs, cannabis and all illicit drugs other than cannabis). See page 31.
Rationale:	Illicit drug use can constitute a significant health risk and can feed property and personal crime rates (reducing opportunities for others). Statistics for all three groups of drugs will be presented because some people use both cannabis and other illicit drugs.
Desired outcome:	Low and similar levels of illicit drug use in each area.
Numerator:	The number of respondents who had recently used an illicit drug (including cannabis) and the number who had recently used cannabis.
Denominator:	The total number of respondents in the survey.
Calculation method:	Indirect age-standardised proportions using national age-specific proportions as the standard.
Data source:	AIHW National Drug Household Survey, 1998 and 2001. Small sample size in 1995 prevents reporting by remoteness.
Presentation:	MC IR OR R/VR Total Age-standardised percentage of males and females who had recently used: <ul style="list-style-type: none">• cannabis;• another illicit drug;• any illicit drug (including cannabis).
Data coverage:	National and 3-yearly.
Data issues:	Issues are the same as for indicator 2.4.1 (re the NDSHS). Details of illicit drug use are not collected in the National Health Survey. Self-reporting may result in under-reporting of rates.
Related indicators:	Alcohol (2.4.2), and Tobacco (2.4.1).
Consultation with:	Mark Cooper-Stanbury (Population Health Data and Information Services Unit, AIHW).

2.4.4 Physical activity and inactivity

Proposed definition:	<p>The percentage of persons aged 18+ years doing some physical activity and the percentage doing no physical activity.</p> <p>The percentage of persons aged 18+ years doing sufficient levels of exercise and the percentage not doing sufficient levels of exercise. See page 31.</p>
Rationale:	Physical inactivity is the second largest contributor to burden of disease in Australia (AIHW: Mathers et al. 1999).
Desired outcome:	Low and similar levels of physical inactivity in all areas, decreasing over time.
Numerator:	<p>From the AIHW Physical Activity Survey:</p> <p>the number of people in each area aged 18 years and over who have done some physical activity and the number who have been sedentary in the previous week; and</p> <p>the number of people in each area aged 18 years and over who have done 'sufficient levels of physical activity' and the number that have done insufficient levels of exercise in the previous week.</p> <p>From the ABS National Health Survey:</p> <p>the number who have done sufficient leisure time physical activity in the previous fortnight. Sufficient activity is defined as at least 30 minutes of moderate-intensity physical activity on most, preferably all, days.</p>
Denominator:	Number of people in each area who responded to each survey.
Calculation method:	Indirect age-standardised proportion using national age-specific proportions as the standard.
Data source:	AIHW Physical Activity Survey 1998 and the ABS National Health Survey (1989-90, 1995 and 2001 currently available).
Presentation:	<p>MC IR OR R/VR Total</p> <p>From the Physical Activity Survey, the percentage of people 18 years and over:</p> <ul style="list-style-type: none">• doing some physical activity and doing no physical activity; and• doing sufficient levels of exercise and not doing sufficient levels of exercise. <p>From the National Health Survey, the percentage of people 18 years and over doing sufficient leisure time physical activity, in each year for which data is available.</p> <p>For Indigenous, non-Indigenous and total population (as the data allows).</p>
Data coverage:	National; 5-yearly for the National Health Survey, one-off for the Physical Activity Survey.

Data issues:	<p>The 'physical activity' definition used in the 1998 Physical Activity Survey is more recent and appropriate than the definition used in the 1995 National Health Survey. However, the Physical Activity Survey was conducted by phone and has limited representation of rural and remote areas. The ideal data source would be the NHS with redevelopment of the physical activity question.</p> <p>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 63.</p>
Related indicators:	The prevalence of chronic disease (1.1.1), Leading causes of death (1.4.5), Community safety (2.3.5).
Consultation with:	<p>Tim Armstrong (Cardiovascular Disease, Diabetes and Risk Factor Monitoring Unit, AIHW).</p> <p>Tim Carlton (Health Section, ABS).</p>

2.4.5 Nutrition

Proposed definition:	Estimated dietary energy intake, and intake of saturated fat, fresh fruit and vegetables, and dietary fibre (see page 31).
Rationale:	<p>Energy is provided from particular food groups and aids in growth, movement, metabolism and physical activity. Intake of too little or too much energy has adverse health consequences.</p> <p>A high intake of saturated fats can contribute to high serum cholesterol levels, obesity and increased risk of cardiovascular disease.</p> <p>A high intake of fresh fruit and vegetables provides a wide range of general dietary needs. Fresh fruit and vegetable consumption can reduce risks to cardiovascular disease and cancer and is essential to general health and wellbeing.</p> <p>Some components of fibre assist in lowering blood cholesterol, maintaining blood glucose levels and providing protection against intestinal problems.</p>
Desired outcome:	Energy intake similar in all areas. Similar levels of low saturated fat and high dietary fibre intake in each area. High and similar percentages of people eating sufficient quantities of fresh fruit and vegetables. All aspects of diet improving over time.
Numerator:	<p>Energy, saturated fat, and dietary fibre intake for males and females in each age group in each area.</p> <p>The number of males and females in each age group with different levels of fresh fruit and vegetable intake in each area.</p>
Denominator:	Number of males and females in each age group in each area in the 1989-90, 1995 and 2001 National Nutrition Survey.
Calculation method:	Indirect age-standardised means, median and proportions using national age-specific values as the standard. Comparison between years requires standardisation to a single year (e.g. 1995).
Data source:	ABS National Nutrition Survey (currently 1989-90, 1995 and 2001 available).
Presentation:	<p>MC IR OR R/VR Total</p> <p>The mean, median, 25th and 75th percentiles of:</p> <ul style="list-style-type: none">• dietary energy intake;• saturated fat intake; and• dietary fibre intake. <p>The percentage of males and females with fresh fruit and vegetable intake in each of five categories (little to lots).</p> <p>For males and females.</p>
Data coverage:	National and 5-yearly.

Data issues:	<p>This survey has a relatively small sample size (13,858 of which 8,339 are in capital cities). In the Northern Territory only one remote area was sampled. Data for remote and very remote areas will likely need to be aggregated because of small numbers.</p> <p>The sample will not support separate Indigenous or non-Indigenous statistics.</p> <p>It is common to most dietary surveys that due to their '24 hour recall' methodology, on average people under-report their consumption of food and beverages.</p> <p>Other issues include those previously mentioned for indicators from national surveys.</p> <p>Refined sugar intake would be useful, but it is not possible to differentiate between refined and unrefined sugars.</p> <p>If differences between males and females are not substantial, reporting for 'people' could increase power in the smaller areas.</p>
Related indicators:	Prevalence of chronic diseases (1.1.1), Leading causes of death (1.4.5), Cost of living (2.3.10), Overweight/obesity (2.5.3), SEIFA (2.2.8).
Consultation with:	Bonnie Field (Cardiovascular Disease, Diabetes and Risk Factor Monitoring Unit, AIHW). Tim Carlton, Paul Atyeo (Health Section, ABS).

2.4.6 Sexual practices

Proposed definition:	The age-standardised percentage of males and females who self-report non-safe sexual practices in each area (see page 32).
Rationale:	Notification of sexually transmitted infections can be high in some rural/remote communities, the health and social impact can be substantial and there is the opportunity for public health action based on understanding to improve the situation.
Desired outcome:	Low and similar rates of non-safe sexual practice in all areas, decreasing over time.
Numerator:	Numbers of individuals self-reporting non-safe sexual practices in the Australian Study of Health and Relationships.
Denominator:	The number of responses to the Australian Study of Health and Relationships.
Calculation method:	Indirect age-standardised proportion.
Data source:	Australian Study of Health and Relationships, La Trobe University, 2002.
Presentation:	MC IR OR R/VR Total Percentage of males and females who self-report non-safe sexual practices (age-standardised). There is an option to report for Indigenous and non-Indigenous populations.
Data coverage:	Data is national, but is likely to be a one-off study.
Data issues:	The survey is CATI; consequently coverage of poorer people especially in more remote areas may be low. Sample size is 19,307, with an augmented rural/remote sample.
Related indicators:	Communicable diseases (1.1.5).
Consultation with:	Dr Richard de Visser (Australian Research Centre in Sex, Health & Society, La Trobe University).

2.5 Person-related factors dimension

2.5.1 Genetically determined diseases

Proposed definition:	The number and rate of births with genetically determined diseases (including inherited genetic disease, somatic genetic disease (cancer), chromosomal aberrations (including specifically Down syndrome). See page 33.					
Rationale:	Antenatal testing provides parents with information that can be used to reduce the prevalence of genetically determined disease in the population. Knowledge of higher rates in some areas may initiate action to improve availability of antenatal testing, options or attitudes to termination of pregnancy or other actions to reduce incidence.					
Desired outcome:	Rates to be low and similar in each area, decreasing over time.					
Numerator:	The number of live and stillbirths with genetically determined diseases as specified.					
Denominator:	The total number of live and stillbirths.					
Calculation method:	Rates age-standardised to national rates by maternal age.					
Data source:	ABS births data and NPSU perinatal data					
Presentation:	<table border="0" style="width: 100%;"> <tr> <td style="text-align: left;">MC</td> <td style="text-align: left;">IR</td> <td style="text-align: left;">OR</td> <td style="text-align: left;">R/VR</td> <td style="text-align: left;">Total</td> </tr> </table> <p>Number and rate of babies born with genetically determined diseases (age-standardised by maternal age):</p> <ul style="list-style-type: none"> • inherited genetic diseases; • somatic genetic diseases; • chromosomal aberrations; • Down syndrome; and • all genetically determined diseases. <p>Also time series (either individual years or rolling averages).</p>	MC	IR	OR	R/VR	Total
MC	IR	OR	R/VR	Total		
Data coverage:	National and annual (although reporting may require the aggregation of several years' data).					
Data issues:	Numbers are likely to be too small to report also for Indigenous and non-Indigenous by area. Reporting for time series may require the use of rolling averages because of small numbers.					
Related indicators:	Specific birth defects (2.5.2).					
Consultation with:	Dr Elizabeth Sullivan, Dr Siva Sivarajasingam (National Perinatal Statistics Unit (NPSU)).					

2.5.2 Specific birth defects

Proposed definition:	The number and rate of births with specific birth defects caused by environmental factors (all and also neural tube defect). See page 34.
Rationale:	High rates can be preventable (for example, folic acid supplementation to reduce risk of spina bifida). Knowledge of higher rates in some areas may initiate action to reduce incidence.
Desired outcome:	Rates to be low and similar in all areas, decreasing over time.
Numerator:	The number of live and stillbirths with specific birth defects.
Denominator:	The total number of live and stillbirths.
Calculation method:	Numbers and rates, age-standardised to national rates by maternal age.
Data source:	ABS births data and NPSU Perinatal data.
Presentation:	MC IR OR R/VR Total Rate of babies born with specific birth defects caused by environmental factors (age-standardised by maternal age). <ul style="list-style-type: none">• All specific birth defects.• Neural tube defect. Also time series (either individual years or rolling averages).
Data coverage:	National and annual (although reporting may require the aggregation of several years data).
Data issues:	Numbers are likely to be too small to report also for Indigenous and non-Indigenous by area. Reporting for time series may require the use of rolling averages.
Related indicators:	Genetically determined diseases (2.5.1).
Consultation with:	Dr Elizabeth Sullivan, Dr Siva Sivarajasingam (National Perinatal Statistics Unit (NPSU)).

2.5.3 Overweight/obesity

Proposed definition:	Proportion of persons aged 18 years and over with a body mass index (BMI) in the overweight and obese ranges (see page 35).					
Rationale:	The indicator estimates the prevalence of overweight and obesity in adults and reflects the risk of premature mortality, diabetes, and circulatory disease.					
Desired outcome:	Low and similar rates of overweight and obesity in each area, decreasing over time.					
Numerator:	The number of males and females in the NNS who are: overweight (BMI 25 to 29 kg/m ²); and obese (BMI 30 kg/m ² or greater).					
Denominator:	Total number of males and females surveyed in the NNS for males and females in each area.					
Calculation method:	Indirect age-standardised using national age-specific proportions. Comparison between years requires standardisation to a single year (e.g. 1995). BMI = weight (kg)/height (metres) ² and then categorise as: <ul style="list-style-type: none"> • not overweight or obese (BMI less than 25); • overweight (BMI 25 to 29); or • obese (BMI 30 or greater). 					
Data source:	ABS National Nutrition Survey (currently 1989–90, 1995 and 2001 available).					
Presentation:	<table border="0" style="width: 100%;"> <tr> <td style="text-align: left;">MC</td> <td style="text-align: left;">IR</td> <td style="text-align: left;">OR</td> <td style="text-align: left;">R/VR</td> <td style="text-align: left;">Total</td> </tr> </table> <p>The percentage of males and females in each area who are:</p> <ul style="list-style-type: none"> • not overweight or obese; • overweight; • obese. <p>For Indigenous, non-Indigenous and total population (as the data allows).</p>	MC	IR	OR	R/VR	Total
MC	IR	OR	R/VR	Total		
Data coverage:	National and 5-yearly.					
Data issues:	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 63.					
Related indicators:	Nutrition (2.4.5), Physical activity and inactivity (2.4.4), Prevalence of chronic diseases (1.1.1).					
Consultation with:	Tim Carlton, Paul Atyeo (Health Section, ABS).					

Health system performance (Tier 3)

3.1 Effective dimension

3.1.1 Immunisation rates

Proposed definition:	Proportion of children who are fully immunised against vaccine preventable diseases according to NHMRC recommendations at the ages of 12–15 and 24–27 months as recorded in the Australian Childhood Immunisation Register (ACIR). See page 39.
Rationale:	Reflects the prevalence of full age-appropriate immunisation of children. Reflects access to and utilisation of immunisation services.
Desired outcome:	Similar high and increasing proportion fully immunised in all areas.
Numerator:	Number of children aged 12–15 and 24–27 months in each area who have received all the immunisations at the designated milestone times as per the Australian Childhood Immunisation Schedule.
Denominator:	Total number of children aged 12–15 and 24–27 months on the ACIR in each area.
Calculation method:	For each of the age groups, divide the numerator by the appropriate denominator then multiply by 100 for expression as a percentage.
Data source:	Australian Childhood Immunisation Register.
Presentation:	MC IR OR R VR Total Percentage fully immunised at: <ul style="list-style-type: none">• 12–15 months• 24–27 months.
Data coverage:	Annual, national.
Data issues:	The Indigenous indicator field is not compulsory for immunisers to complete and is likely to be unreliable. Consequently, reporting for Indigenous and non-Indigenous groups is not possible.
Related indicators:	Communicable diseases (pertussis (1.1.5)). Comparison with this indicator could be used to identify problems either with immunisation coverage or with management of the cold chain.
Consultation with:	Jennifer Mayhew-Larsen (Health Information Section, HIC).

3.1.2 Breast cancer and cervical screening participation rate

Proposed definition:	The percentage of women screened for breast cancer and by Pap smear in the past 2 years for the target age groups 50–69 years (breast cancer screening) and 20–69 years (pap smear). See page 39.
Rationale:	Breast cancer and cervical screening has the potential to provide early detection of breast cancers and cervical cellular change, with better health outcomes for affected women. Changes to policy have the opportunity to address lower participation rates where substantial differentials are apparent from area to area.
Desired outcome:	High participation rates for women in these age groups in all areas, decreasing over time.
Numerator:	The number of individual 50–69 and 20–69 year old women screened for breast cancer and by Pap smear in the past 2 years.
Denominator:	The number of women in the 50–69 and 20–69 year age group in each area.
Calculation method:	The summary statistic is calculated as the number of women screened divided by the population of women, expressed as a percentage.
Data source:	ABS National Health Survey and AIHW Population Databases.
Presentation:	MC IR OR R/VR Total Percentage of: <ul style="list-style-type: none">• 50–69 year old women screened for breast cancer; and• 20–69 year old women having Pap smear.
Data coverage:	5-yearly and national.
Data issues:	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 63.
Related indicators:	Leading causes of death (1.4.5) (breast and cervical cancer mortality).
Consultation with:	Mieke van Doeland (National Data Development Unit, AIHW).

3.2 Appropriate dimension

3.2.1 Female GPs

Proposed definition:	The number of full time equivalent (FTE) female GPs per 100,000 expected unreferred GP consultations with females or per 1,000 standardised whole female patient equivalents (SWPEs), and the proportion of GPs who are female in each area (see page 41).
Rationale:	Women can frequently prefer to visit a female rather than a male GP. Lack of access to a female GP can necessitate a long trip to a location where one is available.
Desired outcome:	High and similar ratios of FTE female GPs to expected consultations with female patients in each area.
Numerator:	The number of FTE female GPs who practise in each area. The number of FTE female salaried primary care medical practitioners in each area.
Denominator:	Expected number of unreferred GP consultations with female patients who live in each area or the number of standardised whole female patient equivalents who live in each area. The number of FTE GPs who practice in each area. The number of salaried primary care medical practitioners who practise in each area.
Calculation method:	The expected number of consultations is calculated by applying the national age-specific Medicare/DVA rates of consultation to the population of females in each age group, in each area. The total number of SWPEs in each area is calculated as the number of females in each age group in each area multiplied by the SWPE weighting factor for females in each age group. The reported statistics are otherwise simple ratios.
Data source:	AIHW health labour force databases. Medicare/DVA data, AIHW population data.

Presentation:	<p>MC IR OR R VR Total</p> <p>Number of</p> <ul style="list-style-type: none"> • female GPs and FTE female GPs; • female salaried primary care medical practitioners and their FTE; • GPs and FTE GPs; and • salaried primary care medical practitioners and their FTE. <p>Percentage of</p> <ul style="list-style-type: none"> • GPs and FTE GPs who are female; and • of salaried primary care medical practitioners and their FTE, who are female. <p>The</p> <ul style="list-style-type: none"> • expected number of consultations for female patients resident in each area; and • number of female SWPEs resident in each area. <p>The ratio of</p> <ul style="list-style-type: none"> • FTE female GPs to expected female consultations or to SWPEs resident in each area; and • FTE female GP and salaried primary care medical practitioners to expected female consultations or to SWPEs resident in each area.
Data coverage:	National, annual.
Data issues:	Interpretation of this indicator should allow for the fact that differences in need across areas (as a result of differences in health status) have not been taken into consideration. All other things being equal, people in areas with poorer health status are likely to require greater medical attention, even though the cause of the poorer health is unlikely to be linked to resources, but rather to other (e.g. environmental) factors such as employment, empowerment, education, opportunity, and so on.
Related indicators:	Prevalence of chronic diseases (1.1.1), Self-assessed health status (1.3.2).
Consultation with:	Glenice Taylor, Warwick Conn (Labour Force and Rural Health Unit, AIHW). Ross Saunders (Financing & Analysis Branch, DoHA). Gordon Calcino, Jonathon Wraith (General Practice Branch, DoHA).

3.2.2 Specialist hospital procedures

Proposed definition:	Rate of hospital admission for a number of specific procedures (see page 41).
Rationale:	Remoteness of major hospitals and specialists from the rural population may influence access to specialist procedures. Does the pattern presented for procedures reflect the pattern for deaths, or alternatively are rates of procedure similar across all areas?
Desired outcome:	The pattern presented for procedures should reflect the pattern for deaths or other outcomes, or alternatively rates of procedure should be similar across areas.
Numerator:	The number of separations for each procedure.
Denominator:	The population in each area.
Calculation method:	Rates to be indirectly age-standardised using national age-specific rates as the standard.
Data source:	National Hospital Morbidity database. AIHW population database (based on ABS Census).
Presentation:	MC IR OR R VR Total Hospital separations/1,000 population for: <ul style="list-style-type: none">• coronary artery bypass graft;• angioplasty;• hip replacement;• lens insertion;• tonsillectomy;• hysterectomy; and• myringotomy. For males and females. For Indigenous, non-Indigenous and the total population (as the data allows).
Data coverage:	Updates can be reported annually. Data coverage is Australia wide.
Data issues:	A separation is not a count of the number of people who have been to hospital. Some separations are of the same person making several visits. Some people, if requiring to live close to a metropolitan hospital during treatment, may have their address recorded as other than their usual rural/remote home address. Indigenous people are under-identified in the hospital morbidity data set, with identification better in more remote areas (ABS & AIHW 1999). Reporting for Indigenous people is likely to underestimate rates in all areas, but especially in metropolitan areas. For this reason reporting for Indigenous people in each area should not be attempted and reporting for non-Indigenous should be done cautiously.
Related indicators:	Specialist consultations (3.2.3).

Consultation with: Jenny Hargreaves, Narelle Grayson (Hospitals and Mental Health Services Unit, AIHW).

3.2.3 Specialist consultations

Proposed definition:	Non-hospital consultations with specialists (see page 42).
Rationale:	Access to specialists is important for dealing with serious medical conditions and for surgical procedures. Specialist consultations may be inequitably distributed geographically. National Hospital Morbidity data has been used to quantify in-hospital services such as procedures (see indicator 3.2.2) because Medicare data describes procedures for hospital private patients (not hospital public patients). Non-hospital consultations with specialists can be quantified using Medicare and DVA data (i.e. these consultations will attract a Medicare or DVA benefit).
Desired outcome:	Equitable distribution of 'out of hospital' specialist consultations across geographic areas.
Numerator:	For people who live in each area, the number of 'out of hospital' referred specialist attendances.
Denominator:	The number of people resident in each area.
Calculation method:	Indirectly age-standardised using national age-specific rates of non-hospital Medicare/DVA consultation for each speciality.
Data source:	Medicare and DVA data. AIHW population database (based on ABS Census).
Presentation:	MC IR OR R VR Total Number of people in the population 'Out of Hospital' specialist attendances 'Out of Hospital' specialist attendances/1,000 population (age-standardised) For: <ul style="list-style-type: none">• paediatrics;• obstetrics;• orthopaedics;• pathology;• diagnostic imaging;• optometry;• other specialities;• all specialities; and• all referred attendances.
Data coverage:	Updates can be reported annually. Data coverage is Australia wide.
Data issues:	The indicator does not inform whether rates of illness or disease differ between areas, simply whether non-hospital specialist consultation rates differ.
Related indicators:	Specialist hospital procedures (3.2.2).
Consultation with:	Gordon Calcino (General Practice Branch, DoHA). Ross Saunders (Financing & Analysis Branch, DoHA).

3.2.4 Aged care

Proposed definition:	The number of places provided for the care and accommodation of older people in residential aged care services and hospitals, as well as packages (e.g. EACH and CACP) and HACC provided to assist continued living within the community (see page 42).
Rationale:	Housing and care of the aged is an important issue. The pattern of provision of services and care is likely to be different outside metropolitan areas, and people in some areas may be disadvantaged. All means of providing for older people should be considered so that a valid comparison across areas can be made.
Desired outcome:	Equitable distribution of aged care in each area. Care in a residential aged care service or through an aged care package is seen as preferable to care in a hospital setting. Care close to the individual's family and friends is preferable to care further away.
Numerator:	Places (in residential aged care services), bed years (for separations approximating nursing home type patients (NHTPs) in hospitals) and numbers of aged care packages and HACC services provided in each area (i.e. where they are used). NHTPs are approximated as non-acute patients staying more than 35 days if older than 70 years (or more than 50 years if Indigenous). However, this group may also include some others.
Denominator:	Population of people 70 years and older who live in each area. In describing rates for Indigenous people, the Indigenous population older than 50 years could be used as a suitable denominator.
Calculation method:	Divide each numerator by the denominator, then multiply by 1,000. Average age of older people calculated as the mean of the ages of those older than 70 may not be possible (with available data). As an alternative, the percentage of the population older than 70 years who are also older than 85 years.
Data source:	AIHW National Hospital Morbidity database, AIHW Population databases, ACCMIS warehouse files supplied by DoHA annually, HACC minimum data set, Community Aged Care Package Census, Extended Aged Care At Home Census, Day Therapy Centre Census.

Presentation:	<p>MC IR OR R VR Total</p> <ul style="list-style-type: none"> • Number of people 70+. • Average age of those aged 70+ (or per cent aged 85+). • Places in residential aged care services/1,000 (70+). • Bed years provided by hospitals/1,000 (70+). • Aged care packages/1,000 (70+). • HACC services /1,000 (70+). <p>Rates for these four modes of care would be presented separately for each area.</p>
Data coverage:	Updates can be reported annually. Data coverage is Australia wide.
Data issues:	<p>Each of the services or types of accommodation is not equivalent, therefore it is not possible to sum them to provide an overall picture. Some services such as places provided by multipurpose services and places provided through the ATSI Aged Care Strategy (which are more likely to be provided in more remote areas) are not able to be broken down by area and so are not reported.</p> <p>It may be more appropriate to use the number of people aged 65+ who have a physical disability as the denominator; however, it is not possible to accurately assess the size of this population within each area. If older people are cared for by relatives or friends without accessing government assistance, they will not be represented in this statistic.</p>
Related indicators:	Internal migration (2.3.3), Dependency ratio (2.3.2).
Consultation with:	Dr Diane Gibson, Dr Anne Jenkins (Ageing and Aged Care Unit, AIHW).

3.2.5 Morbidity managed in general practice

Proposed definition:	The most common problems managed by GPs (e.g. depression, anxiety, mental health problems generally, immunisation, insomnia, etc.) for people who live in each area. See page 43.
Rationale:	<p>This indicator describes, for the population in each area, the rate at which specific problems are managed by GPs (i.e. what the doctor treats).</p> <p>This indicator is important because little is known of how morbidity managed in general practice changes with remoteness of the patient.</p>
Desired outcome:	Rates of consultation are similar, or reflect levels of chronic disease and injury.
Numerator:	Proportions of GP consultations involving the management of each problem type to be based on the latest 4 years unweighted data (June release).
Denominator:	Not applicable.
Calculation method:	<p>BEACH data describes rates of encounter for specific problems managed per 100 GP encounters.</p> <p>BEACH data can also be used to describe the proportion of consultations billed to Medicare/DVA in each area.</p> <p>Medicare/DVA data can describe the number of consultations that are charged to Medicare/DVA on behalf of patients from each area (and indeed by GPs from each area).</p> <p>Using these data sources, the rate of consultation for each problem can be compared between areas. Comparison involves the calculation of the adjusted number of consultations in each area and the number expected if national rates and patterns applied.</p> <p>The number of expected consultations for each specific morbidity can be calculated for patients from each area as the sum of the expected number of consultations in all of the age groups.</p> <p>The expected number of consultations (E_i) in each age group can be calculated as:</p> $E_i = R_n \times Q_i$ <p>Where</p> <p>R_n = the individual national age-specific rates of consultation for that reason; and</p> <p>Q_i = the number of individuals in that age group in each local population.</p> <p>R_n can be calculated as:</p> $R_n = [N_n \times P_n \times (1/B_n)]/Q_n$ <p>N_n = the national number of consultations for that age group.</p>

P_n = the national age-specific proportion of consultations managed for each reason.

B_n = for the reason, the proportion of consultations charged to Medicare/DVA, nationally for each age group.

Q_n = the number of individuals in that age group in the national population.

The estimated number of actual consultations in each area is the sum of the estimated number of age-specific consultations (O_i) in each area.

O_i can be calculated as:

$$O_i = [N_i \times P_i \times (1/B_i)]$$

N_i = the local number of consultations for that age group.

P_i = the local age-specific proportion of consultations managed for each reason.

B_i = for the reason, the proportion of consultations charged to Medicare /DVA, locally for each age group.

O = the sum of calculated age-specific consultations (O_i)

E = the sum of expected age-specific consultations (E_i)

O/E = the ratio of observed to expected GP consultations (excludes consultations with other primary care medical practitioners)

$O-E$ = the number of consultations in excess of what is expected (or for negative numbers, the shortfall).

The indirect age-standardised rate = $(O/E) \times C$

Where C = the crude national rate of consultation for that reason.

It is likely that use of specific values for B_n and especially for B_i will be on the basis of small numbers and their use may be impractical. Age-specific 'all cause' values for these variables in each area, or even single 'all cause' values for each area may suffice.

Data source: BEACH data, Medicare/DVA data, AIHW population database.

Presentation: MC IR OR R/VR

Rate per 100 GP encounters.

Observed GP encounters.

Expected GP encounters.

O/E .

$O-E$.

Indirect age-standardised rate of GP encounter.

For the range of broad problems managed by GPs.

For residents of each area.

Data coverage:	BEACH survey, random sample of about 1,000 GPs per year who each supply information about 100 encounters with patients. Survey is annual, national, rolling.
Data issues:	<p>Consultations with primary care medical practitioners who are not GPs are not included. These other medical practitioners can provide a substantial volume of service in rural and remote areas. In this national sample of GPs, remote areas are not well represented (data for remote and very remote areas may need to be aggregated), and even so numbers may be too small to be meaningful.</p> <p>In BEACH data, recording by the GP of the patient's expressed reason for encounter is believed to be considerably less reliable than the GP's coding of the problem managed. Further, the patient reason for encounter is often vague (such as 'need my scripts' and could be less informative regarding population morbidity patterns. Consequently, problem managed will be reported here.</p>
Related indicators:	GP consultation (3.5.5), Prevalence of chronic diseases (1.1.1), Self-assessed health status (1.3.2).
Consultation with:	Ruth Penm (Hospitals and Mental Health Services Unit, AIHW). Helena Britt, Stephanie Knox (General Practice Statistics and Classification Unit, AIHW).

3.3 Efficient dimension

No indicators

3.4 Responsive dimension

3.4.1 Waiting times for elective surgery

Proposed definition:	The mean, median, 25th and 75th percentiles of the number of days public patients have to wait for elective surgery in public hospitals which are in each geographic area, by type of procedure (see page 48).
Rationale:	Private patients have effectively little waiting time for elective surgery. Public patients can sometimes be subjected to substantial waits, during which time they may endure additional pain and/or discomfort. Waiting times may be substantially different in regional or remote areas.
Desired outcome:	Waiting times are low and similar in each area.
Numerator:	The number of days between the patient being added to the waiting list and admission for elective surgery for hospitals that are in each area.
Denominator:	The number of separations, for elective surgery, of public patients in public hospitals that are in each area.
Calculation method:	Waiting times for elective surgery for public patients accessing services in public hospitals that are in each area. Medians and 90th percentiles of waiting times for public patients admitted to hospitals in each area.
Data source:	AIHW Elective Surgery Waiting Times data collection.
Presentation:	MC IR OR R VR Total Waiting times for public patients by indicator procedure. Median for hospitals in each area. 90th percentile for hospitals that are in each area.
Data coverage:	National and annual.
Data issues:	Currently it is not possible to describe waiting times for public patients from each area nationally (although is possible for patients to seven hospitals in SA and about thirty hospitals in Qld, but these are big and predominantly in the cities or major rural centres). This capacity may possibly be expanded in the future so that reporting of waiting times for public patients who live in each area can be described, if/when other States provide waiting time data linked to morbidity data. The statistic reported here is the waiting time for patients at hospitals in each area.
Related indicators:	Specialist hospital procedures (3.2.2), Specialist consultations (3.2.3), Numbers of health workers (3.5.2).
Consultation with:	Narelle Grayson (Hospitals and Mental Health Services Unit, AIHW).

3.4.2 GP Bulk billing

Proposed definition:	Percentage of GP consultations that are bulk billed in each area (see page 48).
Rationale:	Reduced access to and competition between GPs may result in reduced access to bulk billing for the population. This may be an impediment for rural people (a larger proportion of whom are poorer) to access GP services.
Desired outcome:	High and similar rates of bulk billing in each area.
Numerator:	The number of unreferral GP consultations that were bulk billed for people who live in each area. The number of unreferral GP consultations that were bulk billed by GPs from each area.
Denominator:	The total number of unreferral GP consultations for people from each area and for GPs from each area.
Calculation method:	Simple percentage and indirect age-standardised percentage of unreferral GP consultations that are bulk billed. Percentages to be standardised to national age-specific rates of bulk billing.
Data source:	Medicare data.
Presentation:	MC IR OR R VR Total Number of consultations by GPs from each area. Number of GP consultations for people from each area. Number of consultations bulk billed by GPs from each area. Number of GP consultations bulk billed for people from each area. Crude percentage bulk billed by GPs from each area. Crude percentage bulk billed for people from each area. Age-standardised percentage of consultations bulk billed for people who live in each area.
Data coverage:	Annual and national.
Data issues:	This indicator does not describe State-funded consultations by primary care medical practitioners working as salaried medical officers out of public hospital A&E departments. The need for age standardisation assumes that the probability of bulk billing is age-related.
Related indicators:	Household income (2.2.5), GP retention (3.9.2), Prevalence of chronic diseases (1.1.1), Morbidity managed in general practice (3.2.5).
Consultation with:	Ross Saunders (Financing & Analysis Branch, DoHA).

3.5 Accessible dimension

3.5.1 Distance to medical services

Proposed definition:

The proportion of people who are within 20, 40, 60 and 80 km by road² of a GP, a GP service,³ hospital, AMS, and a remote area nurse.

In addition to reporting for these five groups separately, reporting would also include the proportion who are:

- within 20 km from a hospital or full time GP (\$250,000 worth of Medicare billing) or full time AMS or remote area nurse base which the nurse never leaves (i.e. non-travelling nurse). This indicates access to emergency care with staff who have some level of medical/nursing skill who are permanently present at that location;
- within 20 km (or other distance(s)) of the above plus locations where there is a GP working at least 1 day a week (see definition below). This indicates access to medical/nursing workforce and to regular but non-continuous medical services (e.g. immunisation, updating scripts, check-ups etc.); and
- as above, but also including locations which are within 100 km by road of a remote area nurse base (where the nurse is a travelling nurse). This indicates access to at least intermittent medical services at the more basic end of the scale. Communities which have regular, but non-continuous, access to a remote area nurse are presumably more advantaged than those who do not have such access, but more disadvantaged than those who have access to a GP.

Currently, GISCA has the ability to report on the proportion of the population who are proximate to GPs, hospitals and AMSs. The capacity to report for remote area nurses is currently being developed.

Clearly it is not possible to equate the services provided by a remote area nurse (RAN) with that provided by a hospital (or GP) providing services from one centre. The former provides intermittent health services to small communities over a large area and under difficult conditions, while the former provides more complex help on a continuous basis at a fixed point. Presentation of these data tries to recognise these issues.

² Distance to be negotiated. Those nominated are nominal only.

³ A location which has a GP service has been defined here as one where annual GP Medicare claims for all GPs working at that location total at least \$50,000. This equates to a GP service being available at that location for approximately 1 day per week (52 weeks per year).

Because of the importance of the issue of Indigenous health and the large proportions of the remote area population who are Indigenous, it would also be desirable to report for Indigenous people. This would further complicate the presentation of the indicator. Against this must be balanced the possibility that for Indigenous people in more remote areas, the provision of services may be through other means or workers for which data does not exist.

See page 51.

Rationale:	This indicator has been proposed because of the importance of proximity to services for people living in the remote parts of Australia. Simply reporting ratio of certain services per head of population ignores the fact that people who live in towns where services exist have good physical access to services, while people who live in other areas may have very poor access. An additional feature of using GIS technology in this way is to identify areas where people do not have access to any of these services.
Desired outcome:	A high proportion of people who are close to each service in each area.
Numerator:	Not applicable.
Denominator:	Not applicable.
Calculation method:	Per GISCA.
Data source:	Per GISCA.
Presentation:	Data would be presented as a graph, table and map. The graph would compare the proportion of the population with access to each service and also to each combination of services in each area. The table would provide numeric information for the graph, along with total number of people affected. The map would identify specific geographic areas with lower levels of access and the identity and size of the population at each affected centre.
Data coverage:	National and yearly.

Data issues:	<p>Using road distance as a measure of access presupposes that all roads are of equal quality and that all people have equal access to transport (i.e. cars). For those people without access to a car, and with lower levels of or non-existent public transport in rural and especially remote areas, being 20 km from services presents a much greater barrier to accessing those services than does such a distance in less remote areas. This issue assumes even greater significance when it is considered that the people who are less likely to have transport are also the people who are likely to have poorer health and are more likely to need to access health services (e.g. the poor and Indigenous people).</p> <p>Data for remote area nurses are not yet available.</p> <p>Locations where services provided by GPs amount to less than \$50,000 per year are excluded.</p> <p>GPs based in one area, who also provide services in another, can have two provider numbers: one for the main location and the other for the second location. Details of work performed at each location are based on these provider numbers. However, not all GPs who also work in another location use a second provider number, and so description of services provided in remote areas is likely to be understated using this indicator.</p>
Related indicators:	Specialist hospital procedures (3.2.2), Primary care medical consultations (3.5.4).
Consultation with:	Errol Bamford (GISCA).

3.5.2 Numbers of health workers

Proposed definition:	The number of major groups of health workers and their full time equivalent working in each area (see page 53).
Rationale:	Access to services is at least partially affected by the number of available workers in an area from each profession per unit of population. Differences in these ratios or in the ratio of expected numbers of services to actual numbers of available health workers may signal the need for changes in the number of workers in each area.
Desired outcome:	Ratios to be similar in each area, or to become higher in areas with poorer health outcomes. For professions requiring travel (e.g. allied health workers), ratios should be higher in more remote areas.
Numerator:	The number (and full time equivalent) of general practitioners, other primary care medical practitioners, selected specialist medical practitioners, enrolled and registered nurses, selected allied health workers, dentists and pharmacists working in each area.
Denominator:	The number of people living in each area. The predicted number of services required for people who live in each area.
Calculation method:	Divide the number of health workers or FTEs by the population resident in each area. The predicted number of services is the number of services that would be performed if national age-specific service provision rates were applied to the population in each area. The ratio of predicted services to FTE is the number of predicted services divided by the number of FTEs for that profession in that area. National age-specific service provision rates (or proxy) for most age groups and for several professions can be estimated from the National Health Survey, BEACH, Medicare and National Hospital Morbidity data.
Data source:	AIHW health labour force databases. AIHW population database (based on ABS Census). Medicare/DVA data. ABS National Health Survey. AIHW National Hospital Morbidity Database. BEACH data.

Presentation:	<p>MC IR OR R VR Total</p> <p>Number of health workers. FTE of health workers. Ratio of health workers to population. Ratio of FTE to population. Ratio of 'predicted' services to FTE (where possible).</p> <p>For:</p> <ul style="list-style-type: none"> • GPs; • other primary care medical practitioners; • selected specialists (paediatricians, obstetricians, anaesthetists, orthopaedic surgeons, general surgeons); • registered nurses; • enrolled nurses; • allied health (selected physiotherapists, OTs, etc.); • dentists; and • pharmacists.
Data coverage:	National, some annual, some up to 3-yearly.
Data issues:	<p>Some populations are older, some sicker, some poorer. Simply dividing the number of health workers by population and comparing the ratio, without taking need into consideration, may not make a valid comparison. An assessment of equity needs to be made on the basis of other indicators also, for example demographics (hence the ratio of predicted services to FTE) and health (which may be estimable from health status indicators).</p> <p>Estimates of values for FTE are based on the worker's estimate of where their main, second and third job is located. There is some concern that a proportion of workers may not identify their second and third job, and so the ratio may possibly be understated in more remote areas.</p> <p>Some workers in rural and remote areas need to travel to outlying communities. The time taken to travel is at the expense of time spent with patients, therefore a greater number of workers may be required for the same output. This effect has not been taken into consideration but needs to be considered during interpretation.</p> <p>The AIHW labour force databases are compiled as a by-product of annual or biannual professional registration. Professions that do not require registration are not represented.</p>
Related indicators:	Prevalence of chronic diseases and injury (1.1.1-1.1.2), Workforce in training (3.9.1), Leading causes of death (1.4.5).
Consultation with:	Glenice Taylor (Labour Force and Rural Health Unit, AIHW).

3.5.3 Hospital separations and bed days

Proposed definition:	<p>Rate of hospital separation and consumption of bed days due to acute, non-acute and all causes:</p> <ul style="list-style-type: none">• dialysis and chemotherapy;• non-acute staying more than 35 days and older than 70 years if non-Indigenous or older than 50 years if Indigenous*;• other non acute;• injury and poisoning;• all other acute;• all acute; and• all causes. <p>*Approximates nursing home type patients (NHTPs).</p> <p>See page 54.</p>
Rationale:	<p>Hospital admission (separation) rates are frequently used to demonstrate the differences in health status or access to health services for people who live in non-metropolitan areas. This indicator compares rates of admission and bed days consumed for several classes of admission and to indicate where people from each area are admitted (e.g. are they admitted to metropolitan or local hospitals).</p>
Desired outcome:	<p>Rates similar for acute admissions, or higher where rates of chronic diseases and injury are higher. Bed days for 'NHTPs' low and similar in each area; admissions for dialysis and chemotherapy in line with prevalence of chronic disease and rates of chronic disease mortality.</p>
Numerator:	<p>Hospital separations of, and bed days consumed by, residents of each area, in hospitals in each area.</p>
Denominator:	<p>The population of each area.</p>
Calculation method:	<p>Rates to be indirectly age-standardised using national age-specific rates of separation and consumption of bed days as the standard.</p>
Data source:	<p>AIHW National Hospital Morbidity Database. AIHW population database.</p>

Presentation:	<p>MC IR OR R VR Total</p> <p>Hospital separations/1,000 population and Bed days /1,000 population for:</p> <ul style="list-style-type: none"> • Dialysis and chemotherapy; • 'NHTPs'; • other non-acute; • injury and poisoning; • all other acute; • all acute; and • all separations. <p>For both sexes, for the total population, Indigenous and non-Indigenous.</p> <p>Comparison of rates of admission and consumption of bed days to be presented as ratios of observed to expected in a table. The percentage of admissions and bed days due to each cause in each area to be described using a stacked bar chart. The indirect age-standardised rate of admission and bed days consumed as a result of acute admissions to be presented in a stacked bar chart, with each segment proportional to the rate of admission or bed days consumed in hospitals in each area.</p>
Data coverage:	<p>Updates can be reported annually. Data coverage is Australia wide.</p>
Data issues:	<p>Separation from hospital is both an indicator of health and also an indicator of access (although frequently it is unclear which of these has the greatest impact on rate of admission). Admission to hospital will also be affected by admission policies that will necessarily differ between metropolitan and rural areas.</p> <p>Indigenous people are under-identified in the Hospital Morbidity data set, with identification better in more remote areas (ABS & AIHW 1999). Reporting for Indigenous people is likely to underestimate rates in all areas, but especially in metropolitan areas. For this reason reporting for Indigenous people should not be attempted and reporting for non-Indigenous should be done cautiously.</p>
Related indicators:	<p>Prevalence of chronic diseases (1.1.1), Specialist hospital procedures (3.2.2), Aged care (3.2.4), Waiting times for elective surgery (3.4.1).</p>
Consultation with:	<p>Jenny Hargreaves, Narelle Grayson (Hospital Morbidity and Mental Health Services Unit, AIHW).</p>

3.5.4 Primary care medical consultations

Proposed definition:	The adjusted rate of consultation of medical practitioners in general practice setting and in outpatient departments (see page 54).
Rationale:	Access to primary care medical practitioners is a major rural health issue. Primary medical care can be accessed through medical practitioners working in private practice or hospital outpatients departments. Adjusted Medicare/DVA data can provide information about private practice encounters, while information about encounters in hospital outpatients departments is available from the National Hospital Morbidity data set. The patterns of use for both of these types of service differ with remoteness.
Desired outcome:	Similar rates of consultation across areas.
Numerator:	Number of GP type Medicare and DVA consultations for residents of each area, adjusted for encounters not billed to Medicare or DVA (using BEACH data). Number of public hospital outpatient occasions of service.
Denominator:	Population in each area in the same year
Calculation method:	<p>The statistic involves comparing the adjusted number of primary medical care consultations with the expected number in each area.</p> <p>National age-specific rates of consultation for Medicare and DVA are adjusted using BEACH derived national age-specific adjustment factors (AMWAC 2000).</p> <p>These national rates are applied to local populations to generate an expected number of consultations.</p> <p>The expected number of consultations is compared with the sum of the local (age-specific) numbers of consultations, adjusted by local age-specific BEACH adjustment factors.</p> <p>The reported statistic would be the ratio of the adjusted observed number over the adjusted expected number of consultations.</p> <p>The statistic for describing the rate of attendance at outpatient departments would be calculated in the same way, but without the need for adjustment.</p> <p>BEACH adjustment factors are a measure of the proportion of GP attendances that are charged to Medicare/DVA nationally and in each area (a proportion of GP attendances are not charged to Medicare or DVA).</p> <p>There needs to be some form of age standardisation because of the sensitivity of consultation rates to age and sex of the patient, coupled with the differences in the age and sex structure of the populations in the various areas.</p>

	Rates need to be adjusted using BEACH data because attendances in more remote areas are less likely to be charged to Medicare or DVA.
Data source:	Medicare and DVA patient data, BEACH data, AIHW National Hospital Establishments Database, AIHW population database.
Presentation:	MC IR OR R VR Total Adjusted number of patient encounters per 100,000 population: <ul style="list-style-type: none"> • in private practice; • as outpatients in public hospital; • total. The ratio of observed to expected attendances: <ul style="list-style-type: none"> • in private practice; • as outpatients in public hospital; • total.
Data coverage:	Data is available yearly. Coverage is national.
Data issues:	This indicator may omit some proportion of contacts with primary medical care at AMS. Hospital outpatients primary care type services may not be identical to private practice services. The indicator does not take into consideration the fact that some populations may have poorer health and greater need. Interpretation needs to bear these issues in mind independently. The indicator also does not take into consideration any differences in the length of consultation (i.e. all consultations are assumed to be of equal average duration). Outpatient occasions of service described in the Hospital Establishments Database is by area of the hospital, not area of the patient. Also, it is not possible to describe the number of these occasions of service for each age group.
Related indicators:	Rate of specialist consultation (3.2.2–3.2.3), Prevalence of chronic diseases and injury (1.1.1–1.1.2), Leading causes of death (1.4.5), Health behaviour indicators (2.4.1–2.4.6).
Consultation with:	Gordon Calcino (General Practice Branch, DoHA). Ross Saunders (Financing & Analysis Branch, DoHA). John Harding (Health Registers and Cancer Monitoring Unit, AIHW). Narelle Grayson (Hospital Morbidity and Mental Health Services Unit, AIHW).

3.5.5 Dental consultations

Proposed definition:	Rate of and reason for dental consultations. Reasons for visit include pain, other problem, check-up, and so on (see page 54).					
Rationale:	Access to dentists is important for dealing with dental conditions that impact on pain, wellbeing and self-perception. Dental consultations may be inequitably distributed geographically.					
Desired outcome:	Similar rate of consultation in each area.					
Numerator:	Number of dental consultations, by broad reason for visit.					
Denominator:	Number of respondents to the National Health Survey.					
Calculation method:	<p>Indirect age-standardised using national age-specific rates at the time of the survey. For comparisons over time, age standardise to the national age-specific rates in one of the years (e.g. 1995).</p> <p>Also report for broad age groups (0-19, 20-39, 40-59, 65+ years) if the data supports this level of analysis.</p> <p>Although rates for females are higher than for males, the difference is not great. Reporting for persons rather than by sex will help with power in the analysis.</p>					
Data source:	ABS National Health Survey (currently 1989-90, 1995 and 2001 available).					
Presentation:	<table><thead><tr><th>MC</th><th>IR</th><th>OR</th><th>R/VR</th><th>Total</th></tr></thead></table> <p>Age-standardised mean number of consultations per year (per patient) and for each major age group (if possible).</p> <p>For all reasons and by reason for visit.</p> <p>Indigenous, non-Indigenous, all people (although small numbers will make analysis difficult or impossible in most cases).</p> <p>Age-standardised median number of consultations (and 25th and 75th percentiles).</p> <p>Time trend (each year for which data is available).</p>	MC	IR	OR	R/VR	Total
MC	IR	OR	R/VR	Total		
Data coverage:	NHS data available nationally and every 5 years.					

Data issues:	<p>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 63.</p> <p>Another source of data is the National Dental Telephone Interview Survey; however, small sample size reduces its usefulness (particularly in non-metropolitan areas). Also, telephone coverage in some regional areas and most remote and very remote areas may be substantially less than 100%. This may bias the survey results in these areas to wealthier people, who are likely to have better access and better health outcomes than poorer people. This survey was conducted in 1994–96, 1999, and will be again in 2002 and 2005. Sample sizes were 7,987 in 1994; 5,101 in 1995; 8,292 in 1996; and 7,829 in 1999.</p> <p>The changes in availability of free/subsidised dental health care for lower income earners may result in changes in consultation rates over time. It is possible that review of the data within cohorts may ultimately be appropriate.</p>
Related indicators:	Decayed, missing and filled teeth (1.1.4), Numbers of health workers (3.5.2).
Consultation with:	David Brennan (Dental Statistics Research Unit, AIHW).

3.5.6 Prescription

Proposed definition:	Rate of prescription for all pharmaceuticals, and also for major groups of pharmaceuticals (see page 55).
Rationale:	Distance from a community pharmacist or a hospital pharmacist may reduce the opportunity for people to access this service and fill prescriptions. This indicator attempts to compare the rate of prescription for all and several major groups of pharmaceuticals for people who live in each area.
Desired outcome:	Rate of prescription similar in all areas, or higher in areas with poorer health outcomes.
Numerator:	<p>Total number of prescriptions for all pharmaceuticals and for major groups of pharmaceuticals. The total number of prescriptions will need to be modelled from the number collected by concession holders under the Pharmaceutical Benefits Scheme.</p> <p>Generic (Anatomical Therapeutic Chemical (ATC) level 5) drugs costing more than the threshold amount, aggregated up to ATC level 2. Those categories for which inter-regional comparison is considered valid to be included in analysis. Comparison of prescription rates for preventive and disease management pharmaceuticals may also be possible.</p>
Denominator:	The number of people resident in each area.
Calculation method:	Indirect age-standardised rate of prescription, using national age-specific rates as the standard. Comparison between years requires standardisation to a single year (e.g. 1999).
Data source:	DoHA PBS data. AIHW population database (based on ABS Census).
Presentation:	MC IR OR R VR Total For males and females. Rate of prescription per 100,000 population. All pharmaceuticals. Major (level 2 ATC) groups of pharmaceuticals.
Data coverage:	Annual and national.

Data issues:	<p>Details of pharmaceutical use are collected for concession holders and for those pharmaceuticals that are expensive enough to attract a benefit under the PBS. Valid comparison between total rates in each area depends on the ability to adjust data for concession holders. Adjustment accounts for pharmaceuticals purchased by non-concession holders, without the aid of the PBS (details of which are not recorded on the PBS). This ability has been developed by the Pharmaceutical Access and Quality Branch (DoHA).</p> <p>Reporting for groups of pharmaceuticals without the use of adjustment is possible, but would need to apply only to drugs costing more than the threshold amount.</p> <p>Data on postcode has only lately become available and so reporting by area is only possible from 2002.</p>
Related indicators:	Numbers of health workers (3.5.2), Prevalence of chronic diseases (1.1.1), Leading causes of death (1.4.5).
Consultation with:	<p>Bruce Griffin, Peter Marlton (Pharmaceutical Access and Quality Branch, DoHA).</p> <p>Maxine Robinson (Pharmaceutical Evaluation/Pharmaceutical Benefits Branch)</p>

3.5.7 Access to disability services

Proposed definition:	The rate of use of disability services (see page 56).
Rationale:	Different rates of service provision may indicate different levels of access to services for people with disabilities.
Desired outcome:	Similar rates of service provision in each area.
Numerator:	The number of people from each area accessing disability services on the snapshot day.
Denominator:	The number of people estimated to have a profound/severe disability in each area.
Calculation method:	Divide the number accessing the service on the snapshot day by the number of people estimated to have a profound/severe disability. The summary statistic is a ratio.
Data source:	CSDA Minimum Data Set (snapshot day data).
Presentation:	MC IR OR R VR Total Ratio of the number of people accessing disability services to the number with a profound/severe disability in each area.
Data coverage:	Data available nationally and annually.
Data issues:	Use of this statistic is not currently possible as data on the provision of service is only currently available for location of service, not location of client. This data is, however, likely to be available in the future. Additionally, this indicator describes only one of several programs that assist people with disabilities. This indicator ignores the contribution from programs such as HACC. One person can use more than one service on any one snapshot day. The summary statistic is not a true rate and is based on a survey generated estimate of the number who have a disability and an indicative measure of the number of people accessing a service on a snapshot day. This indicator should be interpreted with caution because people with disabilities, unable to obtain services where they live, may move to less remote areas so as to obtain services.
Related indicators:	Prevalence of disability (1.2.1).
Consultation with:	Xingyan Wen and Phil Anderson, Ros Madden (Functioning and Disability Unit, AIHW).

3.6 Safe dimension

3.6.1 Surgical and medical misadventure

Proposed definition:	The rates of death and hospital admission as a result of surgical and medical misadventure (see page 58).
Rationale:	Are the chances of successful medical and surgical care similar for people from all areas? Are outcomes for residents of remote areas as good as for people from less remote areas?
Desired outcome:	Rates of misadventure to be low and similar across all areas, decreasing over time.
Numerator:	The number of admissions and deaths as a result of surgical and medical misadventure (ICD10 Y40–Y84) for residents of each area.
Denominator:	The number of admissions requiring a procedure (as a measure of exposure to medical and surgical intervention) for residents of each area.
Calculation method:	Indirect age-standardised rates, using the national rate for misadventure as the standard. Comparison across time requires standardisation to a single year (e.g. 1999).
Data source:	AIHW National Hospital Morbidity Database. AIHW Mortality Database.
Presentation:	MC IR OR R VR Total Number of deaths. Number of admissions. Deaths per 1,000 admissions requiring procedure. Admissions per 1,000 admissions requiring procedure.
Data coverage:	Annual and national.
Data issues:	It is not possible to determine from the data where the misadventure took place. The denominator describes only admissions to hospital requiring procedure. Other interventions (e.g. private medical consultations) are not considered.
Related indicators:	Specialist hospital procedures (3.2.2), GP consultations (3.5.4).
Consultation with:	Narelle Grayson (Hospitals and Mental Health Services Unit, AIHW).

3.7 Continuous dimension

3.7.1 Care planning and case conferencing

Proposed definition:	The rate of care planning and case conferencing (see page 59).
Rationale:	Care planning and case conferencing aims to promote coordination of the care of a patient with at least one chronic medical condition and complex multidisciplinary care needs. This involves a GP planning or meeting with at least two other health professionals. Better coordination is likely to improve the quality of care for patients.
Desired outcome:	Rates of care planning and case conferencing similar in each area. It is unclear what level of service is most appropriate.
Numerator:	The number of Medicare claims for item numbers 720–730 (care planning) and 734–779 (case conferencing).
Denominator:	The population in each area and the number of people who are admitted to hospital for a procedure.
Calculation method:	Indirect age-standardised rate of case planning and care conferencing, using national age-specific rates as the standard.
Data source:	Medicare data, AIHW population database (based on ABS Census), AIHW National Hospital Morbidity Database.
Presentation:	MC IR OR R VR Total Rate of care planning per 100,000 population. Rate of case conferencing per 100,000 population. The indirect age-standardised rate of hospital admission requiring procedure (as a proxy measure of ill health); for comparison.
Data coverage:	National and annual.
Data issues:	These data items are relatively new. It is anticipated that use of these Medicare item numbers will improve over time. The comparison will be between the number of occasions of service and both the number of people in the population and the number of people who are admitted to hospital for a procedure (as a measure of ill health requiring care). The statistics should be treated as indicative ratios rather than as true rates.
Related indicators:	Prevalence of chronic diseases (1.1.1).
Consultation with:	Kim Boyer (NHMRC). Ross Saunders (Financing & Analysis Branch, DoHA).

3.8 Capable dimension

3.8.1 Hospital accreditation

Proposed definition:	The percentage of public hospitals and hospital beds that are accredited in each hospital peer group, in each area (see page 60).						
Rationale:	Accreditation is a measure of compliance with recommended standards. A high proportion of hospitals complying with the standard indicates a higher level of capability.						
Desired outcome:	All public hospitals accredited in each area.						
Numerator:	The number of accredited hospitals and hospital beds in each area that are in each hospital peer group.						
Denominator:	The number of hospitals and hospital beds in each area that are in each hospital peer group.						
Calculation method:	The statistic to be reported as a simple proportion.						
Data source:	AIHW National Hospital Establishments Database.						
Presentation:	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center;">MC</td> <td style="text-align: center;">IR</td> <td style="text-align: center;">OR</td> <td style="text-align: center;">R</td> <td style="text-align: center;">VR</td> <td style="text-align: center;">Total</td> </tr> </table> <p>The number of accredited hospitals and hospital beds in each peer group.</p> <p>The number of hospitals and hospital beds in each peer group.</p> <p>The proportion of hospitals in each peer group that are accredited.</p> <p>The proportion of hospital beds in each hospital peer group that are accredited.</p>	MC	IR	OR	R	VR	Total
MC	IR	OR	R	VR	Total		
Data coverage:	National and annual.						
Data issues:	<p>Private hospitals are not included.</p> <p>There are some concerns about the quality of data. Accreditation can be by a range of accrediting bodies and for a range of issues, not all of which are comparable.</p>						
Related indicators:	Surgical and Medical misadventure (3.6.1).						
Consultation with:	Narelle Grayson (Hospitals and Mental Health Services Unit, AIHW).						

3.9 Sustainable dimension

3.9.1 Workforce in training

Proposed definition:	Number of commencements of students from each area enrolled in first year studies of selected health disciplines (see page 61).
Rationale:	It is believed that health sector students from rural areas are more likely to return to rural areas to practise. This indicator describes enrolment of rural students in tertiary health sector courses. Increasing proportion of enrolments from rural and remote areas is desirable.
Desired outcome:	Strong and growing representation of students from rural and remote areas training in the health sector.
Numerator:	<p>The number of students from each area commencing health courses. Data is available from 1989 for trend analysis.</p> <p>Disciplines proposed for reporting include:</p> <ul style="list-style-type: none">• medicine (ASCO 07.05.02)• occupational therapy (ASCO 07.06.02)• physiotherapy (ASCO 07.06.03)• speech pathology (ASCO 07.06.04)• dentistry (excludes therapists) (ASCO 07.02.01)• health surveying and environmental health (ASCO 07.03.04)• nursing (basic) (ASCO 07.04.02)• medical radiography (ASCO 07.04.04)• medical technology (ASCO 07.04.05)• nutrition and dietetics (ASCO 07.04.06)• optometry (ASCO 07.04.07)• pharmacy (ASCO 07.04.08)• podiatry (ASCO 07.04.09)
Denominator:	Numbers of existing workers in each area and an estimate of the size of a 1-year cohort from each area.
Calculation method:	Report raw numbers for each year. Also divide numerator by denominator to provide a ratio of the number of students commencing training compared to the number of workers already practising and a proxy for the percentage of their cohort enrolling from each area.
Data source:	DEST Higher Education data holdings (commencements), AIHW labour force data, AIHW population databases.

Presentation:	MC	IR	OR	R	VR	Total
	For the following courses:					
	<ul style="list-style-type: none"> • medicine; • occupational therapy; • physiotherapy; • speech pathology; • dentistry (excludes therapists); • health surveying and environmental health; • nursing (basic); • medical radiography; • medical technology; • nutrition and dietetics; • optometry; • pharmacy; and • podiatry. 					
	Number of students.					
	Number of existing workers.					
	Number of FTEs (existing workers).					
	Population in 'cohort'.					
	Ratio of students to workers.					
	Students per 1,000 in the 'cohort'.					
	Time trend.					
Data coverage:	Annual, national.					
Data issues:	<p>The postcode listed on commencements file may not, in a small number of cases, reflect all students who have commenced study who are from a rural or remote area. It is possible that students may record their 'semester/term residence' address as their 'permanent home residence'. This is more likely to be a problem if seeking information about course completions (when a student's ties with the parental home are likely to be weaker).</p> <p>Also, there are difficulties in expressing commencements of health-related courses as a rate per head of population or as a ratio due to the difficulty in selecting the appropriate source population. Using 15-19 or 15-24 year olds as the denominator would lead to a higher rate of commencements in rural and remote areas because of the smaller population of that cohort remaining in these areas after a substantial proportion move so as to seek employment or study.</p> <p>The population of 10-14 year olds is an imperfect but practical estimate of a suitable denominator.</p>					
Related indicators:	Numbers of health workers (3.5.2), High school retention rates (2.2.2).					
Consultation with:	Odette Vogt (Labour Force and Rural Health Unit, AIHW).					

3.9.2 GP retention

Proposed definition:	The number and percentage of general practitioners receiving rural retention payments (see page 62).
Rationale:	Rural retention payments are both a measure of the duration GPs work in non-metropolitan areas and a reward for fulfilling a community need. Monitoring of the total amount paid in rural retention payments in each area would indicate changes in retention.
Desired outcome:	The percentage of GPs who receive rural retention payments to increase over time.
Numerator:	The number of GPs receiving rural retention payments.
Denominator:	The number of GPs working in each area.
Calculation method:	Divide the numerator by the denominator.
Data source:	HIC data. AIHW Medical Labour Force database.
Presentation:	MC IR OR R VR Total Number of GPs receiving retention payments. Number of GPs in each area. Percentage of GPs receiving retention payments. Percentage of GPs qualifying for retention payment categories A to E.
Data coverage:	National and annual.
Data issues:	Primary care medical practitioners working under other systems (e.g. State salaried medical officers) are also included when they work in areas covered by retention payment categories C, D and E. Categories A, B, C, D and E are determined on the basis of remoteness (E being most remote); qualifying periods in more remote areas are shorter and payments are higher.
Related indicators:	Numbers of health workers (3.5.2).
Consultation with:	Gordon Calcino (General Practice Branch, DoHA). Ross Saunders (Financing & Analysis Branch, DoHA).

3.9.3 Hours worked and age of health workers

Proposed definition:	Hours worked, age and sex of health workers, including general practitioners, other primary care medical practitioners, selected specialist medical practitioners, enrolled and registered nurses, selected allied health workers, dentists and pharmacists working in each area (see page 62).
Rationale:	Rural health workers can be older, work longer hours and be less likely to be female. These features have important effects on the appropriateness and sustainability of the provision of service.
Desired outcome:	Similar characteristics in all areas.
Numerator:	Hours worked, age and sex of health workers.
Denominator:	Number of health workers.
Calculation method:	Simple percentages, median, 25th and 75th percentiles.
Data source:	AIHW health labour force databases.
Presentation:	MC IR OR R VR Total For males and females, mean, median, 25th and 75th percentiles: <ul style="list-style-type: none">• hours worked in each area;• hours on call not worked (for medical practitioners); and age. For: <ul style="list-style-type: none">• GPs;• other primary care medical practitioners;• selected specialists (paediatricians, obstetricians, anaesthetists, orthopaedic surgeons, general surgeons);• registered nurses;• enrolled nurses;• allied health (selected physiotherapists, OTs, etc.);• dentists; and• pharmacists.
Data coverage:	Some can be updated annually (e.g. medical), while others can be updated 2-yearly (nursing), 3-yearly (allied health) or less frequently (dentistry, pharmacy). Coverage is for all of Australia.

Data issues:	<p>Total hours worked on call by medical practitioners is not available, but rather is included among the total hours worked reported here. It is not possible from the data to determine the number of nights or weekends off duty for medical practitioners in each area.</p> <p>Because health workers can work in several locations, hours worked have been proportionally allocated to the various locations where the worker said they worked.</p> <p>The use of full time workload equivalent (FWE) was considered. FWE (based on receipts from Medicare for each GP) could be used as an estimate of workload, with those earning more from Medicare than a standard amount (e.g. \$185,000) considered to be overworked. A potential complication is that rural and remote GPs may need to travel more (therefore reducing the opportunity to earn), and it is possible that, for some GPs, Medicare may be only one source of income.</p> <p>The suggested indicator is based on hours worked (not income earned) and may consequently be a better measure.</p>
Related indicators:	GP retention (3.9.2).
Consultation with:	Glenice Taylor, Warwick Conn (Labour Force and Rural Health Unit, AIHW).