Key indicators of progress for chronic disease and associated determinants

Data report

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Abbreviations

ABS	Australian Bureau of Statistics
ASGC RA	Australian Standard Geographic Classification Remoteness Structure
AIHW	Australian Institute of Health and Welfare
AusDiab	Australia, Diabetes, Obesity and Lifestyle (study)
BMI	body mass index
CDRI	chronic disease risk index
COAG	Council of Australian Governments
COPD	chronic obstructive pulmonary disease
DALYS	disability-adjusted life year
DoHA	Australian Government Department of Health and Ageing
ESKD	end-stage kidney disease
ERP	estimated resident population
HDL	high-density lipoproteins
HII	Health Inequality Index
IHD	ischaemic heart disease
LDL	low density lipoproteins
NATSIHS	National Aboriginal and Torres Strait Islander Health Survey
NHMRC	National Health Medical Research Council
NHPT	National Health Preventive Taskforce
NHS	National Health Survey
NDSHS	National Strategy Drug Household Survey
PHIDG	Population Health Information Development Group
SMHWB	Survey of Mental Health and Wellbeing
WHO	World Health Organization

Summary

In recent years the need to prevent chronic disease and to keep people healthy and out of hospital has become increasingly important. This is evident in the policies and strategies of the current Australian Government (for example, the National Preventative Health Strategy), where a shift from treatment to prevention is apparent. Many chronic diseases common in Australia today are amenable to preventive measures, including changes in lifestyle behaviours, better medical treatments and early detection. The world of chronic disease prevention is complex and includes factors such as prevalence, rates of risk factors and measures of management. Because of these attributes, it lends itself to multiple opportunities for surveillance and monitoring.

This report presents data for the 42 *Key indicators of progress of chronic disease and associated determinants*. This indicator set was developed to provide a standard set of statistics that, over time, will provide a 'report card' on how prevention of chronic disease in Australia is progressing. As this is the first report that presents data for these indicators, it can be considered as providing baseline statistics.

Progress in the prevention of chronic disease

The indicators show a mixed picture of progress in the prevention of chronic disease.

The good news stories are related to mortality. Australians are living longer, and gains in life expectancy continue to occur. Premature deaths (that is, deaths in people aged less than 75 years) from leading potentially preventable chronic disease are also falling, having decreased by 17% in 10 years. The gap between Indigenous and non-Indigenous life expectancy is 11.5 years for males and 9.7 years for females, and closing this gap is a major focus of Australian governments.

The results for determinants (risk factors) present a mixed story. On the positive side, daily smoking continues to decrease and now concerns only 17.5% of the adult population. Less favourably, about a quarter of Australian children are currently overweight or obese, as are over 60% of adults. These estimates are based on data from physical measures. Comparable trends in these data are unavailable; however, when similar estimates for adults from self-reports are analysed, they show that rates of overweight/obesity have increased over time. Excess weight is associated with many chronic conditions, so the increase shown in these statistics is of concern.

For some chronic conditions (such as depression or dementia), limited availability of data means that trends in prevalence remain either unchanged or unclear. The true prevalence of Type 2 diabetes (using data derived from measured sources—laboratory tests) is also unknown at this point in time, as the last available data (indicating that 7.1% of adults have Type 2 diabetes) are now about 10 years old. However, trends based on self-reported information indicate that this condition is increasing—a trend also observed in other countries.

Preventable admissions to hospital (that is, those that could have potentially been prevented through the provision of appropriate non-hospital health services) present a stable trend. Recently there are indications that these may be improving (decreasing), although more data need to be accumulated to confirm the direction.

Introduction

This report presents data against the *Key indicators of progress of chronic disease and associated determinants* (the KIP set). The KIP set comprises 42 measures that can be used individually, or in combination, to show changes across time in selected chronic diseases and their determinants (often referred to as risk factors). In turn, these provide researchers, policy makers and health program managers with a set of indicators that enable the standardised measurement of the progress in the prevention of chronic disease in Australia.

A complementary report to this one (*Key indicators of progress of chronic disease and associated determinants: technical report*; hereafter *Technical report*) was released in 2009 (AIHW 2009a). It contains all the technical specifications required to report against the KIP set, as well as background information such as the development process and the criteria used in the selection of indicators. As indicator development and maintenance is a continuing process, specifications for indicators can change. In such cases, readers are alerted to any differences between the original specifications and those that are current within the text.

What is chronic disease?

In general, chronic diseases are mostly characterised by complex causality, multiple risk factors, long latency periods, a prolonged course of illness and functional impairment or disability (AIHW 2002). The chronic diseases that are the focus of the KIP set are those which are considered in some way preventable, largely through behaviours, or those that react favourably in terms of management and medical treatment (if they are detected and treated in their early stages).

Chronic diseases feature as common causes of death (particularly premature deaths) and impact heavily on the use of health services. With the ageing of the Australian population, the increase in certain risk factors and the prolonging of life due to improvements in medical interventions, the prevalence of chronic disease is expected to increase in the future. It is therefore a key policy area that needs monitoring by governments, health policy makers and those who develop and manage health programs.

Why do we need to measure prevention of chronic disease?

Chronic diseases are a major burden on those that suffer from them, as well as their carers, their communities and the population as a whole. They are associated with high use of health care services and draw heavily on the available funding for health care.

Chronic diseases are highly prevalent in the population, and are the major cause of death (including premature deaths) and disability in the population. Chronic conditions can also impact on people's employment arrangements—by affecting their ability to work full time and causing them to take time away from work due to illness—or they can be the reason behind people's early retirement from the workforce.

There has been an increase in the prevalence of chronic disease over time. Much of this increase can be attributed to a range of causes (determinants), including the ageing of our

population, improved treatments for diseases that people used to die from, and lifestyle factors such as smoking, physical inactivity and excessive alcohol intake. In fact, many of the chronic diseases most prevalent in the population are considered amenable to preventive measures (for example, changes in lifestyle behaviours, screening for certain diseases and better management of existing conditions). It is these preventive measures that are currently the focus of the Australian Government.

What are determinants?

Determinants are factors that can have a positive or negative impact on health. Negative determinants, also referred to as risk factors, can increase the chances of ill health, impede the management of health conditions and are often common to many chronic diseases. Smoking is an example of a risk factor.

Positive determinants, referred to as protective factors, can prevent or decrease the chance of ill health, help maintain good health or assist in the management of disease. For example, good nutrition can positively affect health by preventing some chronic diseases.

The determinants that are the focus of the KIP set are those that are amenable to change, and if change occurs, will directly affect the chronic conditions that are the focus of the KIP set. Most of the determinants relate to individual health behaviours (such as tobacco smoking) or biomedical factors (such as blood pressure).

It is important to note that other determinants of health exist. These include broader features of society, environmental factors and an individual's physical and psychological makeup. For more information about determinants, see Chapter 3 in *Australia's health 2010* (AIHW 2010a).

Why is the KIP set important?

Policies, programs and initiatives that aim to prevent, reduce or better manage chronic disease require accurate and reliable information to identify areas for intervention, assess success or failure and measure progress. A set of standardised indicators such as the KIP set is important as it provides a set of 'signposts' that can be used by individuals or organisations that need to measure key aspects of chronic disease prevention. Prior to the KIP set, reporting about chronic disease and its associated determinants in Australia was disjointed and inconsistent, due largely to the numerous indicators used for reporting and the varied data sources used to derive statistics for them. Because of these reasons, it was also difficult to identify gaps in either data availability, or where indicators for certain chronic disease had not been developed.

Policy context for the KIP set

As noted in the previously released *Technical report*, the KIP set will inform a number of national strategies, frameworks and policies. The majority of these highlight the change in policy direction from the treatment and management of chronic diseases once they occur to the prevention of the conditions. These strategies include:

- National Chronic Disease Strategy, 2005

- Healthy for Life program, 2007

- Australia: the Healthiest Country by 2020–the National Preventative Health Strategy (NPHT 2009a).

Since the release of the *Technical report* in early 2009, a number of significant strategies (or reports) were released, and these are described below.

The National Preventive Health Taskforce (NPHT) developed the National Preventative Health Strategy that was launched by the Minister for Health and Ageing on 1 September 2009. The three points of initial focus of the strategy are obesity, tobacco and excessive consumption of alcohol (NPHT 2009a). The strategy also proposed the establishment of an independent national health promotion and prevention agency.

The National Health and Hospital Reforms Commission, in its report *A healthier future for all Australians — final report June 2009* (NHHRC 2009), also recommended the establishment of an independent national health promotion and prevention agency.

In 2010, the Australian Government responded to the work undertaken by the NPHT and the NHHRC in *Taking preventative action: a response to Australia: The Healthiest Country by 2020*, and confirmed its commitment to the prevention of chronic disease (Commonwealth of Australia 2010).

In mid-2009, the Minister for Health and Ageing released the National Primary Health Care Strategy. The intention of this document was to provide a road map to guide future policy and practice in primary health care in Australia. The strategy outlined four priority directions for change, the indicators in this report being mostly relevant to areas 2 and 3: *Better management of chronic conditions* and *Increasing the focus on prevention*.

In January 2010, the Australian Government released its social inclusion agenda, which is based on a set of social inclusion principles (Australian Government 2010). The current priorities of the agenda have strong links to health, and some of the statistics in this indicator set are able to inform these priorities, or parts thereof.

Most recently, in November 2010, the Australian Parliament passed the *Australian National Preventive Health Agency Act 2010*, thereby formally establishing the Australian National Preventive Health Agency.

Why use indicators?

> **What is an indicator?**
>
> An indicator is a statistic that can describe a situation concisely, help assess progress and performance, and act as a guide to decision making.

Indicators are important health surveillance tools that are used to establish points of reference, monitor the health of populations, and evaluate the outcomes of treatments, health service use, interventions and health programs (AIHW 2008a).

However, it is important to note that while an indicator does not provide the entire picture, it can indicate change. For example, a drop in rates of deaths from selected chronic diseases may not necessarily mean that these diseases are becoming less prevalent, but it may mean that treatments have improved or new treatments have been developed that extend the lives of those with the conditions.

For composite indicators (that is statistics that roll together several related measures into a single score), extra care should be taken to 'unpack' the underlying data to discover why changes (or no change) have occurred. For example, a steady trend in the *Potentially preventable hospitalisations – summary* (Indicator 1.11) may mask the increase in hospitalisations from one condition, if hospitalisations from another condition have decreased.

Development of the KIP set

The KIP set was developed throughout 2007 and 2008, and endorsed by the Australian Population Health Development Principal Committee in early 2009. The development processes was undertaken by a Population Health Information Development Group (PHIDG) project group (comprising PHIDG members and experts in the field of indicator development) and included a stakeholder consultation process.

A set of criteria (see box below) was considered, by both the PHIDG project group and stakeholders, when selecting indicators.

> **Criteria for the selection of key indicators**
> * Be relevant
> * Be applicable across population groups
> * Be technically sound (valid, reliable, sensitive (to change over time) and robust)
> * Be feasible to collect and report[a]
> * Lead to action (at various population levels, for example, individual, community, organisation/agency)
> * Be timely
> * Be marketable.
>
> (a) The selection of indicators was not driven by data availability.
>
> *Note:* The order of these criteria does not indicate priority.

The indicator set was structured into four categories:

- Category 1—indicators that are considered to be high-impact in nature and that can be used for 'one-headline statistic' reporting

- Category 2—indicators that complete the picture given by those in category 1

- Contextual indicators—indicators that do not directly relate to chronic disease but provide a broad view of the health environment

- Indicators for development—this is a temporary category for two indicators that require further research and development.

More information about these categories is available in the *Technical report* (AIHW 2009a).

Because the KIP set was developed using previously endorsed national indicators, the individual abilities of each indicator to measure aspects of chronic disease were not assessed. In part, it was assumed that the previous developers of those indicators had selected them using research, evidence, policy requirements and personal experience in the related fields.

For indicators that had not been previously endorsed (for example, *Waist circumference*), the PHIDG group approached current experts for advice about the best way to report the concept.

The KIP set will be reviewed in the future (see *Future directions* on page 14 of this report), and the indicators will be assessed against the original criteria, as well as for their ability to provide good measures. The review will identify the most current research, evidence and policy requirements that will help justify each indicator's inclusion in the KIP set.

Attributes of the KIP set

One of the main qualities of the KIP set is that it covers most facets of those chronic diseases that are considered amenable to prevention. Thereby, it provides a comprehensive set of signposts that can help identify change (negative and positive) and measure progress towards or away from goals.

As noted on page 2, reporting on chronic disease was previously not adequate in terms of consistency; the KIP set allows for reporting of information across time in a standardised way. The supporting documentation (that is, the *Technical report)* provides information about all aspects of the indicators, including reporting categories, recommended data sources and the data required to construct the indicator (for example, what population to use for the denominator). This type of information allows others to derive similar statistics from their own data. The technical documentation also indicates for which population groups reported data should occur.

The KIP set makes use of composite indicators which bring together a number of data elements and measures to construct a single summary measure. Four such indicators are included in the set, with another two earmarked for research and development. These types of indicators are generally useful as quick, single, easy-to-understand numbers that can highlight change in the underlying data, and lead to further investigation.

Another attribute of the set is that data unavailability did not impede the inclusion of indicators in the set. In other words, the best possible collection of indicators to provide good

measures about chronic disease were compiled, regardless of known limitations at the time. This means that gaps are highlighted, which is useful to those who collect data or design surveys, as well as other information professionals, because it highlights areas where information is needed.

Limitations of the KIP set

Like most indicator sets, it is unlikely that the KIP set will measure all aspects of chronic disease. Some reasons for this include:

- The chronic disease environment changes and indicators developed at a particular point in time may not hold the same relevance in the future. Reviewing and updating the KIP set will assist in maintaining relevance of the indicators it contains. Readers interested in this should also refer to the discussion about emerging issues in *Future directions* on page 14 of this report.

- The choice of indicators may be biased by health topics which are prominent in the literature or media at the time of development. The current activities or interests of health authorities can also play a part in the selection process.

- The selection of indicators can also be influenced by the expertise, knowledge and interests of those charged with the development of the KIP. For example, if there is a wealth of information about how to collect and use data on heart disease within a development group, the indicators chosen may reflect this.

Regardless of the best efforts to produce a comprehensive set of indicators, gaps can still exist due to unavailability of data—this is certainly true for the KIP set. At the time of writing this report, many indicators could not be reported against (for example, exclusive rates of breastfeeding infants at particular ages or trends in proportions of people with dementia). These gaps limit the extent that progress toward prevention of chronic disease can be measured.

Review of the KIP set

The KIP set was developed with the intention of future reviews and ongoing development, to ensure it remains relevant for those that use it. More information about the review can be found in *Future directions* on page 14 of this report.

Other indicators sets

There are many health-related indicator sets that are currently reported against; some are directly related to the KIP set and share the same or similar indicators, while the focus of other sets is quite different. As an example, a description of two national indicator sets is given below.

The National Health Performance Framework indicators

The National Health Performance Framework (NHPF) was developed by the National Health Performance Committee in 2001, and was revised in 2008 (AIHW 2009b). The focus of this framework is to provide a broad perspective of health and health system performance; 42 indicators are used to report against the framework. These indicators are classified within 14 health performance dimensions, grouped under the three broad domains of *Health status*, *Determinants of health* and *Health system performance*. Many of these indicators are the same (or similar) to those in the KIP set. The NHPF indicators are reported against in *Australia's health 2010* (AIHW 2010a).

The National Healthcare Agreement indicators

In late 2008, the Council of Australian Governments (COAG) endorsed a new Intergovernmental Agreement on Federal Financial Relations that included six new National Agreements; one of these was the National Healthcare Agreement (COAG 2009). Under these arrangements, Australian and state/territory health authorities committed to regularly report on a set of performance indicators. Detailed specifications for these indicators were endorsed by the Australian Health Ministers' Advisory Council, and were first reported in April 2010 (COAG Reform Council 2010).

At the time of writing this report, the National Healthcare Agreement indicators were a major focus of health authorities and reporting agencies. Therefore, where indicators in this set are the same or similar to the National Healthcare Agreement indicators, a COAG flag indicating the number of the performance indicator will be included near the main statistic.

PI no.

With COAG agreement, Heads of Treasuries are currently reviewing the National Agreement and National Partnership Agreement conceptual frameworks and associated indicators. This review, scheduled for completion by the end of 2011, may lead to a revised set of health indicators for national reporting.

Other indicator sets and frameworks

The Indigenous Health Performance Framework provides detailed information on Aboriginal and Torres Strait Islander people and is published every two years (AIHW 2008b).

In addition to the set of indicators described above, there are many other topic or population specific sets, for example, the *Key performance indicators for public sector mental health services* (NMHWG 2005) and *The Headline Indicators for children's health, development and wellbeing* (AIHW 2008c).

Structure of the report

This report uses the structure of the KIP set as the basis for how statistical information is presented; that is, there are separate chapters for category 1 indicators, category 2 indicators and contextual indicators (see the T*echnical report* for explanations of these). At the beginning of the chapters for category 1 and category 2 indicators, a 'report card' in the form of a summary table shows the current measure of the indicator and describes (where possible) whether there is a favourable, stable or unfavourable trend. If there are insufficient data to determine a trend, this is also indicated. For any trend to be acknowledged, it must fulfil all the following criteria:

- the time span of comparable information is at least five years

- there are three or more pieces of comparable information spread over that period (not just at the beginning and end)

- the change in levels is generally in one direction over the period cited.

The last of these criteria can sometimes be difficult to interpret, as more recent data may not reflect a change as such. For example, if a trend had started to level off, or changed direction, these changes can be difficult to interpret early and more data have to become available before the changes are confirmed.

This report also includes some discussion about the two indicators that were earmarked for development in the technical report: the Chronic Disease Risk Index (CDRI) and the Health Inequalities Index (HII). Information about these indexes is contained in the section *Future directions* on page 14.

For each indicator reported, two opposing pages are used. For Category 1 indicators, main statistics and related information, as specified in the *Technical report,* are presented first. Then, further disaggregated information (for example, by geographic region) or data derived from sources other than those recommended in the technical report are presented next. For example, some specifications recommend the use of data collected by biomedical or anthropometric measures, rather than data collected from self-reports; however, because data from measured sources are not as readily available, information from self-reports may be used on the second page to provide further insight about the indicator.

For Category 2 indicators, the presentation of information is less structured. Two pages for each indicator are used; however, the pages may only contain contextual information if data are unavailable. Category 2 also contains composite indicators (for example, incidence of key preventable cancers), so information is structured to show the most useful or interesting elements of that indicator in the space provided.

Why are some statistics in this report not as specified in the technical report?

There are a few reasons why some statistics presented in this report may be presented differently to what was specified in the *Technical report* (AIHW 2009a). The most common reason is the unavailability of data. For example, for most indicators, the suggested presentations for reporting may include age and sex, Indigenous status, remoteness and

socioeconomic status. However, when presenting the latest data, some of these specified variables may not be available from the recommended data sources.

In some cases, another source is used so that at least the story behind that data is told (even though the year may not be as recent as for the other statistics) or the methodology may be slightly different. At other times, another similar statistic may be reported (for example, household equivalent income instead of socioeconomic status or data based on self-reports rather than from actual measures). Other facts that may be relevant to the monitoring of chronic disease (for example, a burden of disease statistic) may also be used. Footnotes are provided to guide readers in all these situations.

Although not the main aim of this report, the structure of this report does lend itself to highlighting where data gaps exist, or where information might be considered not as useful as was initially intended. The KIP set is considered to be dynamic, and it is hoped that these information gaps and limitations will contribute to future development of the set.

Why is the main statistic different to those reported as a trend?

The main statistic presented for each indicator (as seen in the report cards on pages 17 and 39–41) is the proportion (or number, or rate) that describes that indicator in its truest form. For example, if the headline statistic for the proportion of adults who smoke daily (Indicator 1.6) is 17.5%, it is calculated by:

> Dividing the number of adults daily smoking in 2007 by the adult population in 2007, and then multiplying by 100.

This percentage is often referred to as the crude rate, and reflects the actual proportion of daily smokers (expressed as a percentage) in the adult population in 2007.

However, when analysing trends, data are often age standardised. This commonly-used method converts the different populations to the same age structure (a standard population), thereby removing any influence on the data of different age structures in the populations being compared. Usually, the Australian estimated resident population (ERP) at 30 June 2001 is used as the standard population. This makes the comparisons across the populations more valid. Sometimes, due to the structure of data files, using the 2001 ERP may not be possible, and other populations are used as the standard. In such cases, this is noted in footnotes to figures and tables.

When the same 2007 daily smoking data are age standardised, the percentage for 2007 is slightly different, at 17.7%. It is important to remember that age-standardised estimates are not the true statistics—they are a synthetic calculation and are presented for comparative purposes only.

So how are we going?

This section of the report discusses progress in the prevention of chronic disease, mainly by commenting on trends discovered while reporting against the indicators. Also covered in this section is commentary on why some trends are not able to be assessed, and what is needed to rectify this.

In general, it is difficult to assess the success or failure of the prevention of chronic disease accurately based on what is reported against the KIP set. It can also be difficult to unpack the indicators sufficiently to identify the drivers of change, or to measure their contribution to the change with any certainty. The chronic disease environment is complex, and it can be difficult to attribute changes in levels of chronic disease to any particular factor; often more research and analysis is required beyond the data reported by the indicators. Notwithstanding these caveats, the KIP set provides the opportunity to start monitoring chronic disease and associated determinants in a standardised way, and offers an insight into the health status of Australians regarding areas of current concern and aspects of prevention through monitoring determinants of health.

Mortality

Some areas appear easier to assess than others, largely due to the availability of consistent data collected over time. Looking across domains, it becomes clear that mortality (due to chronic disease) is where the most gains have occurred. The indicators for life expectancy (Indicator 1.8) and deaths from leading potentially preventable chronic diseases (Indicator 1.10) confirm this.

Deaths from cardiovascular disease and from respiratory illnesses (asthma and chronic obstructive pulmonary disease) are distinct areas where mortality rates have decreased in the last 10 years. It is still important to remember, however, that even though deaths from ischaemic heart disease and stroke are the main drivers behind these decreases, they still represent the two largest causes in deaths from leading chronic conditions (107.9 deaths per 100,000 and 54.4 deaths per 100,000, respectively). The question is, therefore, whether there is still room for improvement, and if so, how much of a decrease in deaths from these conditions is required before success can be claimed.

The figures for cancer deaths show a mixed picture, where decreases in deaths from lung, breast, prostate and bowel cancers have occurred; likely reasons for these decreases include a mix of better treatments, more screening and decreases in risk factors such as smoking. However, deaths from liver cancer (only 5.3 per 100,000 population) appear to be on the rise, most likely because of increases in incidence of liver cirrhosis and of hepatitis B and C.

The other causes of death for which rates are increasing are end-stage kidney disease (ESKD), Type 2 diabetes and dementia. The risk factors for dementia are largely unknown, and the rise in dementia deaths may be related to the growth in the elderly population. ESKD and Type 2 diabetes share the same risk factors of overweight and obesity, physical inactivity, poor diet, tobacco smoking and low birthweight. Tobacco smoking is the only risk factor from that group that has decreased over time, and low birthweight has remained stable. Inadequate trend data do not enable assessment of the indicators for the remaining

risk factors for ESKD and Type 2 diabetes. Worth noting, however, is that trends for overweight and obesity based on self-reported data (not recommended for the KIP set), do show increases in overweight and obesity. Once data become available from the 2011–13 Australian Health Survey, further insight should be available on nutrition, physical inactivity and measured body weight (see *Future directions* on page 14 of this report).

Chronic disease

Information about trends in chronic diseases themselves is not as clear as those for mortality, and much of the available data are not able to be assessed over time (for example, incidence of dementia, or prevalence of oral health problems, Type 2 diabetes and depression in both adults and young people). Some of this may change with data that will be collected by the Australian Health Survey (including results from blood analysis) or from continued analysis of combined data collections such as ANZDATA and the National Death Index (used in the calculation of incidence of ESKD).

Still, many of the chronic conditions that the KIP set covers are able to be reported on, and results show that they remain relatively unchanged over time. Psychological distress, arthritis, bowel and lung cancers, and melanomas are all examples of where incidence or prevalence rates for conditions have not changed.

Favourable trends are shown for the incidences of stomach and cervical cancers and hospital separations for minimal trauma hip fractures (largely due to osteoporosis); these have all reduced over time. Unfavourable trends are apparent for incidences of kidney, liver and prostate cancers. Readers should note the increase in prostate cancer incidence may reflect the increased use of screening tests for the disease. Where trends have shown favourable or stable results, readers should remember that for some conditions such as arthritis, actual numbers of people with the condition continue to increase as the population ages.

Determinants

Indicators for the determinants of chronic disease are a major component of this indicator set, as many of the conditions share the same risk factors, and changes in these determinants are considered important in the prevention of chronic disease. Establishing trends for the determinants in the KIP set is difficult and relies on the availability of ongoing, consistently collected national data.

Smoking is the only risk factor for which favourable trends are verified. For some other determinants, trends have remained stable (low birthweight, insufficient consumption of fruit by adults and risky alcohol intake). This in itself is not good news, as these data indicate that much improvement can be made in these areas. Even for smoking, a prevalence of 17.5% of daily smokers is far less ideal than the preferred no daily smokers.

No unfavourable trends in determinants were evident using the indicators as specified in the *Technical report* (AIHW 2009a), largely due to the unavailability of data to use for reporting. For example, trends for high blood pressure, high blood cholesterol, waist circumference and obesity were not able to be assessed using data that are based on measured sources (as specified). However, some indications are available about the direction of change for these determinants using self-reports—high blood pressure and cholesterol not changing over

time, overweight and obesity increasing over time. For some determinants, HbA1C and breastfeeding, data are simply not available to assess trends, or even to provide baseline statistics from which to monitor progress. However, for both these indicators, baseline statistics will be available after the Australian Health Survey and the Australian National Infant Feeding Survey (see *Future directions* on page 14). Generally, the issue of data availability will have to be addressed to ensure the future monitoring capabilities of the KIP set.

Health service use

Health services data required by the KIP set are generally available and enable assessment of trends to be undertaken. Favourable trends have been identified in the decrease of some potentially preventable hospitalisations—both hospitalisations for angina and asthma have reduced over time. For other conditions considered potentially preventable, trends for hospitalisations have remained stable over time.

Asthma action plans are another aspect of health service use measured by the KIP set, and trends for these also have remained stable; however, recent estimates highlight disparities between age groups. Although not directly measured by the KIP set, the differences between incidence rates and mortality rates for some cancers are also indicative of favourable outcomes in cancer detection and treatment services.

Populations

For many of the key indicators, disparities—that is, differences in the rates of disease or risk factor—are evident between population groups, for example, between Indigenous and non-Indigenous or between those who live in more urbanised areas of Australia compared with those who live more remotely. To measure any change at subpopulation levels, data must be collected consistently using adequate survey samples. This report highlights this issue when trying to compare chronic disease and risk factor data between the Indigenous and non-Indigenous population, where results from older data collections had to be used to report comparisons.

Disability

Although not enough data are available to assess trends in disability, they do show the increase of disability with age. Given the continued ageing of the Australian population, increasing levels of disability will affect the need for services and requirements for people with disabilities and those who care for them.

Contextual indicators

The trends for the contextual indicators for *Low income* and *Labour force status* remain relatively stable (Indicators C.1 and C.3). However, trends are not available for the two other contextual indicators. *Levels of health literacy* (Indicator C.2) need to be measured over time, and by population subgroups. The estimates used in this report (which provide a baseline)

indicate large disparities in health literacy between areas of residence—generally health literacy is better for those living in *Major cities*—and by language first spoken—those whose first spoken language was English do better. Health literacy may, in part, help explain differences in prevention outcomes and is, therefore, worth monitoring. While total health expenditure is able to be measured over time, the expenditure allocated for specific diseases is not (Indicator C.4). This too needs to be addressed as money spent on particular conditions may assist in explaining any change in those conditions in the future.

In summary, this indicator set goes a long way in describing the current state of leading chronic conditions, and provides insight into their determinants, their contribution to overall mortality and some aspects of health services that are related specifically to them. Updates for existing data will allow for better reporting and the measurement of progress in the prevention of chronic disease.

Future directions

Indicators for development

The *Technical report* highlighted two indicators for which substantial development and testing had to occur before they could be used as part of the KIP set. The two indicators were the Chronic Disease Risk Index (CDRI) and the Health Inequality Index (HII). Providing a place for them within the KIP set highlighted that a commitment to investigating their development was made by the Australian Population Health Development Principal Committee and the Population Health Information Development Group.

The AIHW has prepared a report, *Chronic Disease Risk Index: scoping study* (AIHW forthcoming), which discusses aspects of developing a CDRI. The report includes information about similar indices from a literature review, as well as discussion about possible statistical models that might be used in the construction of the index. The feasibility of such an index and recommendations for further investigation and testing on multiple data sets is also covered in the report. At the time of writing this report, the future directions for the CDRI were unknown; however, it is anticipated that testing of the statistical models will occur and results of these will input into further developmental activities.

Scoping work for the HII, similar to that undertaken for the CDRI, has been earmarked as a future activity for the AIHW. However, at the time of writing this report, no timeframes had been established for this.

For more information about these indices, readers should consult the *Technical report* (AIHW 2009a).

The KIP set in the future

In order for the KIP set to reach its full potential, the gaps that have been identified need to be addressed. The KIP set also requires continued development to remain useful to those who require data and to stay relevant to the current health environment. The AIHW recommends that a review of the set should be conducted after the AIHW has completed a data report using the Australian Health Survey 2011–13.

In the meantime, readers who would like to provide comments or suggestions about improvements to the KIP set can direct their comments to:

Chronic Disease Indicators Team
Population Health Unit
GPO Box 570
Canberra ACT 2601

Email: cdindicators@aihw.gov.au

New data sources

Australian Health Survey (AHS) 2011–13

The Australian Health Survey (AHS) will be conducted by the Australian Bureau of Statistics (ABS), beginning in 2011. This survey comprises the existing National Health Survey, the National Aboriginal and Torres Strait Islander Health Survey, and two new surveys—the National Nutrition and Physical Activity Survey and the National Health Measures Survey. The AHS will be the first survey since 1995 to obtain information about the nutritional status of Australians. Some of the aims of the AHS are to provide estimates of certain chronic diseases and determinants, and to enable monitoring and reporting against national food, nutrition and physical activity guidelines and recommendations.

Results from this survey will help fill the gaps in data for many indicators. These include information gathered using physical measures (for example, the taking of blood pressure) or through biomedical measures (such as blood samples). First findings from the AHS are expected to be published in late 2012.

Australian National Infant Feeding Survey (ANIFS)

The Australian National Infant Feeding Survey (ANIFS) will be undertaken by the AIHW in 2010 on a sample of 52,000 infants aged 0–24 months. The main aims of this survey are to collect and report on the prevalence and duration of breastfeeding, other foods and drinks consumed by infants and toddlers, and barriers to initiating and continuing breastfeeding. The survey will also collect information about parents'/guardians' experiences concerning early childhood feeding and the types of support that would be helpful to them in this area. The final report from this survey is expected to be released in mid-2011.

Emerging issues

The AIHW's work on chronic disease and determinants not only includes monitoring of chronic conditions that are of current interest or concern, but also the wider range of conditions that may be emerging as areas of concern in the future. Because of this, the KIP set reported against in this report may change with time to reflect monitoring requirements of health researchers, planners and policy makers.

Population ageing

The continued ageing of the population will result in further challenges with chronic disease. For example, if people are living longer, issues concerning maintaining good health, avoiding or managing degenerative diseases, and age-related disability may become more prominent; new indicators may be developed to measure these areas.

Change in the burden of chronic conditions

As medical technology and treatments improve, and new and better ones are developed, some chronic conditions may change or their impact on those who have them may reduce. For example, advances in many cancer treatments now mean that fewer people die from the disease, but continue to live with the consequences of the cures. Continued development of

treatments may see fewer side effects both during and after treatment. This may mean that indicators now focussed on mortality may be removed from the set and replaced with other measures about the same conditions, such as survival rates, quality of life measures or health service use.

Climate change

The effects of climate change on health, although still largely unknown, may be another reason to change the KIP set. Extremes in temperature and weather events may impact on mortality rates, health service use (hospital admissions), mental health and nutritional status (WHO 2003). Similarly, asthma and other allergies may be affected by rising levels of air pollution and changes to rainfall and temperature. Hence, measuring hospitalisations or pharmaceutical use may become more important.

Changes in determinants

This report presents information about the increase in certain determinants, for example, levels of obesity. Some of the outcomes from these increases can be predicted when the associations with obesity are well known, for example, such as with obesity and diabetes. However, for some chronic conditions, the changes may not become evident until much later; therefore, the indicators may need to be revised to accommodate other chronic conditions.

Physical inactivity is another area where research is continuing, and more information is becoming available about the benefits of physical activity and the risks associated with sedentary activity. As noted for Indicator 2.20, the effects of continued sitting are now the subject of research and this concept may be incorporated into the set in the future.

A domain not covered by the current indicator set is environmental indicators. Indicators that may be included in the future include:

- whether areas where people live and work are conducive to physical activity
- whether people have access to recreational areas
- whether workplaces support exercise breaks and physical activity.

Modern technology

Technology continues to progress rapidly and the effects of these developments on our health are still unknown. For example, current debate exists about whether the use of mobile phones causes adverse health effects, for example, headaches or an increased risk of cancer (Hocking 1998; Schoemaker et al. 2005).

Computers are now a part of everyday life and most households and workplaces have them. Potential health risks associated with computer use include eye and musculoskeletal problems, and researchers continue to collect evidence for or against this (AOA 2006–11; Jensen et al. 2002; Lassen et al. 2005). Computer use is also linked with sedentary activity and the associated emerging problems of continued sitting time. The KIP set does not currently contain any information about technology use, or the specific health problems that may result. This may need to be looked at in future versions of the set, if health problems due to technology emerge as a priority.

Category 1 indicators: results

Indicators in this category are considered to be 'spotlight' or high-impact in nature, and may be used for 'one-headline statistic' reporting, such as information boxes in newspapers or in information sidebars on web pages. This does not preclude these indicators being reported at more detailed levels. Readers are reminded that any rates below are not age standardised; therefore, the value may differ from the last value of a trend presented later in this report.

Most changes are described as 'favourable', 'unfavourable' or 'no change', depending on whether the change was in accordance with positive outcomes for chronic disease prevention.

Report card

KEY	✓ favourable	✗ unfavourable	~ no change	. . trend data unavailable or not clear

Indicator no. and name	Measure	Latest year(s)	Value[a]	Trend
Chronic disease				
1.1 Type 2 diabetes	The proportion of people who have Type 2 diabetes	1999–2000	7.1%	. .
1.2 Psychological distress in adults	The proportion of adults with a Kessler 10 (K10) score greater than or equal to 22	2001 to 2007–08	12.0%	~
1.3 Depression in adults	The proportion of adults who have depression	2007	12.6%	. .
Determinants				
1.4 Overweight and obesity in children	The proportion of children who are overweight or obese	2007–08	23.1%	. .
1.5 Overweight and obesity in adults	The proportion of adults who are overweight or obese	2007–08	61.2%	. .
1.6 Daily smoking	The proportion of people aged 18 years and over who smoke daily	2007	17.5%	✓
1.7 Low birthweight	Proportion of live births that were less than 2,500g birthweight	2007	6.2%	~
Mortality				
1.8 Life expectancy	Life expectancy at birth • Males • Females	2006–08	Years 79.2 83.7	 ✓ ✓
1.9 Gap in life expectancy between Indigenous and non-Indigenous	Gap in life expectancy between Indigenous and non-Indigenous • Males • Females	2005–07	Years 11.5 9.7	 . . . .
1.10 Deaths from leading potentially preventable chronic disease	The proportion of premature deaths due to leading preventable chronic diseases	2007	37.8%	✓
Health services				
1.11 Potentially avoidable hospitalisations—summary	The proportion of hospitalisations which are considered to be avoidable	2008–09	4.6 %	~

(a) This value is that of the last point in trend if a trend is reported. If there is no trend, the value relates to the year(s) specified in the table.

1.1 Type 2 diabetes

7.1%   The proportion of people who have Type 2 diabetes

Source: 1999–2000 Australian Diabetes, Obesity and Lifestyle study (AusDiab).

Rationale

Diabetes is a significant health, social and economic concern for individuals and the wider community and its prevalence is on the rise in Australia and across the world. It is a chronic condition that creates a significant burden for those who suffer from it and causes an increased chance of developing complications such as peripheral vascular disease, kidney disease, eye disease and coronary heart disease.

Monitoring how many people have Type 2 diabetes (as done by this indicator) helps with allocating resources, planning preventive and treatment services and targeting population groups for intervention. Changes in this indicator may enable the identification of the impact of all or any of these.

What the data show

The prevalence of Type 2 diabetes, based on measured data, was 7.1% in 1999–2000 in those aged 25 years or more (AIHW analysis of 1999–2000 AusDiab study). New prevalence data are expected to be available when results from the 2011 Australian Health Survey (see *Future directions* on page 14) are released.

Note: Based on blood glucose measurement.

Source: AIHW analysis of 1999–2000 Australian Diabetes, Obesity and Lifestyle (AusDiab) study.

Figure 1.1a: Prevalence of Type 2 diabetes in adults aged 25 years and over, 1999–2000
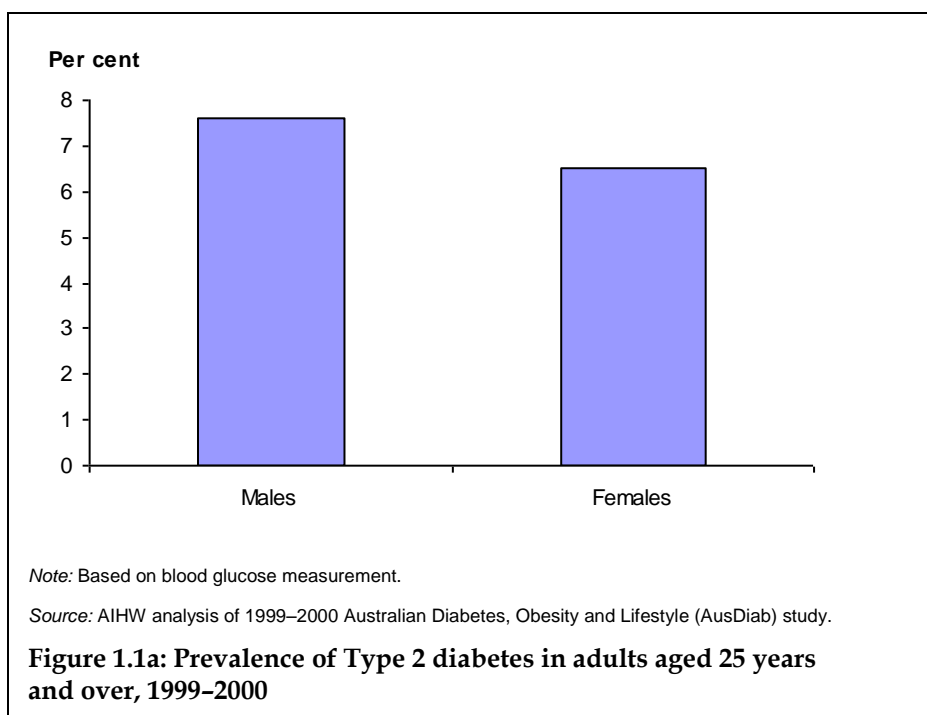
Although trend data information is not available using measured data, the Australian Bureau of Statistics (ABS) National Health Survey (NHS) series provides trends from self-reported data. The Australian Diabetes, Obesity and Lifestyle (AusDiab) study showed that for every person who knew they had diabetes, there was one other who did not know. It is therefore likely that the self-reported NHS data underestimate the true prevalence of diabetes by up to 50%; the 2001 NHS estimate of 3.5% was about half that of the 1999–2000 estimate of 7.1%. Given that a similar underestimate is likely to exist across all the NHSs, they do provide an indication of the increasing prevalence of diagnosed Type 2 diabetes in the adult population (Figure 1.1b).

Prevalence of self-reported Type 2 diabetes for Indigenous people is three times as high as for non-Indigenous people (Table 1.1). Prevalence also differs by socioeconomic status, with those living in the most disadvantaged areas having higher rates of Type 2 diabetes than those living in the least disadvantaged areas.

Note: Age-standardised to the Australian estimated resident population (ERP) as at 30 June 2001.

Source: AIHW analysis of the ABS NHSs.

Figure 1.1b: Trends in self-reported Type 2 diabetes prevalence for persons aged 25 years and over, 1995 to 2007–08
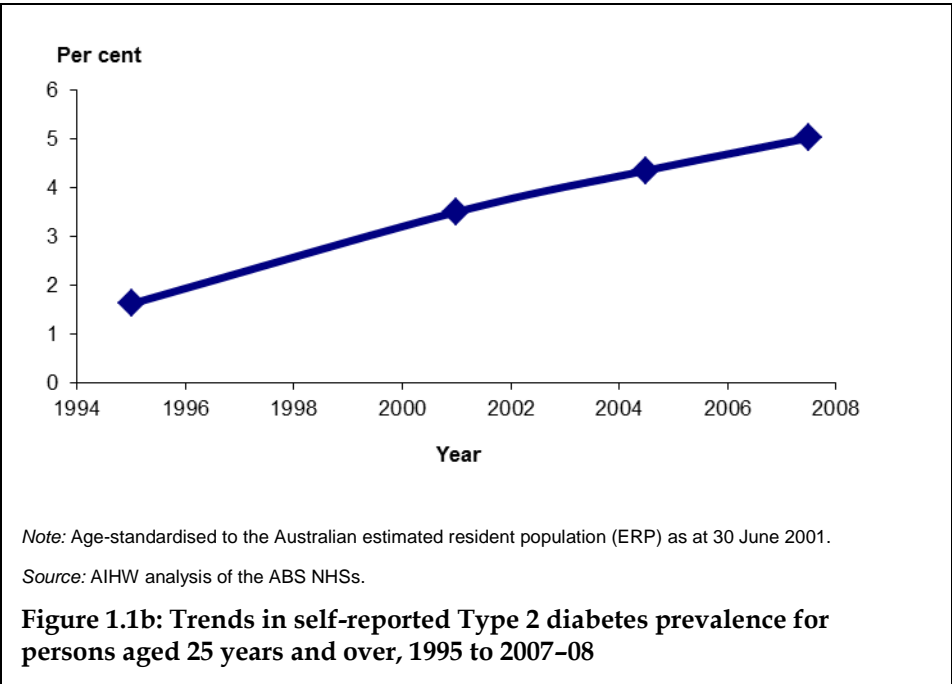
Table 1.1 Persons aged 25 years and over, prevalence of self-reported Type 2 diabetes by selected variables, per cent

Variable	Per cent	Variable	Per cent
Sex[a]		**Geographic region[c]**	
Males	6.2	Major city	5.1
Females	4.4	Other areas[d]	6.3
Indigenous status[b]		**Socioeconomic status[c]**	
Indigenous	12.0	1st quintile	7.8
Non-Indigenous	3.8	5th quintile	3.7

(a) *Source:* AIHW analysis of the 2007–08 NHS.

(b) *Source:* AIHW 2008b. Data relate to all diabetes/high sugar levels, and were sourced from the 2004–05 NATSIHS. They were age standardised to the Australian ERP as at 30 June 2001.

(c) AIHW analysis of the 2007–08 NHS. For information about socioeconomic status and geographic region, please refer to Appendix 1. Data were age standardised to the 2007–08 survey population.

(d) Includes *Outer regional* and *Remote* areas.

1.2 Psychological distress in adults

12.0%	**The proportion of adults with a Kessler 10 (K10) score greater than or equal to 22**

Source: 2007–08 ABS NHS.

Rationale

Psychological distress has a major effect on the ability of people to work, study and manage their daily activities. Research has revealed a strong association between high scores from the Kessler Psychological Distress Scale (Kessler 10 or K10) and a current Composite International Diagnostic Interview diagnosis of anxiety and affective disorders (ABS 2003). Very high levels of psychological distress (K10 scores of 22 or greater) are considered an indication of possible need for mental health services. More information about the K10 is in *Appendix 1*.

What the data show

Over time, little has changed in the proportions of adults with high or very high psychological stress (Figure 1.2a: inset). Age-specific rates show that the proportions of adults with high or very high psychological stress are different by age groups, with larger proportions of females reporting at each age group (Figure 1.2a).

Notes

1. Trend data (inset) are age standardised to the Australian ERP as at 30 June 2001.

2. High or very psychological distress is a K10 score greater than or equal to 22.

Source: AIHW analysis of the ABS NHSs.

Figure 1.2a. Age-specific and age-standardised prevalence of high/very high psychological distress in adults, 2007–08 and 2001 to 2007–08
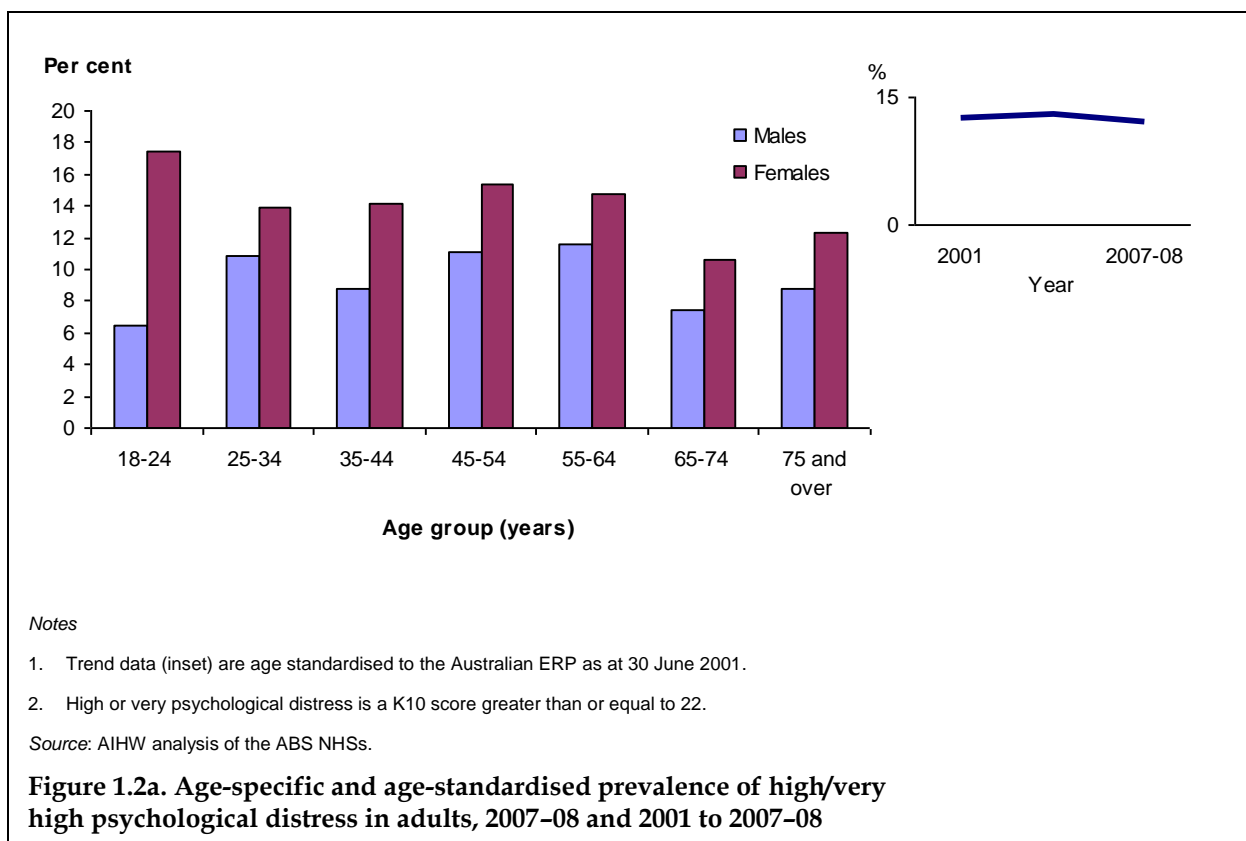
Psychological distress varies not only by sex, but also by where people live (Table 1.2). In 2007–08, smaller proportions of males living in *Major cities* reported high or very high levels of psychological distress, while the reverse was apparent for females. For both sexes, those living in the most disadvantages areas reported higher levels of psychological distress than those living in the least disadvantaged areas.

Table 1.2: Adults with very high psychological distress by selected variables, 2007–08 (per cent)

Variable	Males		Females	
Geographic area	Major city	Other areas[a]	Major city	Other areas[a]
	9.0	11.1	15.0	12.6
Socioeconomic status	1st quintile	5th quintile	1st quintile	5th quintile
	15.0	6.1	19.9	11.2

(a)   Includes *Outer regional* and *Remote* areas.

Note: For information about socioeconomic status and geographic region, please refer to Appendix 1. Data were age standardised to the 2007–08 survey population.

Source: AIHW analysis of the 2007–08 NHS.

The 2004–05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) used a reduced set of five questions of the 10 that comprise the K10. Therefore, there are no complete K10 comparable data available between Indigenous and non-Indigenous Australians. Figure 1.2b shows the proportions of Indigenous people against selected indicators of psychological distress by remoteness.

Note: Each indicator represents one question from the Kessler Psychological Distress Scale and shows the proportion of people who felt that way all, most or some of the time.

Source: ABS 2006a.

Figure 1.2b: Indigenous psychological distress by remoteness, 2004–05
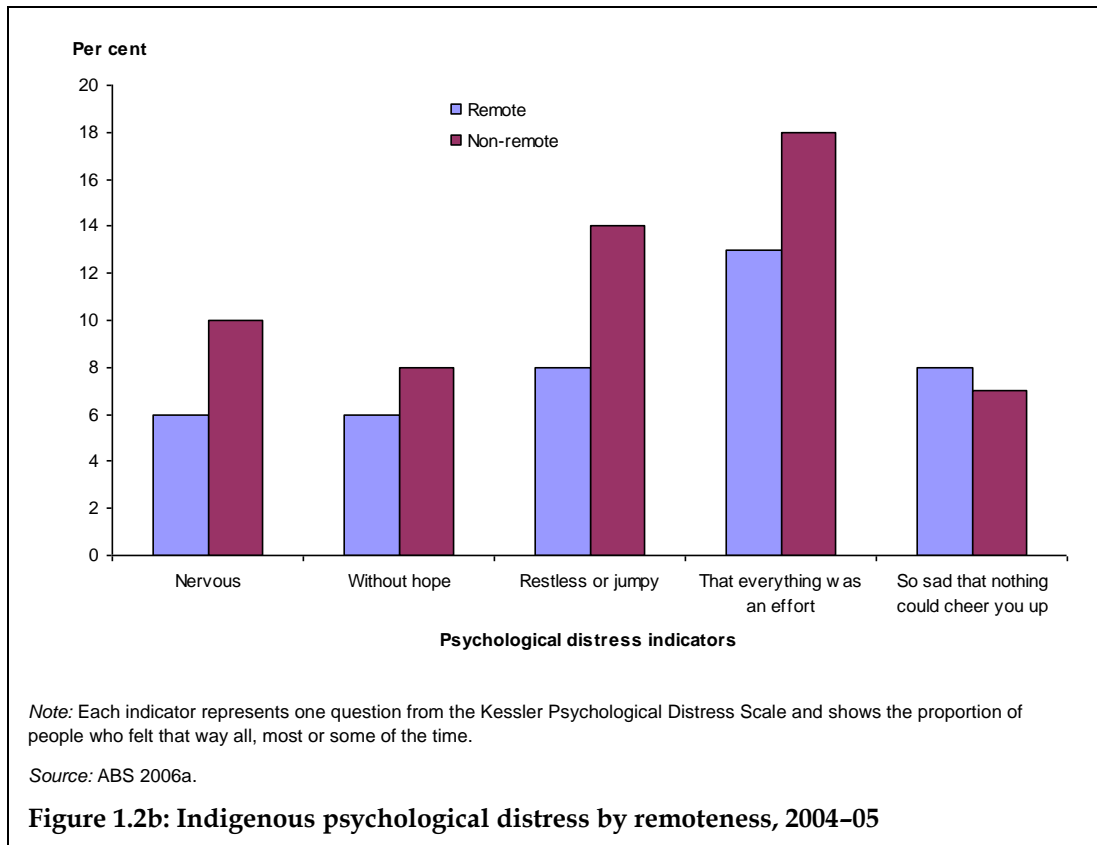
1.3 Depression in adults

12.6%   The proportion of adults who have depression

Source: 2007 ABS Survey of Mental Health and Wellbeing (SMHWB).

Rationale

Depression is a significant public health problem in Australia. Depression and its related problems (for example, disturbed sleep, loss of interest) can be chronic or recurrent, and may lead to substantial impairments in an individual's ability to take care of his or her everyday responsibilities.

The 2007 Survey of Mental Health and Wellbeing (SMHWB) estimated the prevalence of lifetime mental disorders and, for those who did experience a disorder at some stage in their life, the presence of any symptoms in the last 12 months before the interview (ABS 2008a). For the purposes of reporting against this indicator, the conditions *Depressive episodes* and *Dysthymia*, in the *Affective disorders* group, are used to estimate depression (see Appendix 1).

What the data show

In 2007, 12.6% of adults were categorised as having depression at least once in their life, and 7.3% reported that they had experienced symptoms of depression in the 12 months prior to interview (Figure 1.3a). Higher proportions of females reported depression than males, for both lifetime and symptoms in the last 12 months.

Source: AIHW analysis of the 2007 SMHWB.

Figure 1.3a: Adults who reported depression at least once during their lifetime, and symptoms in the last twelve months, 2007
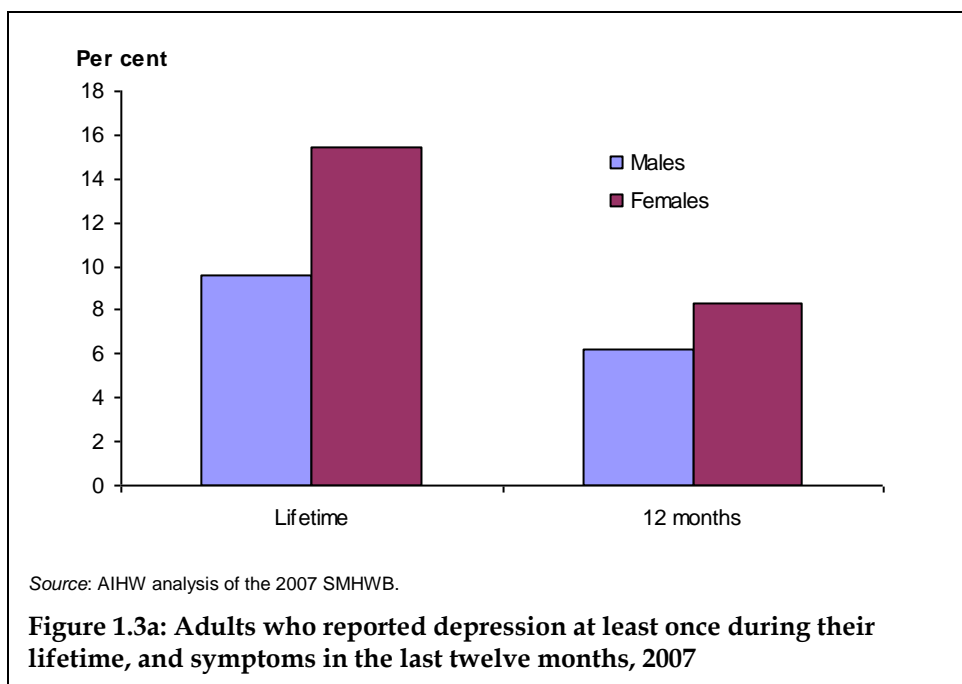
At all ages, higher proportions of depression (during their lifetime) were reported by females than by males. For males, the age group that reported the highest prevalence of lifetime depression were 45–54 years old (14.5%), whereas for females, both the 25–34 years and the 35–44 years age groups reported the highest rates (18% and 19%, respectively).

Note: The estimate for males aged 75–85 years has a relative standard error of 25% to 50% and should be used with caution.

Source: AIHW analysis of the 2007 SMHWB.

Figure 1.3b: Adults who experienced depression during their life by age group, 2007
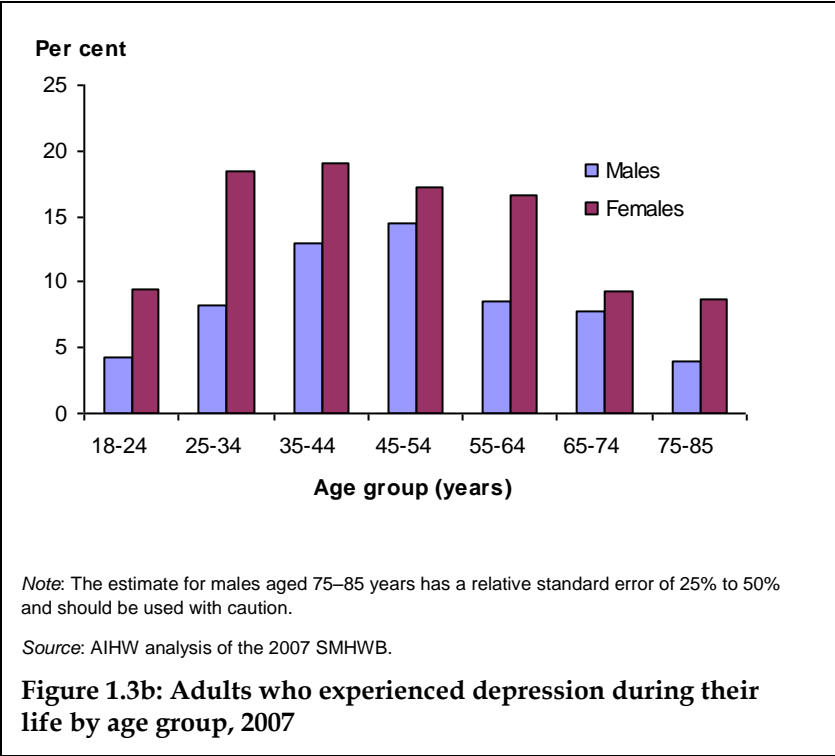
The prevalence of lifetime depression did not vary much between those living in *Major cities* and those living in *Outer regional*, *Remote* and *Very remote* areas (Table 1.3). The difference was also similar between those living in areas of least disadvantage areas and those living in areas of most disadvantage.

Table 1.3 Prevalence of depression (lifetime) by selected variables, 2007 (per cent)

Variable	Per cent
Geography	
Major city	12.4
Other areas[a]	13.6
Socioeconomic status	
1st quintile	13.1
5th quintile	12.0

(a) Excludes *Inner regional* areas.

Note: For information about socioeconomic status and geographic region, please refer to Appendix 1.

Source: AIHW analysis of the 2007 SMHWB.

1.4 Overweight and obesity in children

PI 5

23.1% The proportion of children who are overweight or obese

Source: 2007–08 ABS National Health Survey (NHS).

Rationale

Children who are overweight or obese can experience health and psychological problems, and are also more likely to be overweight or obese in adulthood. Current levels of childhood obesity are of concern, and have become a major government focus. Recently, the National Preventative Health Taskforce presented a number of recommendations to address this issue, mainly focussing on nutrition and physical activity (NHPT 2009). This indicator aims to provide a measure of the proportions of overweight or obese children in Australia. For the purpose of this report, children are defined as those aged less than 18 years.

The recommendations for this indicator specify the 2007 Australian National Children's Nutrition and Physical Activity Survey (ANCNPAS) as the primary data source (AIHW 2009a). However, at the time of writing this report, a final data file for analysis was not available; therefore, estimates from the 2007 National Health Survey are used. Children in this report are defined as those aged less than 18 years. The specifications for this indicator note that data be reported for those aged 2–14 years; however, due to availability of data, statistics are presented for those aged five years and over and, for comparisons with 1995 (Figure 1.4), data are for those aged up to 17 years.

What the data show

In 2007–08, 23% of children aged 5–14 years were overweight or obese. The proportion of overweight or obese children increased with age from 21% in those aged 5–9 years, to 25% in those aged 10–14 years, and 30% in those aged 15–17 years.

Table 1.4a: Proportion of overweight and obese children by age group, 2007–08 (per cent)

	Males			Females		
	5–9	10–14	15–17	5–9	10–14	15–17
Overweight	14.5	17.8	16.2	14.6	19.7	22.0
Obese	6.4	8.6	15.1	7.0	3.3	7.4

Note: Excludes records for those children whose height or weight was not measured.

Source: AIHW analysis of the 2007–08 NHS.

Although data are not available to confirm trends in excess body weight, when compared to estimates from 1995, an increase of 4 percentage points is evident (Figure 1.4). The increase in excess weight is slightly more in male children—from 20.5% in 1995 to 25.8% in 2007–08, compared with the increase in females, 21.1% in 1995 to 24% in 2007–08.

Figure 1.4: Children aged 5–17 years by levels of excess weight, 2007–08
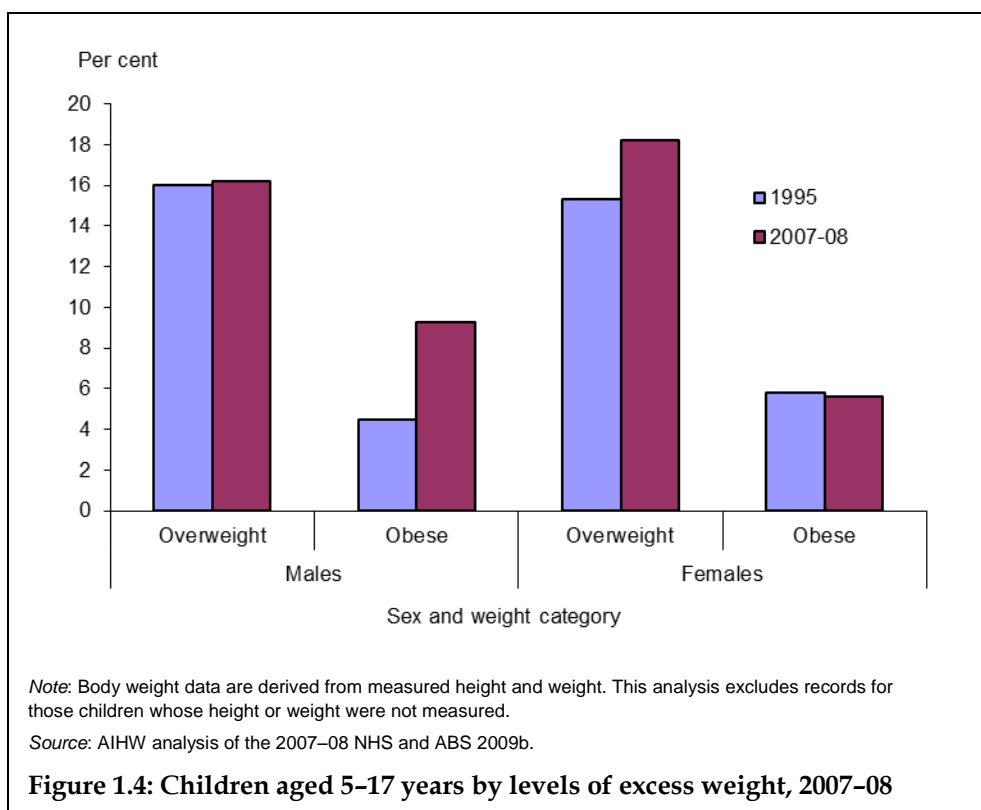
When comparing published results from the 2007 ANCNPAS with results from the 2007–08 NHS, the levels of overweight and obesity in female children are similar; however, levels of overweight and obese male children are lower in the ANCNPAS (Table 1.4a). Despite differences between the two surveys, their results both indicate that about one-quarter of Australian children are overweight or obese.

Table 1.4b: Children aged 2–16 years by levels of excess weight by age group, 2007 (per cent)

	Boys						Girls				
	2–3	4–8	9–13	14–16	2–16		2–3	4–8	9–13	14–16	2–16
Overweight	17	13	18	19	17		14	15	23	16	18
Obese	4	5	7	6	5		4	6	7	7	6

Note: Body weight data are derived from measured height and weight.

Source: CSIRO & University of South Australia 2008.

Table 1.4c: Overweight and obese children aged 5–17 years, by selected variables, 2007–08 (per cent)

Variable	Per cent
Geography	
Major city	22.8
Other areas[a]	27.6
Socioeconomic status	
1st quintile	32.4
5th quintile	18.0

(a) Excludes *Inner regional* areas.

Note: For information about socioeconomic status and geographic region, please refer to Appendix 1. This analysis excludes records for children whose height or weight was not measured.

Source: AIHW analysis of the 2007–08 NHS.

1.5 Overweight and obesity in adults

PI 5

61.2%   The proportion of adults who are overweight or obese
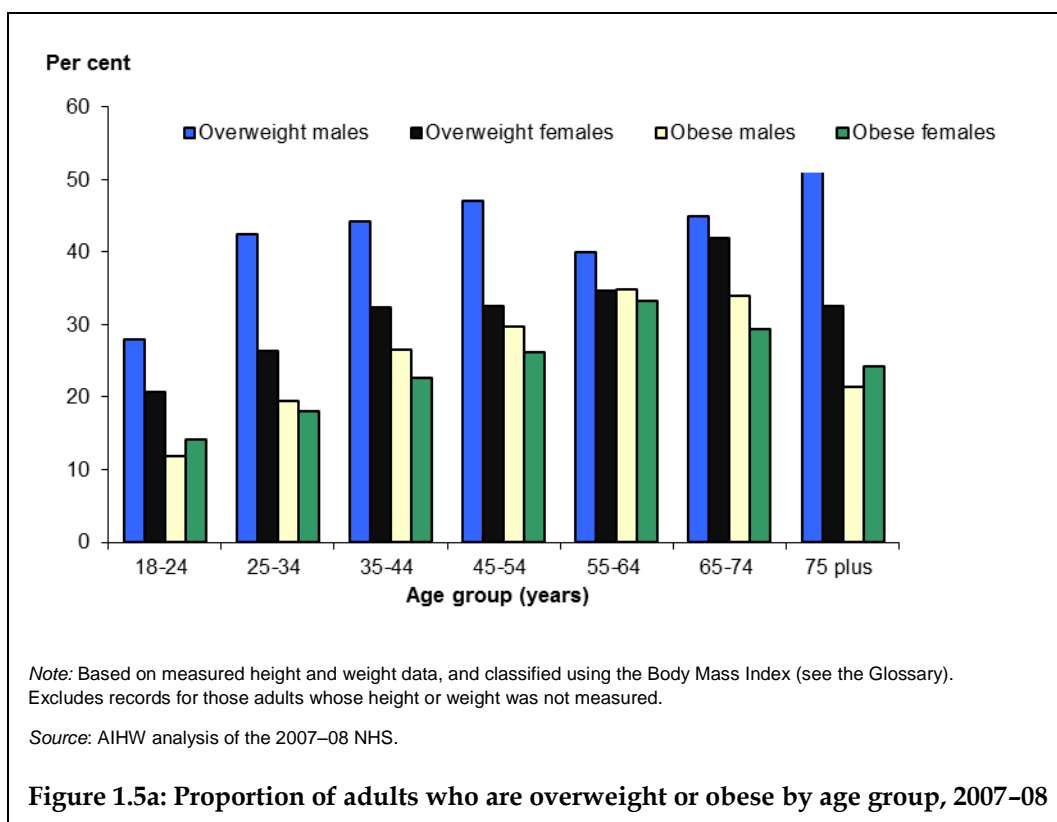
Source: 2007–08 National Health Survey (NHS).

Rationale

This indicator measures excess body weight, which can contribute to many chronic diseases. Adults who are overweight or obese have an increased risk of developing chronic conditions (for example, Type 2 diabetes and cardiovascular disease). Being overweight can also affect an individual's ability to manage their chronic conditions (for example, Type 2 diabetes and arthritis).

What the data show

In 2007–08, almost two-thirds of Australian adults were either overweight or obese. Similar proportions of males and females were obese (26% and 24%, respectively); however, a larger proportion of males were classified as overweight than females (42% compared with 31%).

Note: Based on measured height and weight data, and classified using the Body Mass Index (see the Glossary). Excludes records for those adults whose height or weight was not measured.

Source: AIHW analysis of the 2007–08 NHS.

Figure 1.5a: Proportion of adults who are overweight or obese by age group, 2007–08

Although there are not enough comparable time points using data from measured height and weight to establish a trend (as per the criteria defined for this report), comparable results from 1995 (1995 National Nutrition Survey) indicate that the proportion of adults who have excess body weight has increased from 56% to 61%; this is further substantiated by the increases in estimates derived from data based on self-reports (see below).

It is well known that body mass data derived from self-reports provides an under-estimate when compared with body mass data from measured sources (ABS 1998). However, data from self-reports are more readily available, come from many sources (AIHW 2010g) and from multiple points in time. The ABS NHS series has collected self-report height and weight data since 1995; those results show an increase over time in adults who are either overweight or obese (Figure 1.5b).

Notes: Estimates are age standardised to the Australian ERP as at 30 June 2001.

Source: AIHW analysis of the NHS series.

Figure 1.5b: Trend in adults who are classified as overweight or obese, 1995 to 2007–08
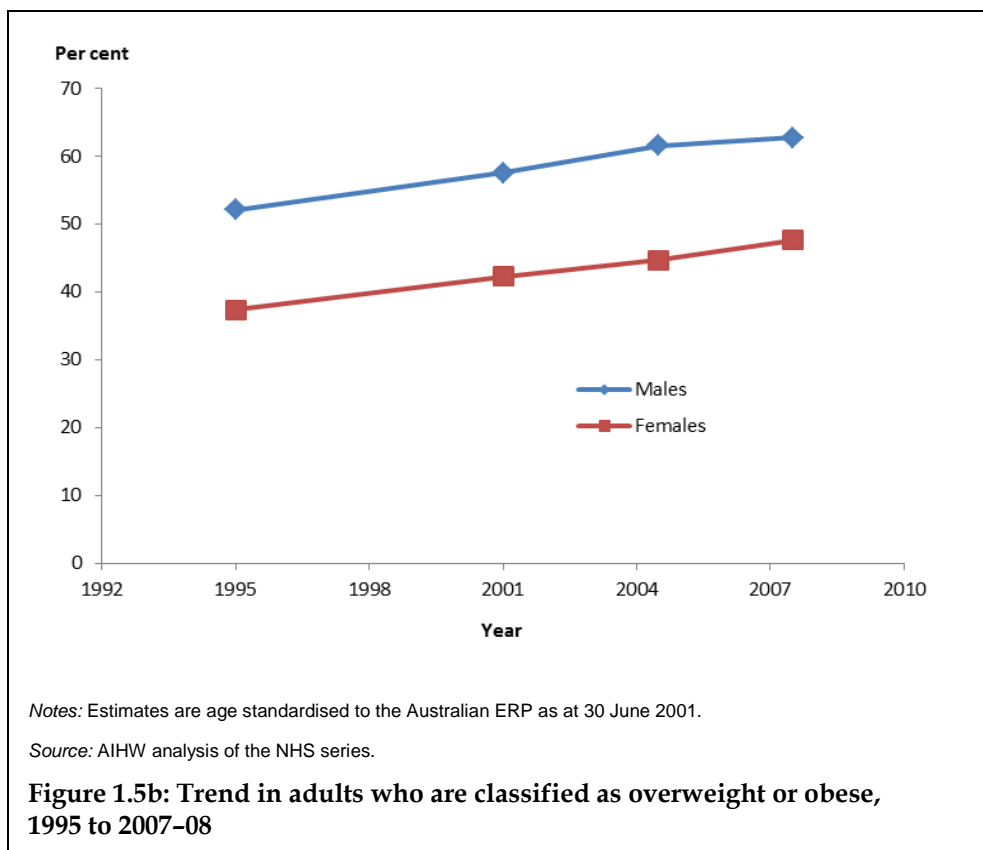
Table 1.5: Prevalence of overweight or obesity in adults by selected variables (per cent)

Variable	Per cent
Indigenous people[a]	
Males	66
Females	62
Geography[b]	
Major city	58
Other areas[c]	66
Socioeconomic status[b]	
1st quintile	66
5th quintile	56

(a) Data were sourced from the 2004–05 NATSIHS and were
   age standardised to the Australian ERP as at 30 June 2001 (AIHW 2008b).

(b) *Source:* AIHW analysis of the 2007–08 NHS. Data were age standardised to the
   2007–08 survey population. For information about socioeconomic status and
   geographic regions, please refer to Appendix 1.

Note: Other areas exclude *Inner regional* areas.

1.6 Daily smoking

17.5% The proportion of people aged 18 years and over who smoke daily

Source: National Drug Strategy Household Survey (NDSHS).

Rationale

Tobacco smoking is the single most preventable cause of ill health and death in Australia. Although reductions in smoking have occurred over time, many people still continue to smoke regularly. Smoking contributes to hospitalisations, death and many chronic diseases.

What the data show

Since 1991, daily smoking has reduced for both males and females (Figure 1.6a). In 1991, 27% of adult males smoked daily and this proportion has reduced to 19% in 2007. Similarly, for females, 22% smoked on a daily basis in 1991 and this has reduced to 16% in 2007.

Notes

1. Data for 1993 refer to people aged 20 years and over.

2. Estimates are age standardised to the Australian ERP as at 30 June 2001.

Source: NDSHS series.

Figure 1.6a: Adults who smoke daily, 1991–2007
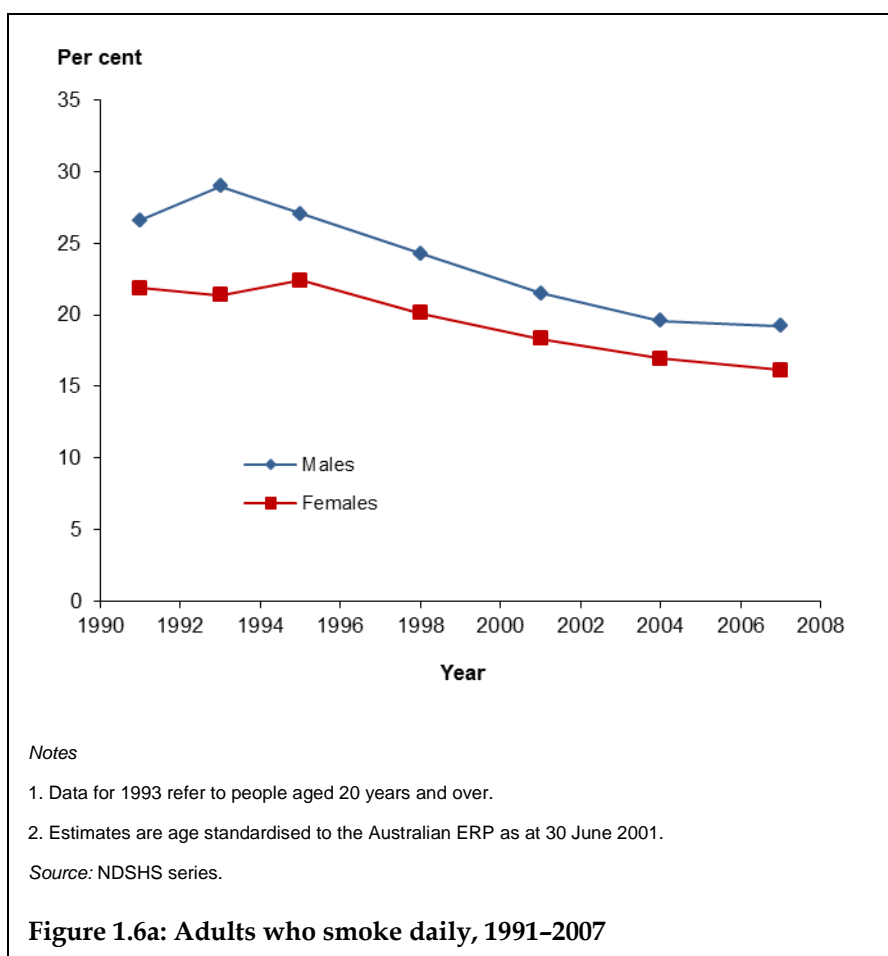
For both males and females, daily smoking is more prevalent in the 25–34 year age group (24%) and least prevalent in the 65 years and over age group (8%) (Figure 1.6b). At all ages, higher proportions of males than females smoke daily.

Source: AIHW analysis of the 2007 NDSHS.

Figure 1.6b: Adults who smoke daily, by age group and sex, 2007
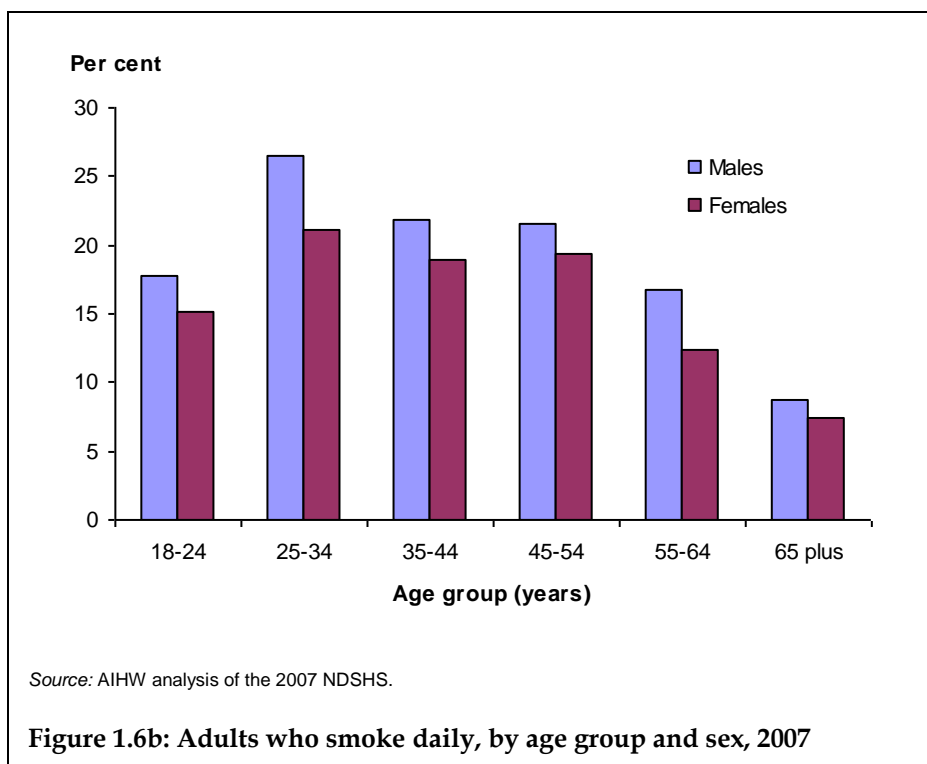
The proportion of adults who smoke daily differs by Indigenous status and by where people live (Table 1.6). Indigenous adults are more likely to smoke on a daily basis than other Australian adults. People who live in the more remote areas of Australia or who live in the most disadvantaged areas are more likely to smoke compared with people who live in *Major cities* or in lesser disadvantaged areas.

Table 1.6: Adults who smoke daily by selected variables, 2007 (per cent)

Variable	Per cent
Indigenous status(a)	
Indigenous	48.0
Other Australians	24.0
Geography	
Major city	15.5
Remote and very remote	25.1
Socioeconomic status(a)	
1st quintile	25.2
5th quintile	10.6

(a) *Source*: Data were sourced from the 2004–05 NATSIHS and were age standardised to the Australian ERP as at 30 June 2001 (AIHW 2008b).

Note: For information about socioeconomic status and geographic region, please refer to Appendix 1.

Source: AIHW analysis of the 2007 NDSHS.

1.7 Low birthweight
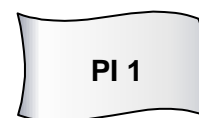
6.2%   The proportion of live births less than 2,500g birthweight

Source: National Perinatal Data Collection.

Rationale

Birthweight is a key indicator of infant health. Low birthweight increases the risk of ill health and death for a baby, as well as increasing the likelihood of il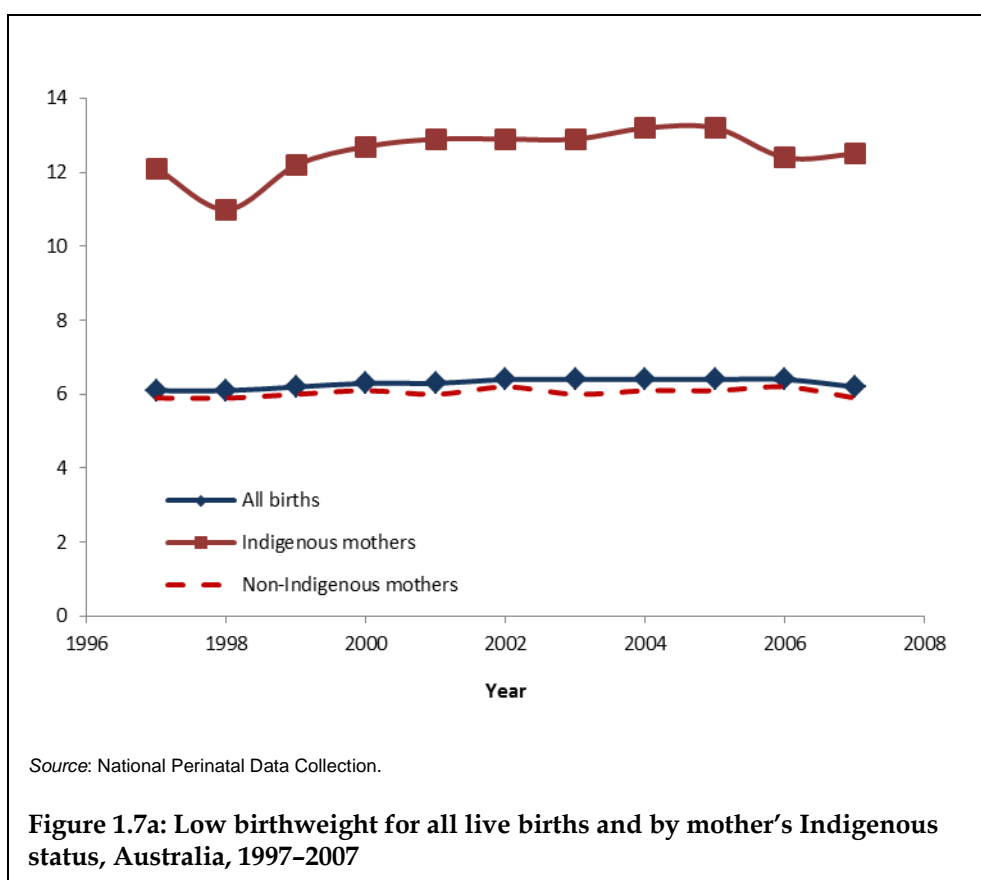l health during childhood and adulthood. Factors that may contribute to low birthweight include prematurity, size of parents, birth defects and determinants associated with the mother, such as nutritional status or the mother's tobacco and alcohol intake during the pregnancy (Laws & Sullivan 2009).

Smoking during pregnancy is discussed for Indicator 2.14.

What the data show

In 2007, almost 18,000 (6.2%) live born babies weighed less than 2,500 grams; of those, about 3,000 weighed less than 1,500 grams, which is defined as very low birthweight (Laws & Sullivan 2009). Rates for low birthweight have remained stable over the decade, varying between 6.1% and 6.4% (Table 1.7a).

Source: National Perinatal Data Collection.

Figure 1.7a: Low birthweight for all live births and by mother's Indigenous status, Australia, 1997–2007

Rates for low birthweight for babies born to Indigenous mothers also remained relatively stable over time (between 11% and 13.2%); however, they were about 6.5 percentage points higher, on average, than among non-Indigenous mothers.

Over half of multiple births have low birthweights compared to singleton births; again, these rates have remained stable over time—51.3% in 1997 and 50.7% in 2007. Mothers in the younger age group (less than 20 years) and the older age group (40 years and over) are more likely to have babies that are low birthweight than mothers in other age groups (Figure 1.7b).

Per cent of all live births

Source: National Perinatal Data Collection.

Figure 1.7b: Low birthweight by age of mother, 2007
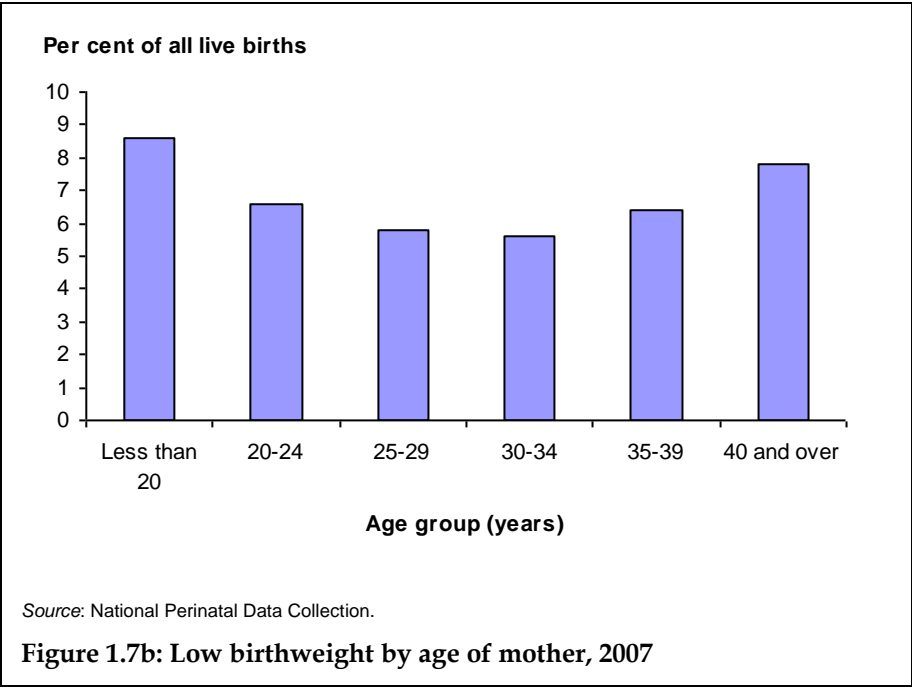
Low birthweight is related to where the mothers lived at the time of the birth. Higher proportions of babies born to mothers living in more disadvantaged areas or in *Very remote* areas of Australia were of low birthweight, compared to those of mothers living in less disadvantaged areas or in *Major cities* (Table 1.7).

Table 1.7: Birthweight by other selected variables, 2007 (per cent of all live births)

Variable	Per cent of all live births
Geographic area	
Major city	5.9
Very remote	10.5
Socioeconomic status	
1st quintile	7.2
5th quintile	5.1

Note: For information about socioeconomic status and geographic region, please refer to Appendix 1.

Source: National Perinatal Data Collection.

1.8 and 1.9 Life expectancy and the gap in life expectancy between Indigenous and non-Indigenous Australians

79.2 years for males **83.7** years for females	**Life expectancy at birth**
11.5 years for males **9.7** years for females	**Gap in life expectancy between Indigenous and non-Indigenous Australians**

Source: ABS 2009a.

Rationale

Life expectancy is a well-known summary measure of mortality and can be used for comparisons across time and between countries or population groups. It represents the average number of years a person can expect to live (from a particular point in time) if the existing mortality patterns prevail over that person's lifetime.

Indigenous Australians have a shorter life expectancy than non-Indigenous Australians. In 2008, the Australian Government committed to closing the gap in life expectancy within a generation.

What the data show

Life expectancy (at birth) for all Australians continues to increase over time; however, the increases in the last decade were not as marked as those seen earlier in the 20th century (AIHW 2006a). Latest estimates for life expectancy are for the years 2006–08, and show that a male baby is expected to live until 79.2 years (an increase of 3.5 years since 1995–07) and a female baby until 83.7 years of age (an increase of 2.3 years since 1995–07) (Figure 1.8).

When analysed by remoteness, life expectancy for those living in *Major cities* is longer than for those living in *Outer regional* and *Remote* areas of Australia (Table 1.8).

Latest estimates for Indigenous people are for the years 2005–07. They show that life expectancy at birth for males is 67.2 years, while for females it is 72.9 years (ABS 2009a). This means there is a gap between Indigenous and non-Indigenous people of 11.5 years for males and 9.7 years for females, when both measures are taken at 2005–07.

Mortality data, from which Indigenous deaths are analysed, are only available for four Australian states and territories; the data show that life expectancy for Indigenous and non-Indigenous differs by states and territories, as does the gap between them (Table 1.9).
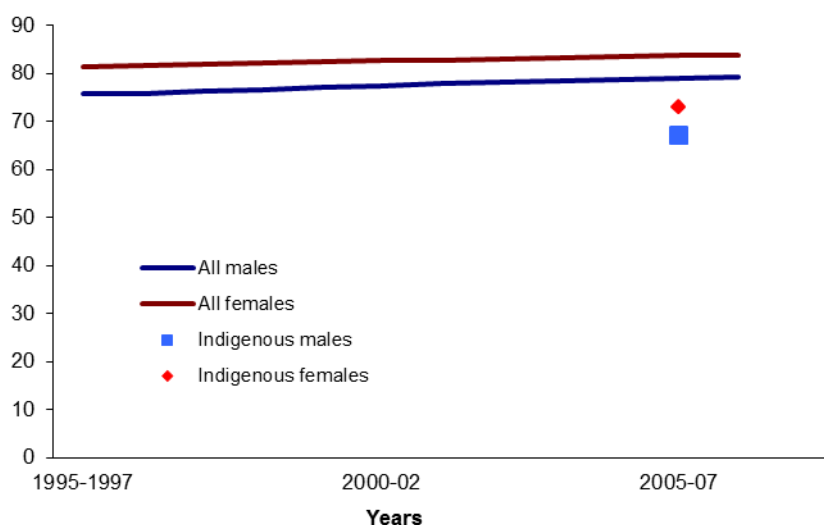
Figure 1.8: Life expectancy at birth, 1995–97 to 2006–08, and 2005–07 for Indigenous Australians

Table 1.8: Life expectancy at 0–4 years by geographic area, 2007

Variable	Males	Females
Major city	80.3 years	84.8 years
Other regional	76.6 years	81.9 years

Notes
1. 0–4 years was used in the calculations of life expectancy as populations for persons aged 0 years are unavailable by remoteness.
2. Other regional includes *Outer regional*, *Remote* and *Very remote* areas of Australia.
3. For information geographic regions, please refer to Appendix 1.
Source: AIHW National Mortality Database.

Table 1.9: Life expectancy at birth by Indigenous status, 2005–07 (years)

	Indigenous	Non-Indigenous	Difference
Males			
NSW	69.9	78.7	8.8
Qld	68.3	78.6	10.4
WA	65.0	79.0	14.0
NT	61.5	75.7	14.2
Australia[a]	67.2	78.7	11.5
Females			
NSW	75.0	82.5	7.5
Qld	73.6	82.5	8.9
WA	70.4	82.9	12.5
NT	69.2	81.2	11.9
Australia[a]	72.9	82.6	9.7

Note: Estimate for Australia includes all states and territories.
Source: ABS 2009a.

1.10 Deaths from leading potentially preventable chronic diseases

37.8% **The proportion of premature deaths due to leading preventable chronic disease**

Source: AIHW Mortality Database.

Rationale

This indicator describes the contribution of chronic disease deaths to all premature deaths in Australia. It is one of five composite indicators in the set. The indicator relates to total deaths that occurred among persons aged less than 75 years, for which the main cause of death (the underlying cause) was one of the following: ischaemic heart disease (IHD), lung cancer, stroke (cerebrovascular disease), breast cancer, bowel cancer, chronic obstructive pulmonary disease (COPD), dementia, prostate cancer or Type 2 diabetes. Readers wanting to draw out the various components of this indicator are encouraged to refer to the information about Indicator 2.21 (page 80), where mortality data for individual conditions are presented.

The prevention of deaths from these conditions relates to:
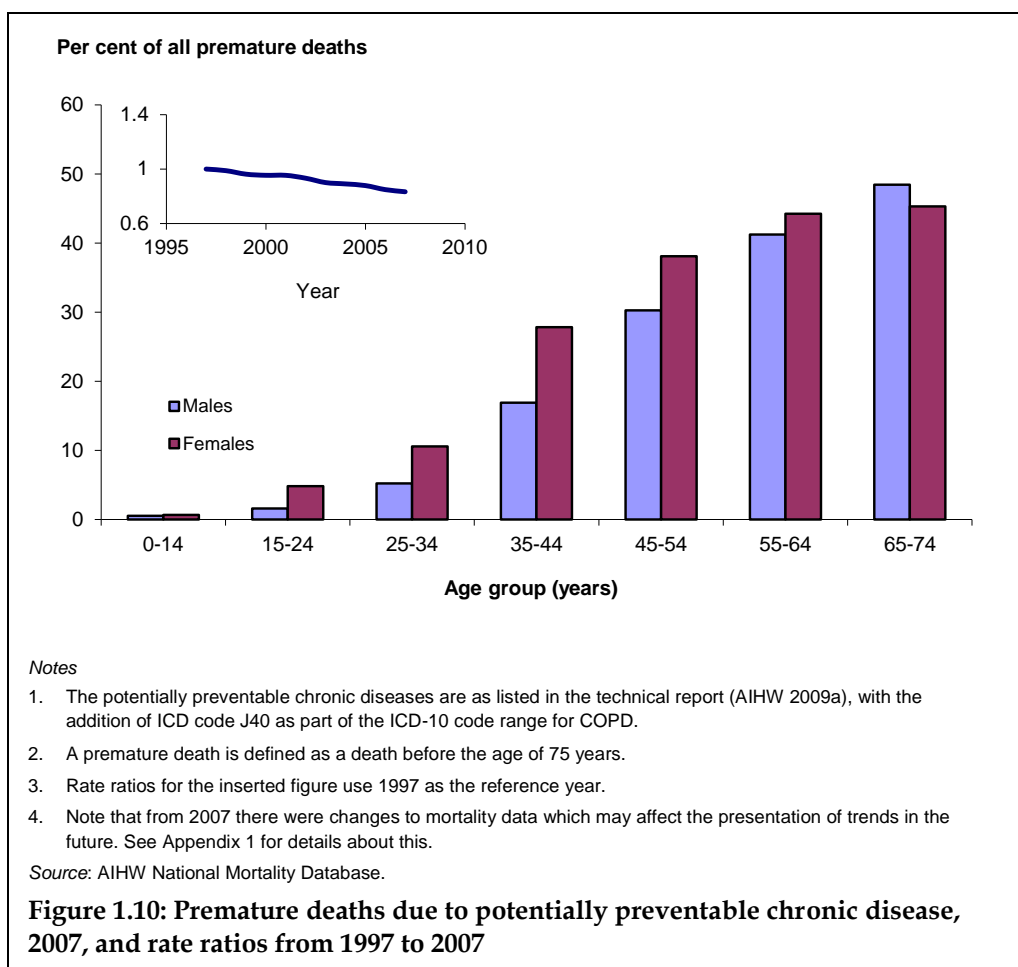
- prevention through lifestyle behaviours, such as quitting smoking, where the onset of disease is prevented
- screening practices such as mammograms, where early detection maximises the treatment options, thereby preventing death, and
- combinations of the two, for example, in the case of bowel cancer where opportunities for prevention may occur through lifestyle behaviours and/or screening.

For many of these conditions, improvements in medical therapies and care no longer mean that death is the most likely outcome. However, the continued management of the conditions means that the diseases are more chronic in nature (that is, last for six months or more) than in the past (for example, dementia or ongoing treatment for certain cancers). The list of conditions included in this indicator is by no means complete or permanent. As advances in medicine continue, some conditions may no longer be considered chronic, while other conditions with a chronic nature may emerge. It is expected that the components of this indicator may change over time.

Premature death is defined in this report as death before the age of 75; however, with continued advances in life expectancy, there may be a case to increase this age in the future.

What the data show

In 2007, there were over 18,000 deaths from leading potentially preventable chronic diseases (37.8%). Rates for males and females were similar (37% and 39%, respectively) and, for both males and females, proportions of deaths from chronic diseases increased with age, from less than one per cent in those aged less than 14 years to more than 40% in those aged 65 to 74 years (Figure 1.10).

Per cent of all premature deaths

Notes

1. The potentially preventable chronic diseases are as listed in the technical report (AIHW 2009a), with the addition of ICD code J40 as part of the ICD-10 code range for COPD.

2. A premature death is defined as a death before the age of 75 years.

3. Rate ratios for the inserted figure use 1997 as the reference year.

4. Note that from 2007 there were changes to mortality data which may affect the presentation of trends in the future. See Appendix 1 for details about this.

Source: AIHW National Mortality Database.

Figure 1.10: Premature deaths due to potentially preventable chronic disease, 2007, and rate ratios from 1997 to 2007

Using 1997 as the reference year, premature deaths from chronic disease have decreased overtime. In 2007, a person was 17 per cent less like to die prematurely from a chronic disease than in 1997 (Figure 1.10: inset).

Of all premature deaths, higher rates due to chronic disease were recorded for non-Indigenous and those living in major cities (Table 1.10).

Table 1.10: Premature deaths from leading preventable chronic diseases by selected variables, 2007 (per cent)

Variable	Per cent
Indigenous status[a][b]	
Indigenous	30.6
Non-Indigenous	39.8
Geography	
Major cities	37.8
Remote and very remote	33.4
Socioeconomic status	
1st quintile	37.7
5th quintile	37.2

(a) Only data for the following jurisdictions were used: Queensland, South Australia, Western Australia and Northern Territory. Those records where Indigenous status was not known were not included.

(b) Death by Indigenous status are for the years 2003–07.

Note: For information about socioeconomic status and geographic region, please refer to Appendix 1.

Source: AIHW analysis of the AIHW National Mortality Database.

1.11 Potentially preventable hospitalisations: summary

4.6%	The proportion of hospitalisations which are considered to be preventable

*Source:* AIHW 2010d.

Rationale

This indicator describes the contribution of hospitalisations for chronic disease that are considered potentially avoidable. It is used as an indicator of the adequacy, efficiency and quality of primary care within the broader health system. Like Indicator 1.10, this indicator is one of five composite indicators in this set, and comprises of a number of reasons for hospitalisation. A comprehensive list of ICD-10-AM codes used in the derivation of preventable hospitalisation can be found in Appendix 1. To further draw out details of the individual chronic conditions contributing to the statistics presented under this indicator, readers are encouraged to refer to Indicator 2.24 on page 86 of this report.

Potentially preventable hospitalisations are defined as those conditions where the hospitalisation is thought to be avoidable if timely and adequate non-hospital care is provided elsewhere (AIHW 2010d). In the *Technical report* (AIHW 2009a), these were referred to as 'avoidable', but the name of the indicator has changed to align with the National Healthcare Agreement indicators. Care should be taken when interpreting these data, as a change in the indicator could indicate a number of things, for example, the increased prevalence of a condition in the community, poorer functioning of the non-hospital care system or changes in the ICD-10-AM classification or clinical coding standards. As with other chronic conditions, the list of conditions that contribute to potentially preventable hospitalisations may change over time.

What the data show

Over time, the proportion of all potentially preventable hospitalisations remained reasonably stable (Figure 1.11). A very small decrease is noted in the last year of the series, mostly due to decreases in the number of hospitalisations for chronic conditions. The decrease in chronic conditions was probably due to the introduction of changes in clinical coding rules in June 2008, to ensure that additional diagnoses were only coded where they had an impact on the care given to admitted patients. This coding rule had a substantial impact on the coding of diabetes complications in particular.
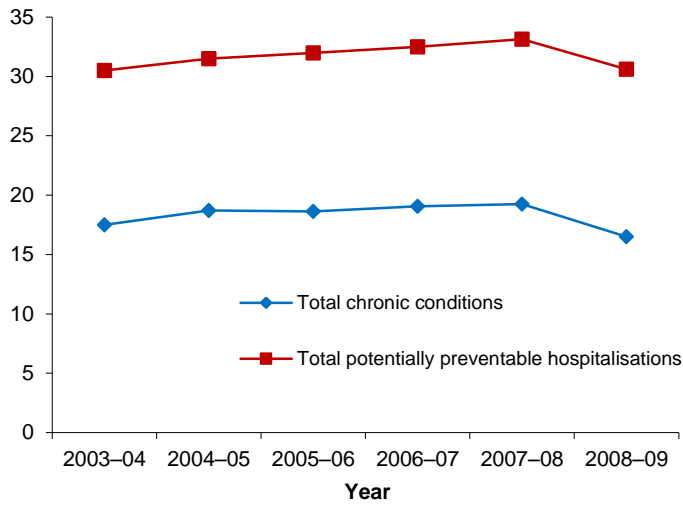
Notes

1. Separations for which the care type was reported as *Newborn with no qualified days* and records for *Hospital boarders* and *Posthumous organ procurement* have been excluded.

2. Excludes multiple diagnoses for the same separation within the same group.

Source: AIHW *Australian hospital statistics* series.

Figure 1.11: Potentially preventable hospitalisations, 2003–04 to 2008–09

Table 1.11: Potentially preventable hospitalisations due to chronic disease by selected variables, 2008–09

Variable	Separations per 1,000 population for 2008–09
Geography	
Major city	15.0
Very remote	37.5
Socioeconomic status	
1st quintile	22.2
5th quintile	10.8
	Separations per 1,000 population for 2007–08[(a)]
Indigenous status	
Indigenous	106.3
Other Australians	9.7

(a) Estimates for *Indigenous* and *Other Australians* do not include data for the ACT or Tasmania.

Source: For estimates by geographic area and socioeconomic status, see AIHW 2010d. For estimates by Indigenous status, see COAG 2010.

Note: For information about socioeconomic status and geographic region, please refer to Appendix 1.

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Category 2 indicators: results

The 25 indicators in this category provide further insight into the information presented by the indicators in Category 1. Unlike the Category 1 indicators, they do not have a 'headline' statistic, but as suggested in the *Technical report* (AIHW 2009a), they do have recommended presentations for reporting. Some of the indicators in Category 2 are composite indicators, that is, they comprise more than one component. For example, *Indicator 2.1: Incidence of key preventable cancers* is a cumulative rate from a number of selected cancers, to be presented as a total and by individual cancer. The presentation of data for indicators in Category 2 will change to suit each situation. Readers are reminded that any rates below are not age standardised.

Most changes are described as 'favourable', 'unfavourable' or 'no change', depending on whether the change was in accordance with positive outcomes for chronic disease prevention.

Report card

KEY	✓ favourable	✗ unfavourable	~ no change	. . trend data unavailable or not clear

Indicator no. and name	Measure	Latest year(s)	Value[a]	Trend
Chronic disease				
2.1 Incidence of key preventable cancers	The incidence of key preventable cancers[b]:	2006	192.3	~
	stomach		8.9	✓
	bowel		62.2	~
	lung		43.8	~
	melanoma of the skin		47.9	~
	kidney		11.5	✗
	cervix		6.6	✓
	liver		5.3	✗
2.2 Incidence of prostate cancer	The incidence of prostate cancer[b]	2006	169.6 per 100,000 males	✗
2.3 Incidence of breast cancer	The incidence of breast cancer[b]	2006	121.1 per 100,000 females	. .
2.4 Dementia	The proportion of the population with dementia	2003	6.5% of adults aged 65 years or over	. .
2.5 Oral health	The proportion of the dentate population with less than 21 teeth	2004–06	11.4% of persons aged 15 years or over	. .
2.6 Arthritis	The prevalence of clinically diagnosed arthritis	2007–08	15.2%	~

(continued)

(a) This value is that of the last point in trend, if a trend is reported. If there is no trend, the value relates to the year(s) specified in the table.
(b) All incidence rates for cancer are per 100,000 population.

Report card (continued)

KEY	✓ favourable	✗ unfavourable	~ no change	. . trend data unavailable or not clear

Indicator no. and name	Measure	Latest year(s)	Value(a)	Trend
Chronic disease (*continued*)				
2.7 Incidence of severe osteoporosis	Incidence of hospital separations for minimal trauma hip fractures among persons aged 40 years or over	2006–07	175 per 100,000 aged 40 years or over	✓
2.8 Incidence of end-stage kidney disease	The new cases of end-stage kidney disease in Australia	2006	22.6 per 100,000	. .
2.9 Young people with depression	The proportion of young people with depression	2007	About 3.5%	. .
Determinants				
2.10 High blood pressure	The proportion of adults aged 25–64 with high blood pressure	1999–2000	30%	. .
2.11 High blood cholesterol	The proportion of adults with measured high blood cholesterol	1999–2000	51.6% aged 25 or over	. .
2.12 People with diabetes who have a HbA1C level greater than 7%	The proportion of adults with diabetes who have a HbA1C level greater than 7%	—	No data	—
2.13 Waist circumference	The proportion of adults with a waist circumference that increases their risk of disease	2007–08	59.4%	. .
2.14 Smoking in pregnancy	Proportion of women smoking during pregnancy	2007	16.6%	✓
2.15 Smoking in young people	Proportion of young men and women (aged 12–15, 16–17) who smoke daily	2007	3.2%	. .
2.16 Insufficient fruit consumption	The proportion of people consuming insufficient serves of fruit Children aged 5–17 years Adults aged 18 years and over	2007–08	38.0% 48.7%	. .
2.17 Insufficient vegetable consumption	The proportion of people consuming insufficient serves of vegetables Children aged 5–17 years Adults aged 18 years and over	2007–08	60.2% 91.2%	. . . .
2.18 Breastfeeding	The proportion of infants exclusively breastfed at 4 months of age and at 6 months of age	—	No data	—
2.19 Risky alcohol consumption	The proportion of people who consume alcohol at risky levels for long-term health	2007	10.3%	~
2.20 Physical inactivity	The proportion of adults who do not engage in sufficient physical activity to confer a health benefit	2007–08	60.1%	. .

(continued)

(a) This value is that of the last point in trend, if a trend is reported. If there is no trend, the value relates to the year(s) specified in the table.

Report card (continued)

KEY	✓ favourable	✗ unfavourable	~ no change	. . trend data unavailable or not clear

Indicator no. and name	Measure	Latest year(s)	Value[(a)]	Trend
Mortality				
2.21 Deaths from leading chronic conditions	Deaths from leading chronic conditions per 100,000 population	2007		
	IHD		107.9	✓
	lung cancer		36.2	✓
	stroke		54.5	✓
	breast cancer		25.5 (females)	✓
	bowel cancer			
	COPD		19.5	✓
	dementia		24.4	✓
	ESKD		34.7	✗
	Type 2 diabetes		9.7	✗
	liver cancer		7.5	✗
	asthma		5.3	✗
	prostate cancer		1.8	✓
			28.0 (males)	✓
2.22 Deaths from suicide	Deaths from suicide (number)	2007	1,880	✓
Services				
2.23 Asthma action plan	Proportion of people with current asthma who have a written asthma action plan	2007–08	21%	~
2.24 Potentially avoidable hospitalisations—detailed	Number of hospital admissions for selected chronic conditions that could have been prevented through access to timely and effective primary care	2008–09	Per 1,000 population	
	Angina		1.6	✓
	Asthma		1.7	✓
	COPD		2.9	~
	Congestive heart failure		2.1	~
	Diabetes complications		8.2	. .
	Hypertension		0.3	~
	Iron deficiency anaemia		1.3	~
	Nutritional deficiencies		0.0	~
	Rheumatic heart disease		0.1	~
Disability				
2.25 Severe or profound activity limitations	The proportion of people with severe or profound activity limitations	2003	6.3%	. .

(a) This value is that of the last point in trend, if a trend is reported. If there is no trend, the value relates to the year(s) specified in the table.

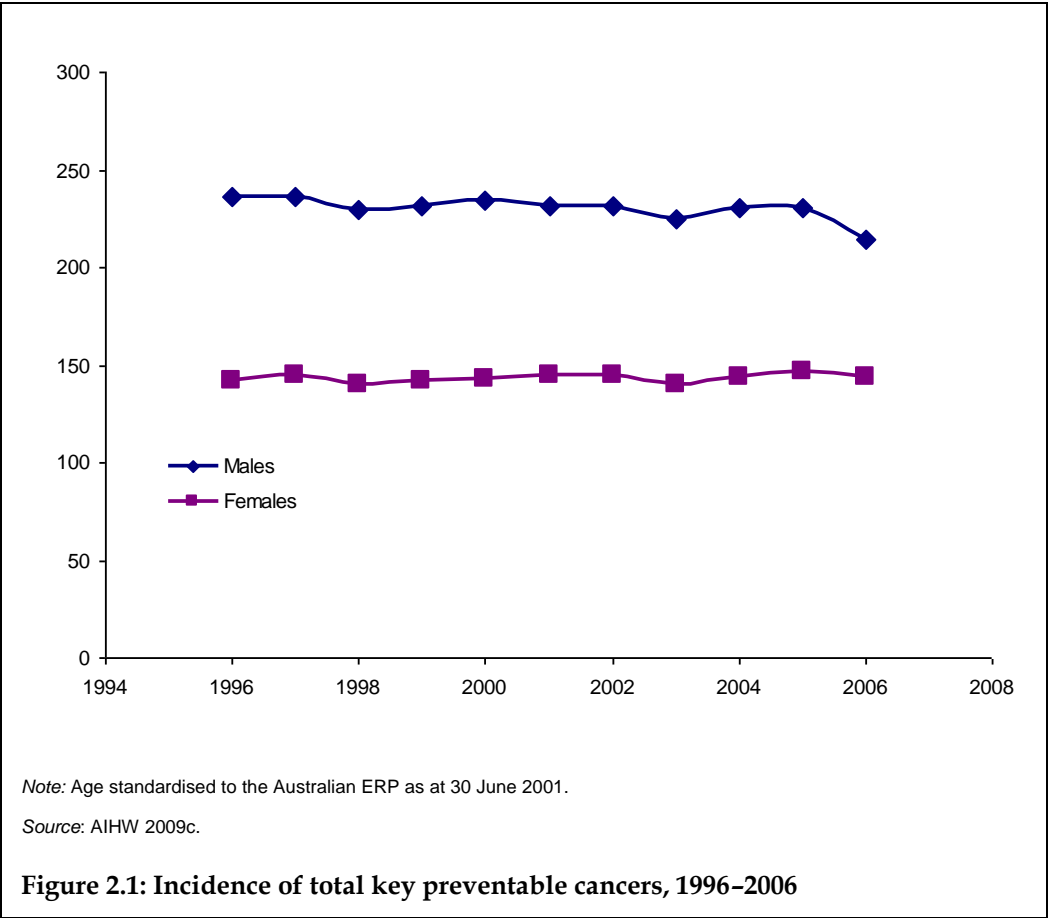## 2.1 Incidence of key potentially preventable cancers
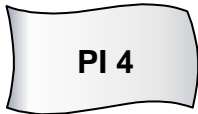
Rationale

Many cancers are potentially preventable. This indicator comprises seven cancers for which incidence rates are most likely to change through preventive actions, such as sun protection, smoking cessation, improvements in diet and administration of vaccines. Favourable improvements in these determinants should result in improvements in the incidence of these cancers, although a lag in time before a change in incidence occurs may exist.

What the data show

The incidence rate of the combined cancers listed as 'key preventable' in 2006 was 192.3 per 100,000 population, and age-standardised rates for these cancers have remained relatively stable since 1996. Readers should note that while there is an apparent decrease in 2006 for incidence in males, it is too early to confirm a change in trend.

Note: Age standardised to the Australian ERP as at 30 June 2001.

Source: AIHW 2009c.

Figure 2.1: Incidence of total key preventable cancers, 1996–2006

Of the seven types of cancers listed as 'key preventable', four have shown reductions in incidence rates over the last 10 years and three have shown increases in incidence over the same period. For most of these cancers, the changes have been very small (less than 1% annually on average); therefore, noting a trend may be misleading. However, over the last 10 years, incidence rates for cancers of the stomach and cervix have reduced by 2% and 4% on average per year (respectively), while incidence rates for cancers of the kidney and liver have increased by 2% and 5% on average per year (respectively).

Of the seven key preventable cancers, colorectal cancer, lung cancer and melanoma of the skin have the highest incidence rates, while cancer of liver has the lowest.

Table 2.1: Incidence and rate of change in key preventable cancers

Cancer	ICD-10 codes	2006 incidence rates per 100,000 population	Average annual rate (%) of change[a]
Stomach	C16	8.9	−1.959
Bowel	C18–C20	62.2	−0.277
Lung	C33–C34	43.8	−0.371
Melanoma of the skin	C43	47.9	0.662
Kidney	C64	11.5	2.008
Cervix[b]	C53	6.6	−4.364
Liver	C22	5.3	5.082

(a) Based on 10 years of cancer incidence data. Average annual rate of change indicates the extent of change in age-standardised rates (standardised to the 30 June 2001 ERP) over time. The rates are expressed as a percentage change per annum. A negative number indicates a decrease.

(b) Females only.

Source: AIHW 2009c.

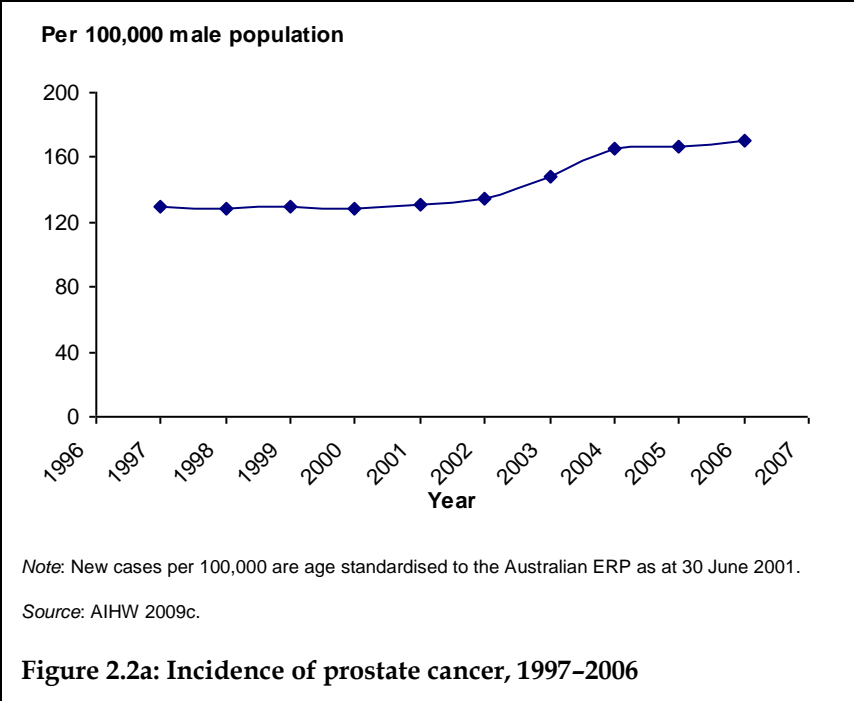## 2.2 Incidence of prostate cancer

Rationale

Prostate cancer is currently of interest to public health researchers. It is the most commonly diagnosed cancer in males and is the third most common cause of cancer deaths in males (after lung and bowel cancers) (AIHW 2010a).

This indicator is included in the set because early detection methods are available, and these minimise the risk of death from this disease. The success in reducing death rates has meant that many more men are living with the effects of post-surgical interventions and cancer treatments, which themselves can be chronic in nature (for example, continued urinary dysfunction) (PCFA 2010).
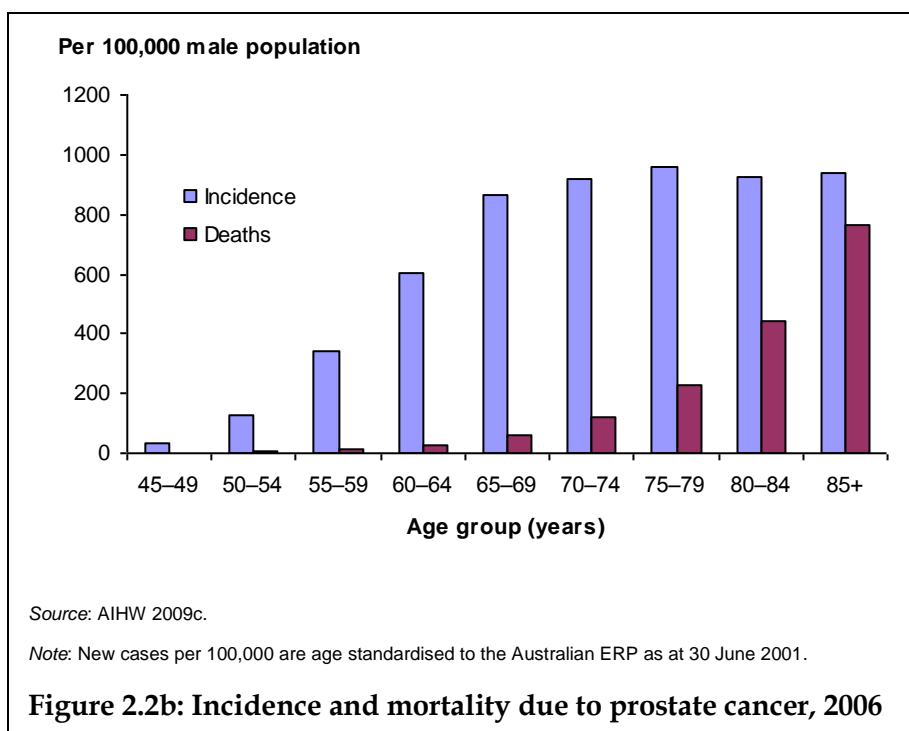
What the data show

In 2006, there were 17,444 cases of prostate cancer diagnosed; most of these were in the 75–79 year age group with 956.6 per 100,000 males (Figure 2.2b).

The trend in incidence of prostate cancer is increasing at an average rate of 3% per year since 1997 (Figure 2.2a). This apparent unfavourable trend correlates strongly with an increased use of prostate-specific antigen tests in screening for this cancer (AIHW 2010a.) Therefore, the increase may not represent an increase in the condition, but an increase in detection.

Per 100,000 male population

Note: New cases per 100,000 are age standardised to the Australian ERP as at 30 June 2001.

Source: AIHW 2009c.

Figure 2.2a: Incidence of prostate cancer, 1997–2006

The incidence of prostate cancer has quite a different profile to its mortality rates; this is because a large proportion of the men in the younger age groups who develop the disease do not die from it (Figure 2.2b).

Per 100,000 male population

Source: AIHW 2009c.

Note: New cases per 100,000 are age standardised to the Australian ERP as at 30 June 2001.

Figure 2.2b: Incidence and mortality due to prostate cancer, 2006

The likelihood of being diagnosed with prostate cancer is different for selected variables. Indigenous males are less likely to be diagnosed with prostate cancer than non-Indigenous males (Table 2.2). Males living in *Major cities* are more likely to be diagnosed, perhaps reflecting better access to screening services. The difference in incidence is not as marked by socioeconomic status; however, those living in areas of most disadvantage are less likely to be diagnosed compared with those living in areas of least disadvantage.

Table 2.2: Incidence of prostate cancer by selected variables, males, 2002–2006 (per 100,000 males)

| Variable	Per 100,000 males
Indigenous status[a]	
Indigenous	57.0
Non-Indigenous	127.3
Geography	
Major city	155.1
Very remote areas	117.1
Socioeconomic status[a]	
1st quintile	153.4
5th quintile	168.4

Notes

1. New cases per 100,000 are age standardised to the Australian ERP as at 30 June 2001.

2. For information about socioeconomic status and geographic region, please refer to Appendix 1.

(a) Since the 1990s, the incidence rate of prostate cancer among NT Indigenous males has been consistently reported at between 24 to 27 cases per 100,000 population. The higher rate of prostate cancer among Indigenous males of the combined jurisdictions NT, Qld, SA and WA may reflect better access to screening services and health care in the larger states, and therefore earlier diagnosis.

Source: Australian Cancer Database, AIHW.

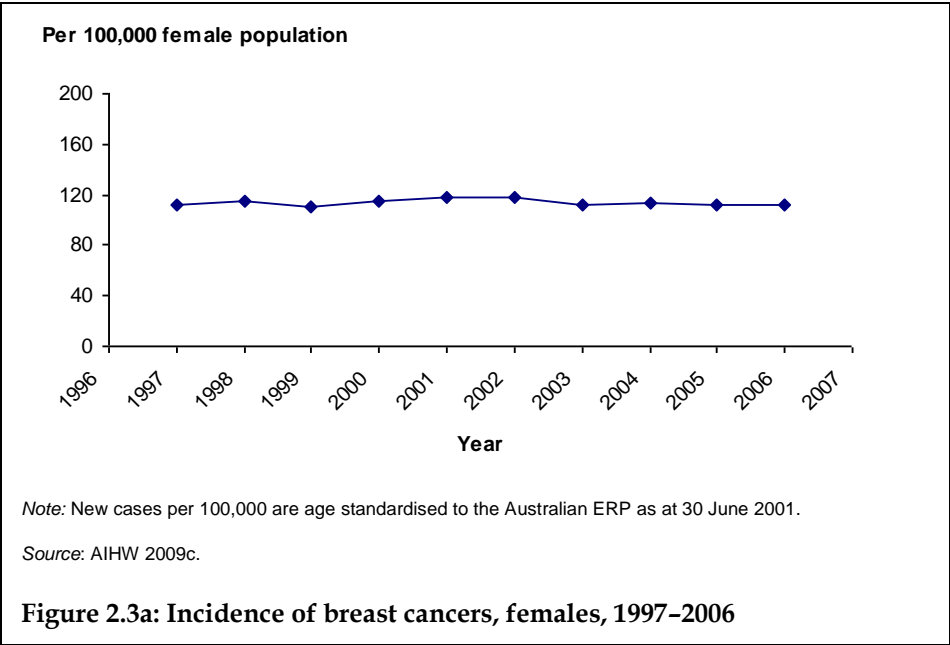# 2.3 Incidence of breast cancer

PI 4
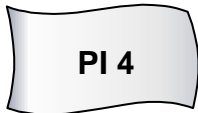
Rationale

Breast cancer is a major health problem that directly affects many women and their families. Most women who are diagnosed with breast cancer undergo extensive treatment which can include surgery, chemotherapy and radiation. Treatment and the after effects can continue for many years after initial diagnosis, meaning breast cancer may be chronic in nature.

Although death rates from breast cancer have decreased since 1994, its contribution to mortality is still significant. In 2007, breast cancer was the fifth highest cause of death for all women (4% of all female deaths). It was also the leading cause of premature death in females (AIHW & (NBOCC) 2009a).
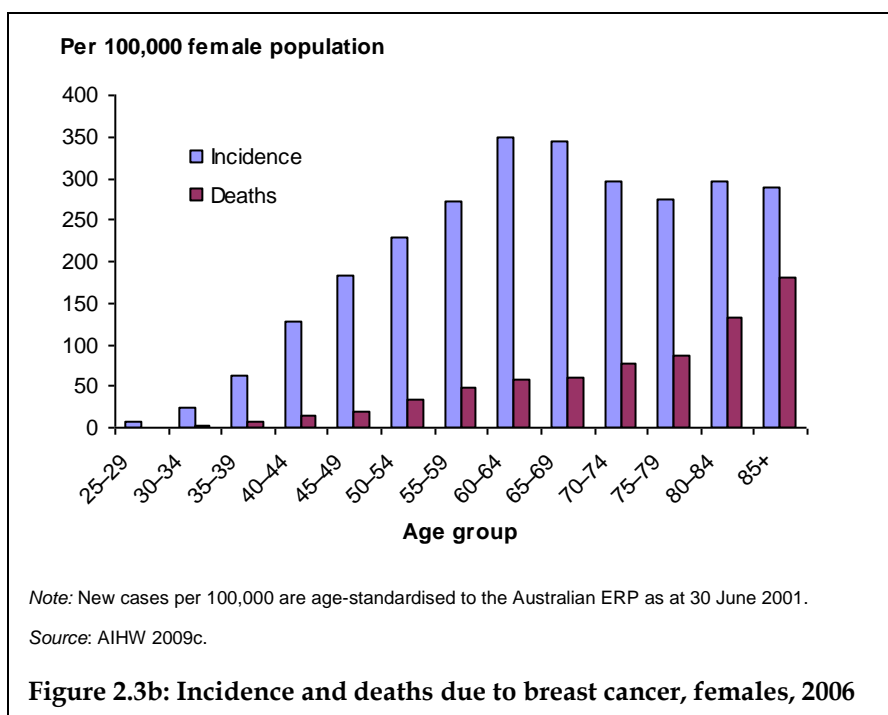
Although males can also develop breast cancer, the estimates for male breast cancers are not included as part of this indicator. Readers can find statistics about male breast cancers in various cancer-related reports and publications on the AIHW website <www.aihw.gov.au>.

What the data show

In 2006, there were 121.1 new cases of breast cancer per 100,000 females (Figure 2.3a). The age-standardised incidence rate for breast cancers rose after the mid-1980s but has remained reasonably stable since 1997, fluctuating between 111.2 per 100,000 females and 117.3 per 100,000 females (AIHW 2010a).

Per 100,000 female population

Note: New cases per 100,000 are age standardised to the Australian ERP as at 30 June 2001.

Source: AIHW 2009c.

Figure 2.3a: Incidence of breast cancers, females, 1997–2006

The rates for incidence of breast cancer increase with age, peaking for women aged 60 to 69 years. The rates were slightly decreased again for those aged 70 to 79 years, remaining at the same level from 80 to 84 years and onwards (Figure 2.3b). The highest rates of incidence occur in females aged 60 to 64 years (349.2 per 100,000 females in 2006). Mortality rates due to breast cancer have a different pattern to incidence, where they continually increase with age.

Per 100,000 female population

Note: New cases per 100,000 are age-standardised to the Australian ERP as at 30 June 2001.

Source: AIHW 2009c.

Figure 2.3b: Incidence and deaths due to breast cancer, females, 2006

Incidence of breast cancer varies across population groups and by geography. Because incidence numbers are quite small when disaggregated, the latest information is aggregated for 2002–2006 (AIHW & NBOCC 2009a).

When analysed by geographic area, a clear gradient appears in the incidence of breast cancer and the level of urbanisation. For example, women living in higher urbanised areas (*Major cities*) have higher incidence rates than those living in *Very remote* areas of Australia. Differences in access to diagnostic procedures (including mammographic screening) may be one of the factors that explain this difference.

Table 2.3: Incidence of breast cancer by selected variables, females, 2002–2006 (per 100,000 females)

Variable	Per 100,000 females
Indigenous status	
Indigenous	69.1
Non-Indigenous	103.1
Geography	
Major city	117.4
Very remote areas	76.6
Socioeconomic status[a]	
1st quintile	108.2
5th quintile	120.0

Notes

1. New cases per 100,000 are age-standardised to the Australian ERP as at 30 June 2001.

2. For information about socioeconomic status and geographic region, please refer to Appendix 1.

Source: AIHW & NBOCC 2009a.

2.4   Dementia

Rationale

Dementia is the name given to a wide group of conditions that cause a progressive decline in a person's brain function, including language, memory, perception, personality and cognitive skills. The most common condition is Alzheimer's disease, which is estimated to be responsible for around 50–70% of all dementia cases (AIHW 2006b). Dementia places a significant burden upon those with the condition and those who care for them. As the population ages, rates of dementia are predicted to increase, thereby putting considerable burden on health and aged care systems.

Currently there is no cure for dementia; however, there are new medications (and more on trial) that have shown positive effects on slowing the progress of the condition. As research into dementia continues, more evidence is emerging about the importance of healthy lifestyle (particularly the same risk factors associated with cardiovascular health) and maintaining social activity, physical and mental fitness.

What the data show

Information about how many Australians have dementia is sparse, with the latest estimates based on the ABS's 2003 Survey of Disability, Ageing and Carers or from meta-analyses of individual studies (all before 2006). Results from studies based on meta-analyses are the preferred option, as there is evidence that survey estimates of the prevalence are under-estimates (AIHW 2006b).

Prevalence estimates reported in *Dementia in Australia: national data analysis and development* (AIHW 2006b) suggest there were almost 175,000 people with dementia in 2003, around 6.5% of the population aged 65 years or older (Table 2.4a). The age group with the highest proportion of people with dementia was the 85 years and over group (22.4%).

Table 2.4a: Prevalence of dementia, 2003

Age	Number			Age-specific rates (%)[a]		
	Males	**Females**	**Persons**	**Males**	**Females**	**Persons**
0–64 years	5,500	2,600	8,100	0.1	—	0.1
65 or over	57,000	109,600	166,600	5.0	7.8	6.5
85 or over	15,600	49,300	64,900	17.1	24.9	22.4
Total	**62,500**	**112,200**	**174,700**	**0.6**	**1.1**	**0.9**

— Nil or rounded to zero.
(a) Age-specific rates are based on the Australian ERP at June 2003.
Source: AIHW 2006b.

The number of people with dementia is projected to increase over time, from almost 175,000 in 2003 to 465,000 in 2031 (Figure 2.4). These projections are only based on demographic factors (that is, population growth) and do not assume changes in prevention, detection, management or treatment of the disease (AIHW 2006b).
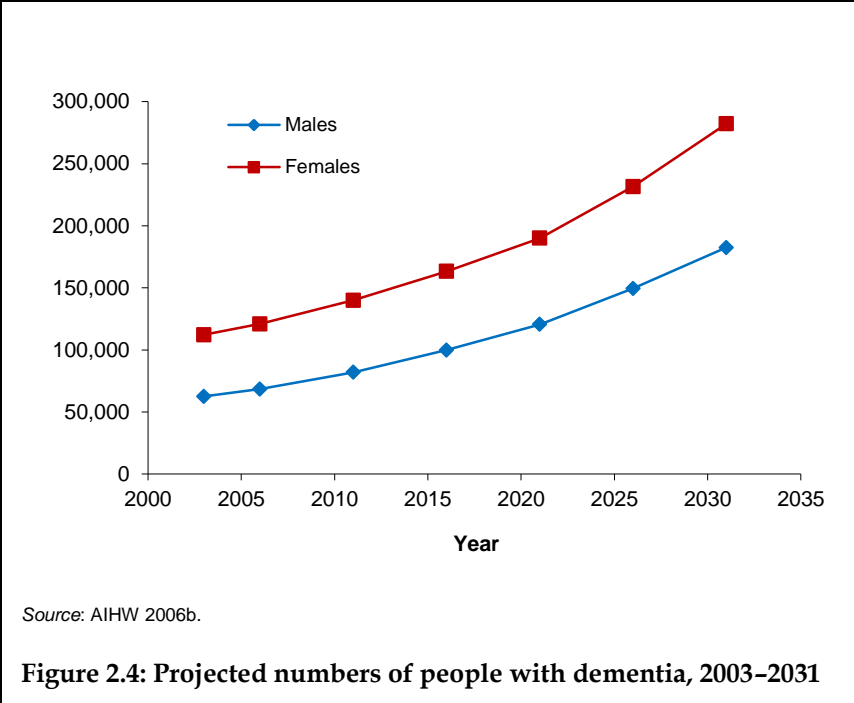

Source: AIHW 2006b.

Figure 2.4: Projected numbers of people with dementia, 2003–2031

Disability due to dementia

The disability associated with dementia increases as an individual's functioning decreases with the growing severity of the disease.

Years lost due to disability (also referred to as the *incident non-fatal burden*) are interpreted as the number of healthy years of life lost due to that disability, which will accrue into the future from new cases of disease and injury in that base year.

In 2003, dementia was the third leading cause of years lost due to disability for females, and the fifth for males (Table 2.4b). When analysed by age groups, dementia did not contribute much to the burden in younger ages; however, for those aged 75 years and over, it was ranked first for both males and females.

Table 2.4b: Years lost due to disability from dementia and rank within age groups, 2003

	Males		Females	
	Aged 75 plus	**All males**	**Aged 75 plus**	**All females**
Years lost[a]	14,988	25,558	33,435	44,738
Rank	1	5	1	3

(a) Years lost due to disability from dementia.
Note: Rankings are by individual diseases.
Source: Begg 2007 et al.
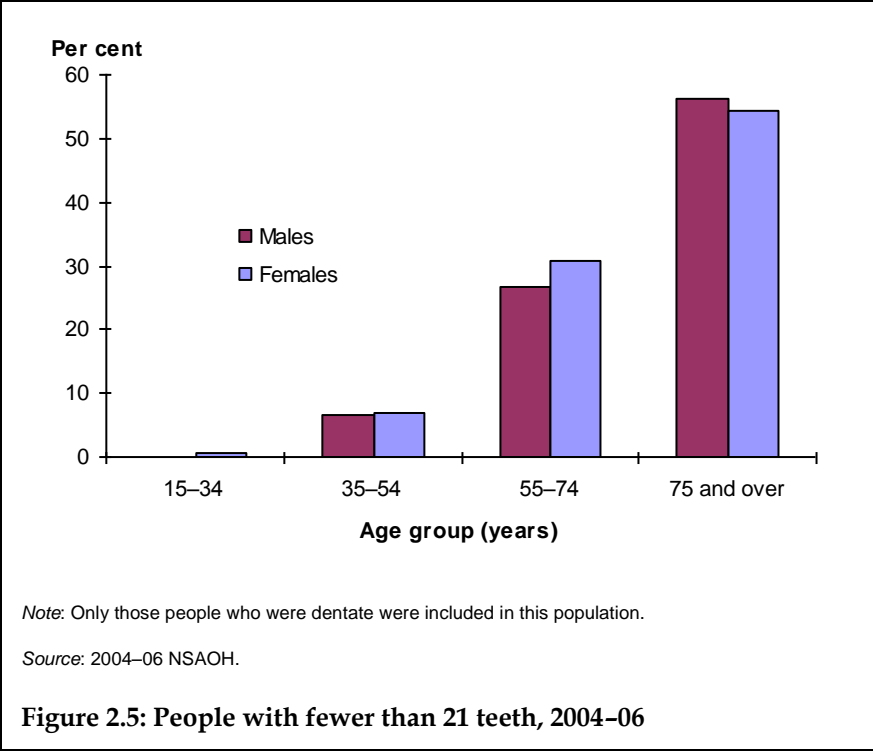
2.5   Oral health

Rationale

Oral health problems are related to many determinants, such as early childhood experiences, diet, smoking and exposure to fluoride. People with poor oral health can experience problems with their diet, pain and infection. Their sleep patterns can be affected, as well as their work and social lives (NACOH 2004).

Dentists consider that the retention of a certain number of teeth is consistent with oral function and appearance (Roberts-Thomson 2007). Having fewer teeth than adequate is also associated with poor oral health and can be linked with inadequate nutritional status. This indicator describes the natural dentition among dentate people (those who have one or more natural teeth). For this indicator, 21 teeth is defined as adequate; however, some literature reviews have concluded that 20 teeth is the threshold.

The loss of teeth occurs mostly because of dental treatment—mainly for problems with decay but sometimes for periodontal disease. In less common cases, tooth loss can be due to trauma or poor alignment.

What the data show

Results from the 2004–06 National Survey of Adult Oral Health (NSAOH) show that 11.4% of people (aged 15 years and over) who have at least one of their natural teeth, have fewer than 21 teeth.

Note: Only those people who were dentate were included in this population.

Source: 2004–06 NSAOH.

Figure 2.5: People with fewer than 21 teeth, 2004–06

The proportion of people who had less than 21 natural teeth increased with age (Figure 2.5), from almost non-existent in those aged 15–34 years to over half of those aged 75 years and over. These differences in age groups do not necessarily reflect poorer oral health with age, rather dental practices throughout time. For example, dental extractions for tooth decay may have been more common in previous years, meaning that those born before 1950 (aged 55 and older at the time of the survey) were more likely to have had teeth extracted than other forms of dental treatment. The other important aspect to remember is that toothpastes containing fluoride and the fluoridation of drinking water began in the 1950s; therefore, people born after then had added protection for their teeth compared with those born before.

The proportion of people with fewer than 21 teeth varied mostly by whether people were eligible for public dental care and whether people had dental insurance (Table 2.5). Differences in the average number of missing teeth were most apparent in those who were eligible for public dental care and those who were not (on average by three missing teeth).

Table 2.5 Proportion of people with fewer than 21 teeth and average number of missing teeth by selected variables, 2004–06

Variable	Per cent with less than 21 teeth	Average number of missing teeth
Sex		
Males	10.6	5.8
Females	12.2	6.4
Indigenous status		
Indigenous	10.4	7.4
Non-Indigenous	11.4	6.1
Residential location		
Capital city	10.0	5.7
Other place	14.0	6.8
Eligibility for public dental care		
Eligible	27.1	8.7
Ineligible	6.7	5.2
Dental insurance		
Insured	8.2	5.8
Not insured	14.6	6.5

Notes

1. People aged 15 years and over.

2. Dentate people; that is, those with at least one natural tooth.

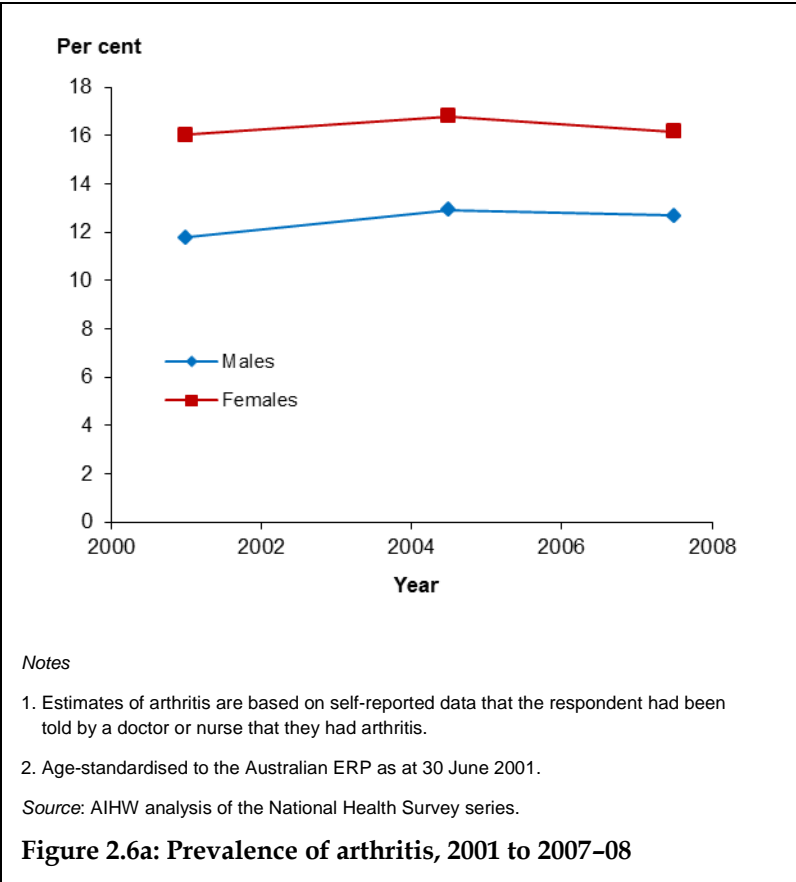*Source:* Roberts-Thomson 2007.

2.6   Arthritis

Rationale

Arthritis is one of the most prevalent long-term conditions in Australia; 15.2% of the population (over three million people) reported having arthritis in 2007–08. There are many types of arthritis, but their contributions to the burden of health are similar (pain, deformity, mobility restrictions and functional impairment) (AIHW 2008f). Therefore, this indicator provides a measure of the combined prevalence from all types of arthritis.
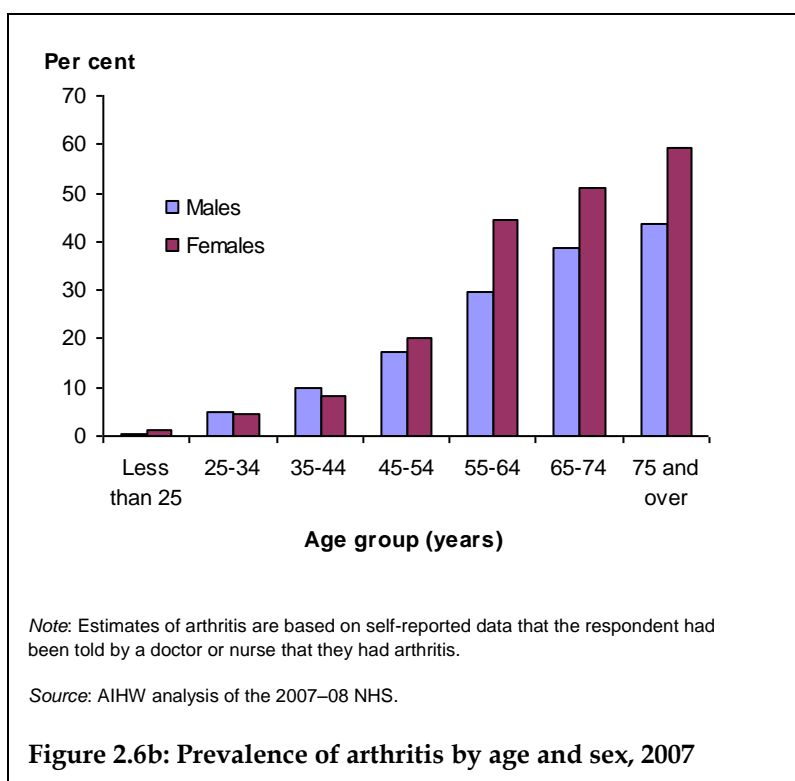
The causes of arthritis (including the most common form, osteoarthritis) are not completely understood, but several modifiable risk factors (healthy weight, physical activity, avoidance of repetitive joint loading tasks) are currently thought to prevent or delay the onset of the disease.

What the data show

Rates of arthritis have remained relatively stable since 2001 (Figure 2.6a); however, it is important to note that actual numbers of people with this condition have increased over the same time period, and are expected to continue doing so as the population ages.

Notes

1. Estimates of arthritis are based on self-reported data that the respondent had been told by a doctor or nurse that they had arthritis.

2. Age-standardised to the Australian ERP as at 30 June 2001.

Source: AIHW analysis of the National Health Survey series.

Figure 2.6a: Prevalence of arthritis, 2001 to 2007–08

The proportions of people reporting arthritis increase with age, from less than 5% of those aged less than 34 years to over 40% in those aged 75 years and older (Figure 2.6b). From the 45–54 year age group, females consistently report higher rates of arthritis than males.

Per cent

Note: Estimates of arthritis are based on self-reported data that the respondent had been told by a doctor or nurse that they had arthritis.

Source: AIHW analysis of the 2007–08 NHS.

Figure 2.6b: Prevalence of arthritis by age and sex, 2007

Arthritis is a significant contributor to disability (see Indicator 2.25). In 2003, 14% of people with a disability reported arthritis (and related disorders) as their main disabling condition (ABS 2004). This estimate is, however, likely to be an underestimate of the contribution of arthritis as only the main condition contributing to disability was recorded, not all conditions.

Table 2.6 Prevalence of arthritis by selected variables, 2007–08 (per cent)

	Males		**Females**	
Indigenous status[a]	**Indigenous**	**Non-Indigenous**	**Indigenous**	**Non-Indigenous**
Osteoarthritis	12	8	17	12
Rheumatoid arthritis	4	2	4	2
Geography[b]	**Major city**	**Other areas**	**Major city**	**Other areas**
All arthritis	12.1	14.4	16.7	17.2
Socioeconomic status[b]	**1st quintile**	**5th quintile**	**1st quintile**	**5th quintile**
All arthritis	16.7	10.6	18.9	14.6

(a) Rates for Indigenous and non-Indigenous Australians are based on the 2004–05 NATSIHS, as information about Indigenous status was not available for analysis from the 2007–08 NHS. The source for these data is AIHW 2010e.

(b) AIHW analysis of the 2007–08 NHS. For information about socioeconomic status and geographic region, please refer to the Appendix. Data were age standardised to the 2007–08 survey population. 'Other areas' include *Outer regional* and *Remote* areas.
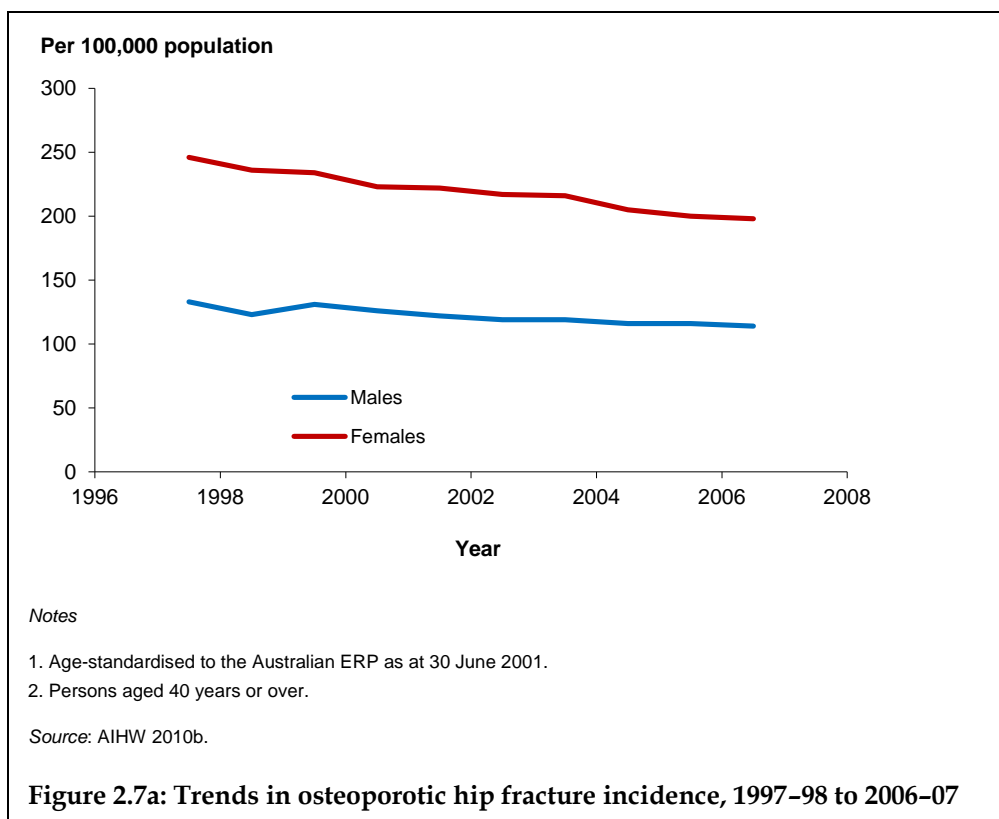
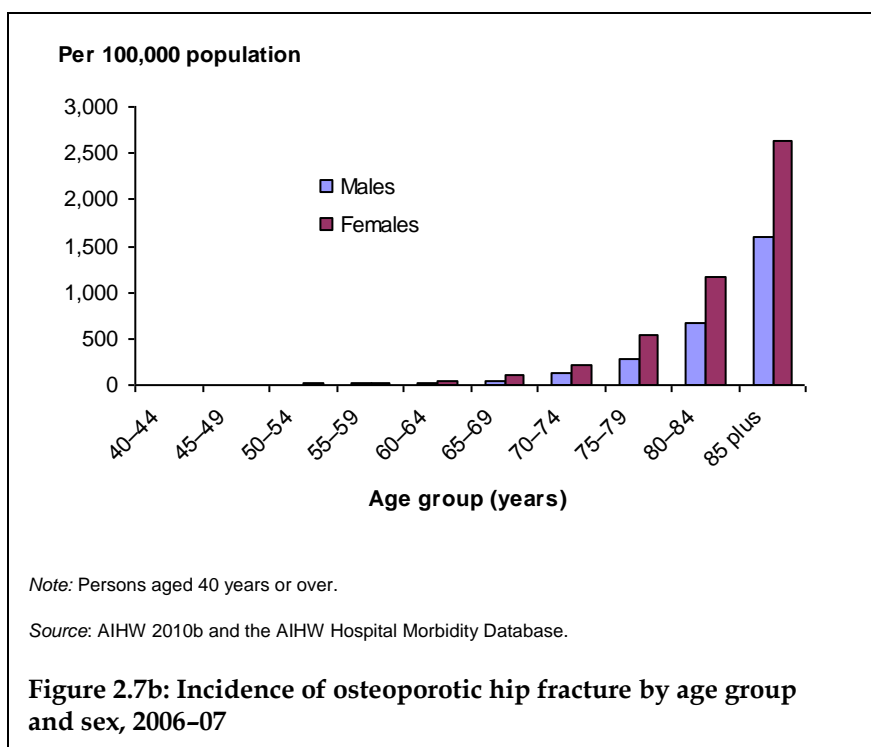## 2.7   Incidence of severe osteoporosis

Rationale

Hip fractures occur more commonly in people who have osteoporosis. The fragility of the bones due to osteoporosis means that bones fracture easily and from only a small amount of force; this is called a *minimal trauma fracture*. It is considered that the majority of minimal trauma hip fractures are related to osteoporosis. As the vast majority of these hip fractures result in a hospital admission, they are a good indicator of severe osteoporosis in the community. Osteoporotic hip fractures are a burden on the health of Australians and on the health system. Modifiable risk factors for osteoporosis include physical inactivity, calcium and vitamin D deficiencies, smoking and being substantially underweight.

What the data show

Since 1997–98, the estimated incidence in the age-standardised rate of osteoporotic hip fractures (among people aged 40 years or more) has fallen from 204 per 100,000 to 164 per 100,000 in 2006–07 (AIHW 2010b, Figure 2.7a). However, it is important to note that this decrease in rates is not reflected in the number of hip fracture cases, which have risen with the growth in the older population, from 14,892 in 1997–98 to 16,518 in 2006–07.

Per 100,000 population

Notes

1. Age-standardised to the Australian ERP as at 30 June 2001.
2. Persons aged 40 years or over.

Source: AIHW 2010b.

Figure 2.7a: Trends in osteoporotic hip fracture incidence, 1997–98 to 2006–07

The incidence of hip fractures is much higher in females than in males; almost three-quarters of all hip fractures (16,500 fractures) were in women aged 40 years or over (12,000 fractures). For both males and females, the rates of osteoporotic hip fractures increase with age (Figure 2.7b).

Note: Persons aged 40 years or over.

Source: AIHW 2010b and the AIHW Hospital Morbidity Database.

Figure 2.7b: Incidence of osteoporotic hip fracture by age group and sex, 2006–07

In 2005–07, Aboriginal and Torres Strait Islander people were more likely to be hospitalised for osteoporotic hip fractures than other Australians; Indigenous males were twice as likely as other Australian males, and Indigenous females were 26% more likely than other Australian females (Table 2.7). Analysis of hospital separation data also showed that Indigenous Australians were on average much younger than other Australians at the time of their hip fracture (AIHW 2010b).

Table 2.7: Incidence[a] of osteoporotic hip fracture by selected variables, 2006–07

Variable	Number of expected cases[a]
Indigenous peoples[b]	
Males	2.01
Females	1.26
Geography[c]	
Males in remote Australia	0.97
Females in remote Australia	1.13
Socioeconomic status[d]	
Most disadvantaged males	1.09
Most disadvantaged females	1.01

(a) The incidence of the selected variables is expressed in this table as the number of cases that would be expected if people in each group experienced the same age and sex fracture rates as people in selected reference groups.

(b) Data are for 2005–07. Males and females who are classified as 'Other Australians' are the reference group. Data are for NSW, Vic, Qld, SA, WA and public hospitals in the NT only. The group 'Other Australians' includes both those identified as non-Indigenous and those whose Indigenous status was unknown.

(c) Males and females living in *Major cities* are the reference groups.

(d) Males and females living in the least disadvantaged areas are the reference groups.

Note: For information about socioeconomic status and geographic region, please refer to Appendix 1.

Sources: AIHW 2010b and the AIHW Hospital Morbidity Database.

2.8 Incidence of end-stage kidney disease

Rationale

People with end-stage kidney disease (ESKD) require kidney replacement therapy (dialysis or kidney transplant) to sustain life. Both these treatments are very expensive and require intensive health services.

Technical note: Since the release of the *Technical report* (AIHW 2009a), this indicator was further developed by the AIHW and endorsed by the Chronic Kidney Disease Monitoring Advisory Committee. New specifications for the numerator now includes all deaths for which ESKD was recorded as a cause (see Appendix 1 for a list of ICD-10 codes) as well as the number of new cases of ESKD (people receiving dialysis or living with a kidney transplant). This means that the estimate represents total incidence, rather than incidence of treated ESKD which would have been the estimate derived if the original specifications were followed.

What the data show

Not enough data across time are available to validate a trend; however, age-standardised rates of ESKD appear to be relatively stable between 2003 and 2006 with males consistently having higher incidence of ESKD than females (Figure 2.8a). In 2006, the incidence of ESKD was 22.6 cases per 100,000 people.

Note: Age-standardised to the Australian ERP as at 30 June 2001.

Sources: AIHW (unpublished) sourced from the Australian and New Zealand Dialysis and Transplant Register, the National Death Index and the AIHW National Mortality Database.

Figure 2.8a: Incidence of end-stage kidney disease, 2003–06
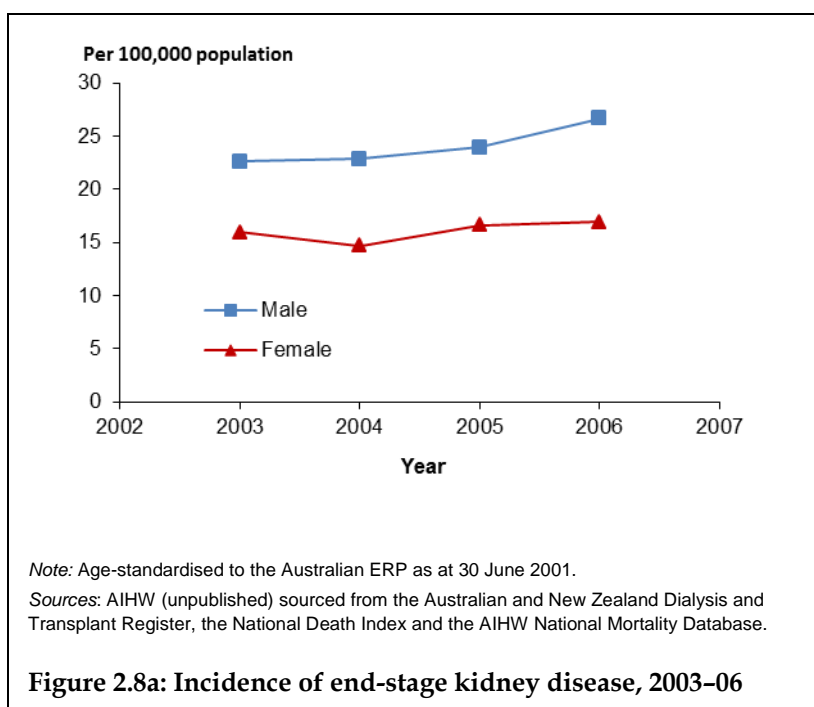
Incidence of ESKD differs vastly by age and by sex (Figure 2.8b). For those aged less than 40 years, the incidence is very small but starts to increase with age (Figure 2.8b). At all ages, males have a higher incidence of ESKD than females.

Per 100,000 population

Figure 2.8b: Incidence of end-stage kidney disease by age group, 2006
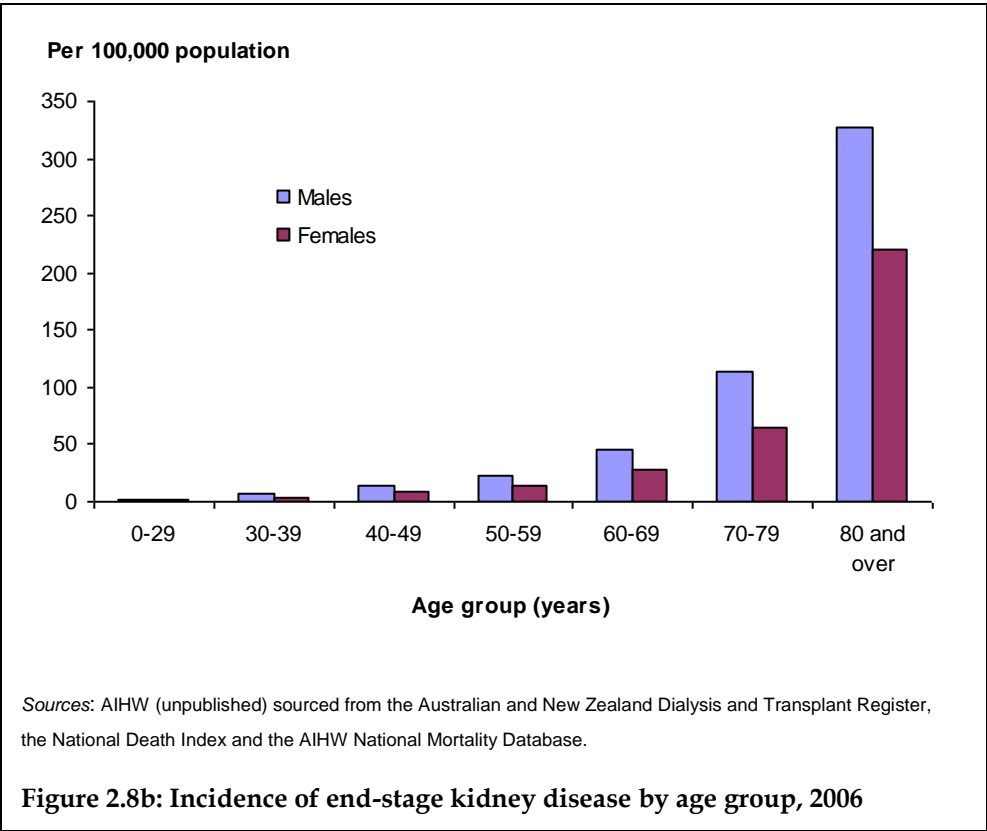
At the time of writing this report, data for the incidence of ESKD were not available to be disaggregated by geographic area or by socioeconomic status.

Indigenous people have much higher rates of end-stage kidney disease than non-Indigenous people (Table 2.8).

Table 2.8: Incidence of end-stage kidney disease by Indigenous status, 2003–2006 (per 100,000 population)

Variable	Per 100,000 population
Indigenous status[a]	
Indigenous	114.4
Non-Indigenous	18.0

(a) Indigenous disaggregation is based on data from the NT, Qld, SA, WA and NSW, and are age standardised to the Australian ERP as at 30 June 2001.

Sources: AIHW (unpublished) sourced from the Australian and New Zealand Dialysis and Transplant Register, the National Death Index and the AIHW National Mortality Database; ABS Estimated Resident Population, ABS Indigenous experimental estimates and projections (projections published in COAG 2010).

2.9   Young people with depression

Rationale

Mental health problems in young people (including depression) can lead to a poorer quality of life, physical health problems and other mental disorders. Depression is the most common mental health problem in young people; it is estimated that between 2% and 5% of young people will experience depression (sufficient to warrant treatment) at some point in time (beyondblue 2006). Depression in young people is associated with increased levels of risk-taking behaviours, as well as more cigarette smoking, alcohol abuse and use of illicit substances.

What the data show

There are very little data available about the prevalence of depression in people aged 12–17 years, meaning that the ability to report accurately against this indicator is limited. The latest data about mental health are from the ABS's National Survey of Mental Health and Wellbeing (SMHWB) that was conducted in 2007; the sample for this survey started at age 16, limiting data for this indicator to only two years of age. However, from this survey an estimate of 3% can be calculated for young persons (aged 16 and 17 years) who at some point in their life had experienced depression. It should be noted that the relative standard error on this estimate is between 25% and 50%, and it therefore should be used with caution. Results from any further disaggregation of those data for 16- and 17-year-olds are not considered reliable for reporting. The SMHWB also assessed whether people had experienced symptoms of disorders (in this case depression) in the last 12 months; however, the sample size for those aged 16 and 17 years does not allow for any reliable analysis of those results.

The 1997 SMHWB (also conducted by the ABS), included a *Child and adolescent* component, that allowed assessment of the mental health of adolescents aged between 13 and 17 years. That survey concluded that the prevalence of depressive disorders in those adolescents was about 3.6% (Sawyer 2000).

The latest NHS was conducted in 2007–08. Results are able to be obtained for young people aged 12–17 years, who reported mood (affective) problems, of which depression is a component. Results for this age group indicate that about 3.5% of young people have a mood (affective) problem that has either lasted, or was expected to last, for six or more months. Again, these estimates should not be disaggregated as reliability of results is lost.

The following statistics present other data about depression and young people. Because of the limitations in obtaining data exclusively for the 12–17 year age group, information is presented for age groups that are as close as possible to 12 to 17 years.

Burden of disease

The disability-adjusted life year (DALY) is a widely known measure of health. It is the combination of the number of years of life lost due to premature mortality (death before the age of 75 years) and the number of 'healthy' years of life lost due to disability. Table 2.9 shows the DALYs for anxiety and depression, as well as their contribution to the total burden of disease for the specified age groups.

Table 2.9: DALYs caused by anxiety and depression by sex, Australia, 2003

	Males			Females	
Age group	DALYS	Per cent of total burden		DALYS	Per cent of total burden
0–14 years	9,554	7.7		15,507	16.0
15–24 years	17,868	17.4		29,946	31.8

Source: Begg et al 2007.

Mortality

The numbers of deaths directly attributed to depression are very few. Depression is a major risk factor for suicide (beyondblue 2006), but the extent it contributes to suicide statistics is not easily quantified.

The Burden of Disease study uses a methodology whereby it attributes proportions of deaths from suicide and from ischaemic heart disease to those coded as from depression. More can be read about the Burden of Disease study in *The burden of disease and injury in Australia, 2003* (Begg et al. 2007).

Readers with an interest in deaths due to suicide should refer to Indicator 2.22 on page 82 of this report.

2.10 High blood pressure

Rationale

High blood pressure (also known as hypertension) is a risk factor for many chronic diseases, and is often considered a chronic disease in its own right. Some of the diseases that high blood pressure directly affects include coronary heart disease, stroke, heart failure, peripheral vascular disease and kidney failure. In 2003, almost 8% of the burden of disease in Australia was attributed to high blood pressure (Begg et al. 2007).

Modifiable behaviours which may reduce high blood pressure include reducing salt and fat intake, maintaining a healthy weight, increasing physical activity and not consuming alcohol in excess.

The preferred method for collecting information about high blood pressure is through actual measurement, rather than through self-reports, as this provides far more accurate results. However, information from measured sources is limited; the most recent are from the 1999–2000 AusDiab study and are for those aged 25 years or older.

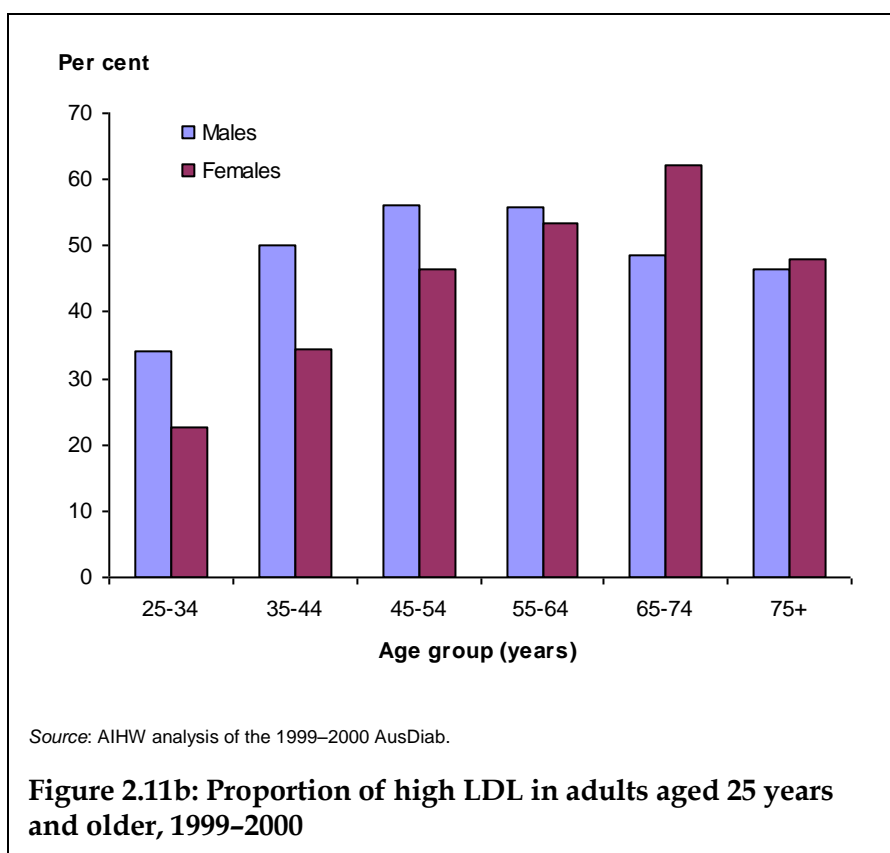## What the data show

In 1999–2000, about 30% of adults aged 25 years or more had high blood pressure. The rates increased with age for both males and females, and at each age group higher proportions of high blood pressure were recorded for males than for females (Figure 2.10a).

Note: Includes those people who were taking medication for blood pressure.

Source: AIHW analysis of 1999–2000 Australian Diabetes, Obesity and Lifestyle (AusDiab) study.

Figure 2.10a: Proportion of adults aged 25 years and over who have high blood pressure, 1999–2000
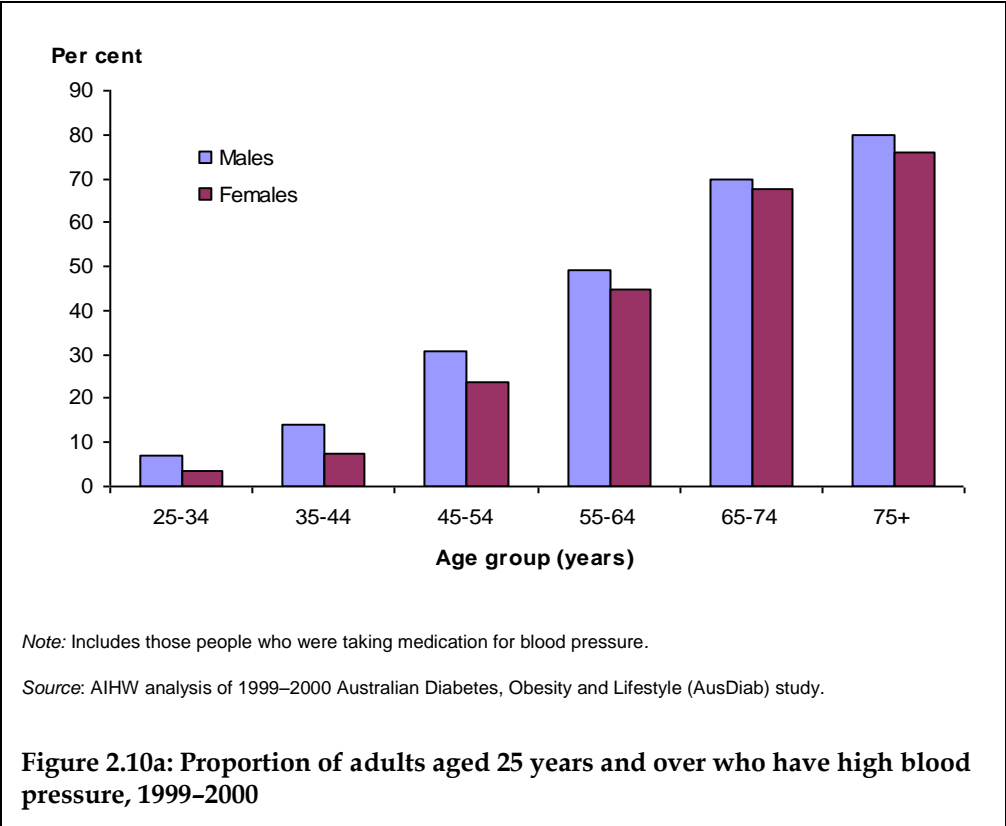
While trend information derived from data based on measurements is not available, it does exist from data based on self-reports. The data shows that there was little change in rates of high blood pressure over time, reducing just over 1 percentage point from 2001 to 2007–08 (Figure 2.10b). Interestingly, the data based on self-reported estimates shows slightly higher rates for females than males, opposite to that based on measurements.

Notes
1. Includes those people who were taking medication for blood pressure.
2. Based on self-reported information.
3. Age-standardised to the Australian ERP as at 30 June 2001.
Source: AIHW analysis of NHS series.

Figure 2.10b: Proportion of persons who have high blood pressure, 2001 to 2007–08
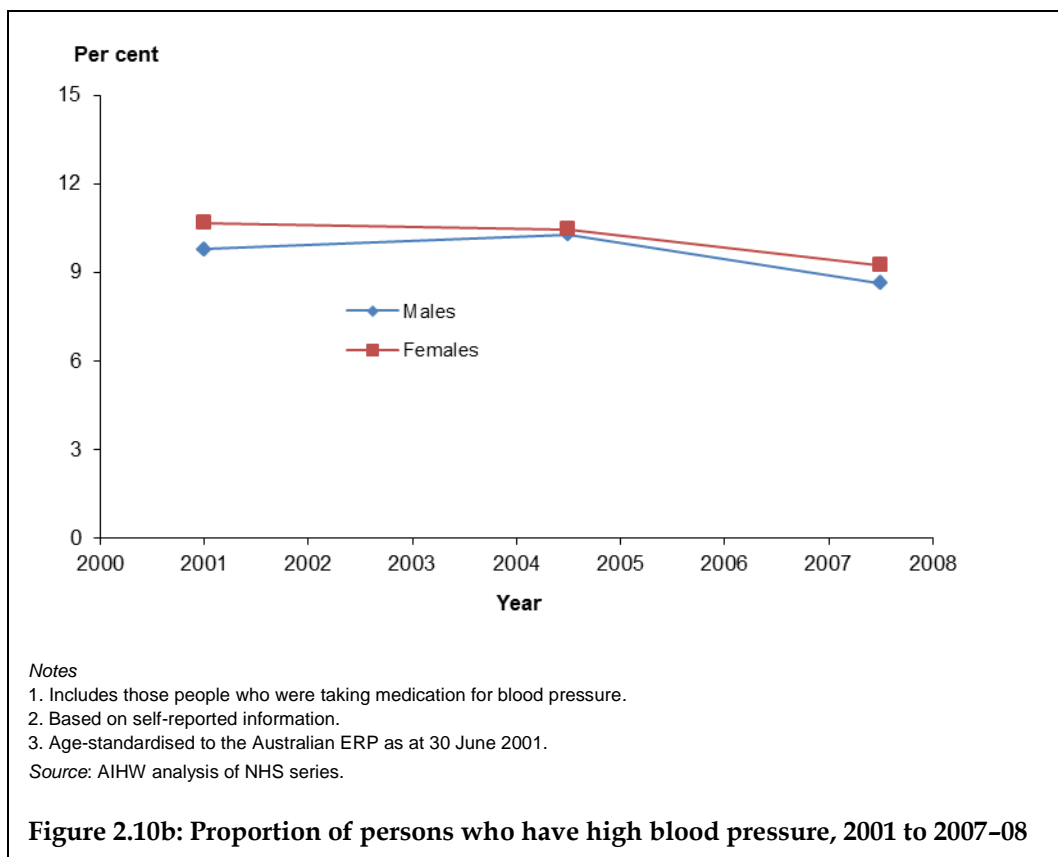
Table 2.10: Prevalence of high blood pressure by selected variables (per cent)

Variable	Per cent
Indigenous status[a]	
Indigenous	15.0
Non-Indigenous	11.0
Geography[b]	
Capital cities	29.5
Other areas	30.5
Socioeconomic[c]	
1st quintile	9.7
5th quintile	9.1

(a) Information about blood pressure for Indigenous people is from the 2004–05 NATSIHS, and estimates were age standardised to the Australian ERP as at 30 June 2001. ABS & AIHW 2008.

(b) AIHW analysis of the 1999–2000 AusDiab study.

(c) AIHW analysis of the 2007–08 NHS. Data were age standardised to the 2007–08 survey population.

Note: Data for Indigenous status and socioeconomic level are based on self-reports.

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2.11 High blood cholesterol

Rationale

High blood cholesterol is a risk factor for diabetes-related complications, ischaemic heart disease and stroke. The main cause of raised blood cholesterol in most people is a diet high in saturated fat. High levels of trans fats also contribute to a raised cholesterol level because they raise the levels of bad cholesterol—low-density lipoproteins (LDLs)—and reduce levels of good cholesterol— high-density lipoproteins (HDLs). This indicator provides a measure of the prevalence of total high blood cholesterol and LDL (see Appendix 1 for definitions).

The preferred method for collecting information about cholesterol levels is through measurement (by taking blood samples and analysing them in laboratories), which provides far more accurate results than information collected using self-reports. However, information from measured sources is limited; the most recent are available from the 1999–2000 AusDiab study and are for those aged 25 years or older.

What the data show

In 1999–2000, half of Australians aged 25 years or older had high cholesterol (51.6%). Rates of total high cholesterol differed by sex and age group (Figure 2.11a). For males, the highest rates were found in the 45–64 year age groups (around 61%), whereas for females, those aged 65 to 74 had the highest levels (75%).

Source: AIHW analysis of the 1999–2000 AusDiab.

Figure 2.11a: Proportion of total high cholesterol in adults aged 25 years and older, 1999–2000
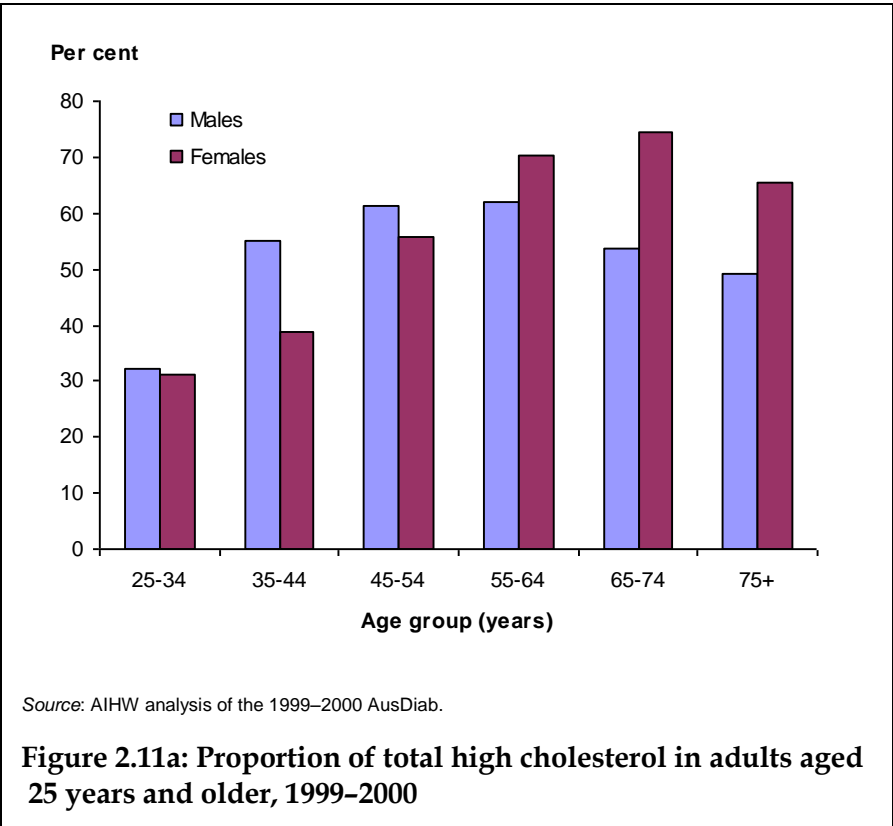
Trend data for high cholesterol are limited and are for those aged 25–64 years, living in capital cities only, and only up to the year 2000. However, analysis on those data shows that there has been no change in levels of cholesterol since 1980 (AIHW 2010a).

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The proportion of adults with high levels of LDL in 1999–2000 was 45%, and differed by sex and age group (Figure 2.11b). The peak in levels for males was in the 45–54 and 55–64 year groups (around 56%), and for females the highest levels were in the 65–74 year group (62%).

Per cent

Source: AIHW analysis of the 1999–2000 AusDiab.

Figure 2.11b: Proportion of high LDL in adults aged 25 years and older, 1999–2000

There was little variation is levels of total high cholesterol and levels of LDL when analysed by selected variables (Table 2.11).

Table 2.11: Proportion of total high cholesterol and LDL by selected variables, 1999–2000 (per cent)

	Total cholesterol	LDL
Variable	**Per cent**	
Geographic area		
Capital city	50.4	44.4
Other areas	53.0	45.0
Educational attainment		
Did not finish high school	53.2	45.0
Attended TAFE or university	50.1	43.9

Notes

1. Estimates of levels of cholesterol are measured.

2. The AusDiab did not collect information about socioeconomic status; educational attainment is provided here as a proxy.

Source: AIHW analysis of the 1999–2000 AusDiab.

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2.12 People with diabetes who have a HbA1C level greater than 7%

Rationale

This indicator is designed to measure one component of the annual cycle of care for managing diabetes. The annual cycle of care is described as the minimum level of care for people with diabetes, and recommends that HbA1c levels are measured at least six monthly (AIHW 2008d).

The HbA1C is a blood test which is used to assess how well blood glucose has been controlled. Over time, this indicator may provide information to help determine whether the quality of clinical management for people with diabetes is improving.

HbA1c allows the amount of sugar attached to red blood cells (glycated hemoglobin) to be measured, providing an indication of how diabetes has been managed over the last 2–3 months. The actual measure is given as a percentage.

Preventing HbA1c levels becoming high can delay or prevent some complication of diabetes, such as eye, kidney and nerve disease, and improves the chances of a person with diabetes staying healthy by better managing their condition.

A note about the 7%

While a target HbA1c level of 7% is considered appropriate at a population level, it is important to note that this is not necessarily the case at an individual level. Elderly people and children with diabetes are more likely to have HbA1c target levels above 7% set by their doctor to avoid producing unacceptable hypoglycaemia.

Currently no data

At present there is no national data source available to measure the number of people with diabetes and their HbA1c levels. Several primary care collections have been proposed as data sources but currently the information they collect is not nationally representative. There is incomplete coverage of all general practices in the Australian General Practice Network collection, the Primary Health Care Research and Information Services and the Australian Primary Care Collaborative collections. Some collection improvements (such as mandatory participation and reporting) would be required to generate national estimates, as well as estimates by population groups, for this indicator.

At the time of writing this report, the next Australian Health Survey (see *Future directions* on page 14) was expected to collect levels of HbA1c as part of the National Health Measures Survey.

2.13 Waist circumference

Rationale

This indicator provides information about a level of risk associated with excess weight. Waist circumference is a measure of central obesity. It is sometimes considered a better indicator for a range of health problems than total body mass (as described by BMI) for which results can be compromised by differing levels of muscle mass. Increased waist circumference is related to cardiovascular disease, Type 2 diabetes and some cancers. Recognising that waist circumference is related to an increased risk of chronic disease, the Australian Government Department of Health and Ageing began its Measure Up campaign in 2008 (DoHA 2010). The campaign concentrated on waist measurements, with supporting messages regarding nutrition and physical activity.

What the data show

In 2007–08, 59.4% of adults had a waist measurement that put them at a heightened risk for health problems—23% had a waist measurement that put them at increased risk and 36% had a waist measurement that put them at a substantially increased risk (see Appendix 1 for definitions). Waist measurements increase with age for both males and females; higher proportions of females than males have waist measurements indicating substantially increased risk at each age group (Figure 2.13).

Note: Persons for whom waist measurements were not taken are excluded from analysis.

Source: AIHW analysis of the 2007–08 NHS.

Figure 2.13: Risk of chronic disease from waist measurements in adults, 2007–08
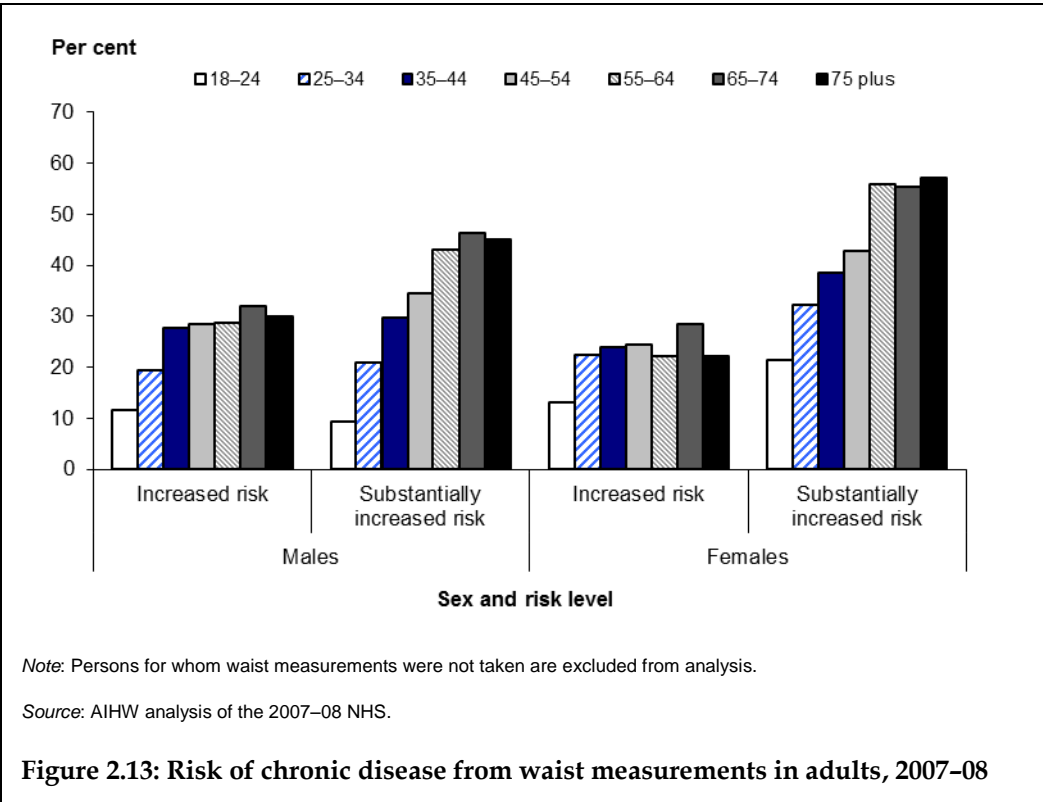
Trend data are not available for this indicator. Similarly, to date no survey has collected waist measurements to a sufficient degree to allow reporting by Indigenous status. The Australian Health Survey (see *Future directions* on page 14) is expected to include measured waist circumference for Indigenous people.

Waist circumference differs by where people live in Australia. Higher proportions of adults living in the most socioeconomically disadvantaged areas or in *Other* geographic areas (than in the least socioeconomically disadvantaged areas or *Major cities*) had waist circumferences which put them at substantially increased risk of chronic disease (Table 2.13). This pattern was evident for both males and females.

Table 2.13: Adults with a waist circumference which puts them at a substantially increased risk of disease by selected variables, 2007–08 (per cent)

	Males	Females
	Per cent	
Geography		
Major city	28.5	39.3
Other areas[(a)]	43.4	46.8
Socioeconomic status		
1st quintile	39.9	49.3
5th quintile	25.5	33.0

(a) Includes *Outer regional* and *Remote* areas.

Notes

1. For information about socioeconomic status and geographic region, please refer to Appendix 1.

2. Records for persons whose waist measurements were not taken are excluded from analysis.

3. Data were age standardised to the 2007–08 survey population.

Readers who are interested in statistics on body weight should also refer to the information for Indicators 1.4 and 1.5 in this report.

2.14 Smoking in pregnancy

Rationale

Smoking during pregnancy increases the risk of poor outcomes for the infant such as low birthweight (see Indicator 1.7) and mortality. It also increases the mother's risk of spontaneous abortion, ectopic pregnancy and other obstetric complications.

This indicator is one of the early life health measures in the KIP set. Data for this indicator come from the National Perinatal Data Collection and are available from 2001. It is important to note that these data are not available for all states and territories; therefore, a true trend based on these data cannot be declared.

What the data show

From the available data, it appears that smoking during pregnancy is declining, even though the proportions of change are small (Figure 2.14a). In 2007, 16.6% of mothers reported smoking while pregnant.

Notes

1. For 2001–04, data were available from NSW, SA, WA, NT and ACT.

2. For 2005, data were available from NSW, SA, WA, NT, Tas and ACT, and 6 months of data were available from Qld.

3. For 2006–07, data were available from NSW, SA, WA, NT, Tas, ACT and Qld.

Source: National Perinatal Data Collection.

Figure 2.14a: Women who smoked during pregnancy, 2001–2007
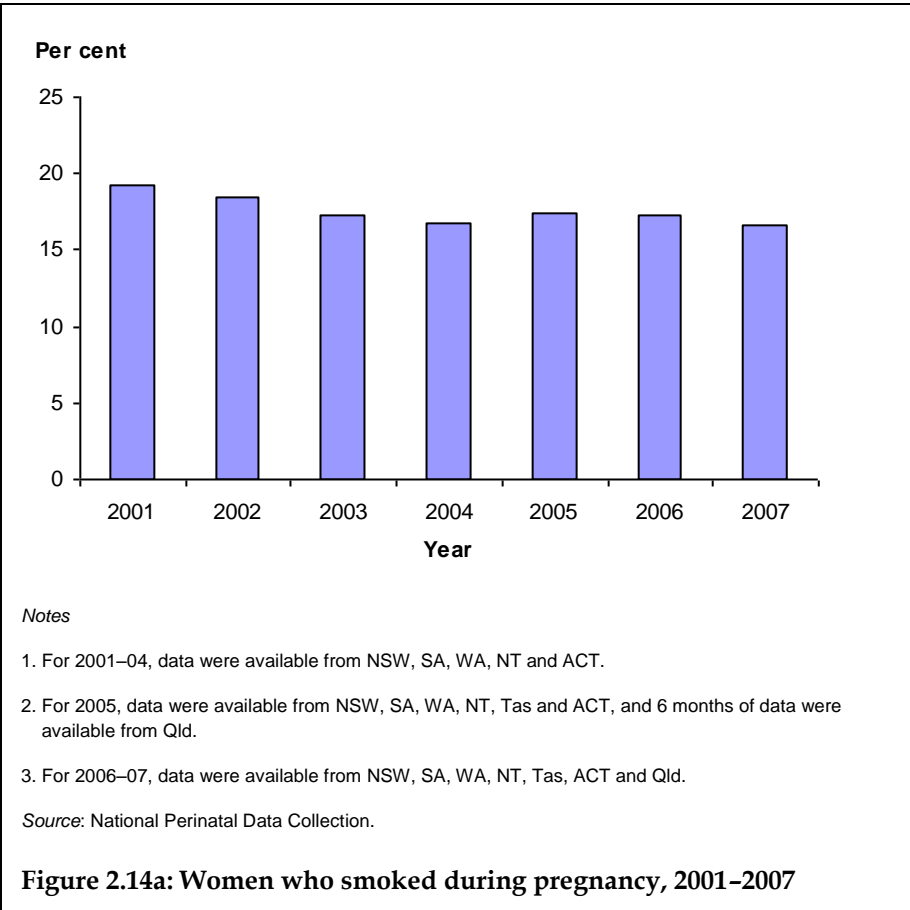
The highest rates of smoking during pregnancy are for younger mothers, those aged less than 20 years (Figure 2.14b). These rates reduce with age to about 11% of all mothers aged 30 years and over.

Per cent

Source: National Perinatal Data Collection.

Figure 2.14b: Women who smoked during pregnancy by age group, 2007
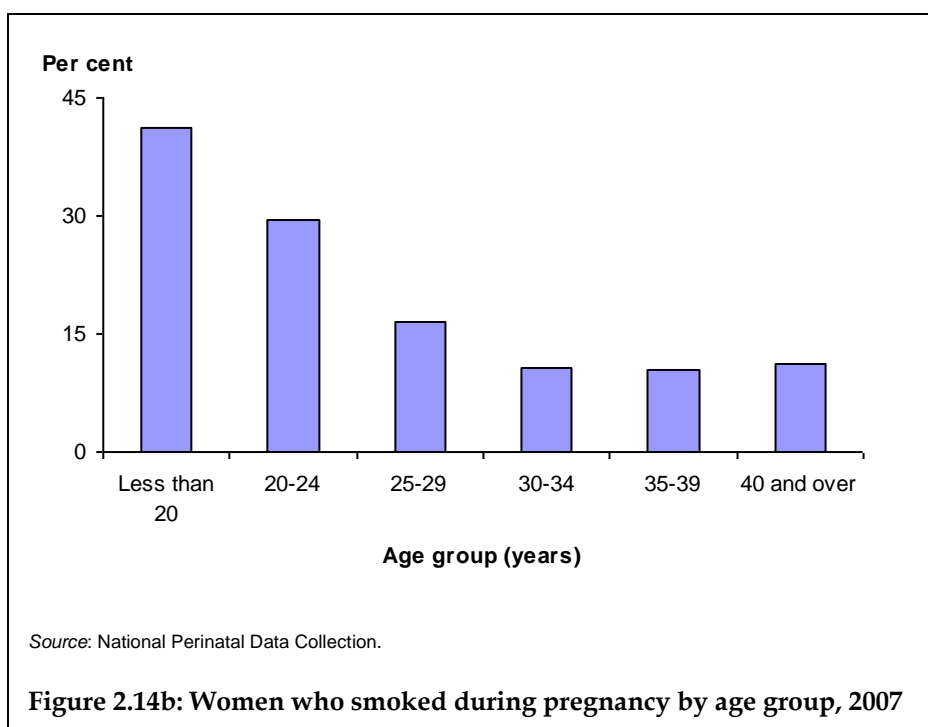
Smoking during pregnancy also varies by the mother's Indigenous status, and by place of residence at the time of the birth (Table 2.14). Those women who were Indigenous, lived in *Very remote* areas of Australia or lived in areas classified as most disadvantaged, all had higher rates of smoking during pregnancy compared with non-Indigenous women or with those who lived in *Major cities* or in less disadvantaged areas. Although not as pronounced, data for low birthweight babies followed the same patterns (see Indicator 1.7).

Table 2.14: Women who smoked during pregnancy by selected characteristics, 2007 (per cent)

Variable	Per cent
Indigenous status	
Indigenous	51.8
Non-Indigenous	14.8
Geographic area	
Major city	12.7
Very remote	36.7
Socioeconomic status	
1st quintile	25.6
5th quintile	6.0

Notes
1. For information about socioeconomic status and geographic region, please refer to Appendix 1.
2. Rates in Table 2.14 are crude rates, expressed as a percentage.

Source: National Perinatal Data Collection.

2.15 Smoking in young people

Rationale

Smoking is the single most preventable cause of ill health and death in Australia. Monitoring the prevalence of smoking in young people (12–17 years of age) allows for the monitoring of outcomes of anti-smoking campaigns and assessment of target groups for intervention, with the aim of reducing the number of teenagers who smoke currently and into adulthood. Interested readers should also note information for Indicator 1.6 on page 28 of this report.

What the data show

Latest estimates from the 2007 NDSHS show that 3.2% of young people smoke on a daily basis (Figure 2.15a). These data also indicate that daily smoking becomes more prevalent with age; a smaller proportion of young people aged 12–15 years smoke on a daily basis compared with those aged 16–17 years (2% compared with 5.7%). Readers should note that the estimate for the younger age group has a relative standard error that is greater than 25% and less than 50% and so should be used with caution.

Note: The estimate for daily smoking for young people aged 12–15 years has a relative standard error (RSE) that is greater than 25% and less than 50% and so should be used with caution.

Source: 2007 NDSHS.

Figure 2.15a: Daily smoking in young people by age group, 2007
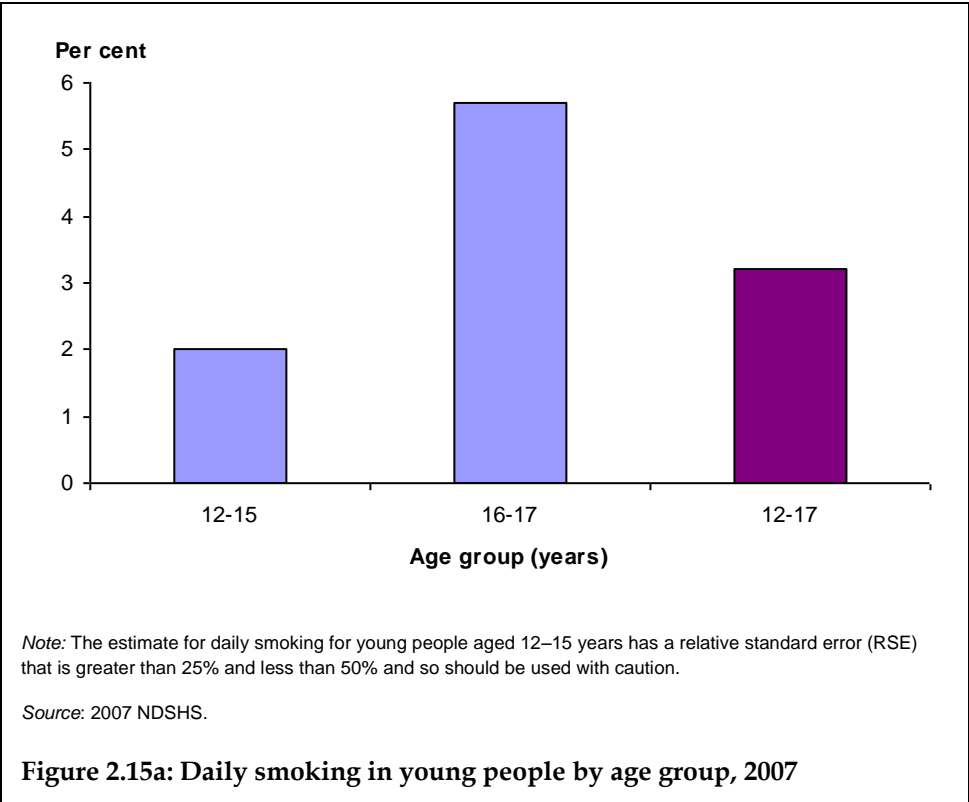
The proportion of daily smokers in 2007 is less than the proportion of daily smokers in 2004 (5.2%). However, information about smoking for the 12–17 years age group has only been collected for two surveys, meaning that confirming a trend (as per the specifications on page 8 of this report) is not possible.

Trend data are available for young people aged 14–17 years, and these show that daily smoking in young people is reducing over time (Figure 2.15b).

70
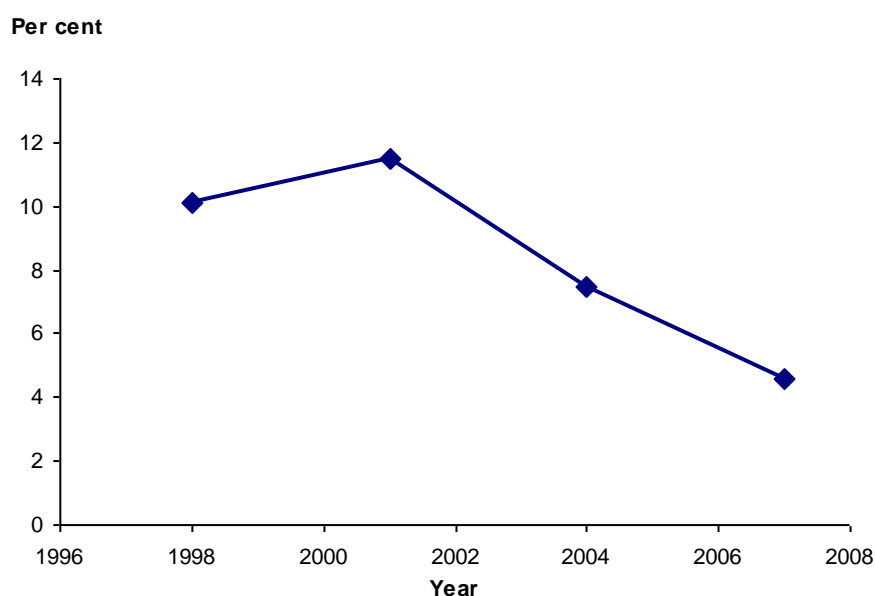
Source: NDSHS series.

Figure 2.15b: Daily smoking in young people, aged 14–17 years, 1998–2007

Due to the small numbers surveyed in the younger age groups, it is difficult to make reliable comparisons for that population by selected variables. When disaggregated by geographic or socioeconomic variables, the relative standard errors suggest that results should be interpreted with caution.

Table 2.15: Daily smoking in young people aged 12–17 years by selected variables, 2007 (per cent)

Variable	Per cent
Geography	
Major city	2.9
Other areas	3.8[a]
Socioeconomic status[b]	
1st quartile	4.6[a]
4th quartile	1.9[a]

(a) This estimate has a relative standard error of more than 25% and less than 50% and so should be used with caution.

(b) For information about socioeconomic status and geographic region, please refer to Appendix 1.

Source: 2007 NDSHS.

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2.16 and 2.17 Insufficient fruit and vegetable consumption

Rationale

These two indicators describe levels of insufficient fruit and vegetable consumption. NHMRC dietary guidelines (NHMRC 2003a, 2003b) recommend that both adults and children eat plenty of vegetables and fruits. These recommendations are based on epidemiological evidence that people who regularly eat diets high in fruits and vegetables (including legumes) have lower risks of certain chronic conditions such as heart disease and Type 2 diabetes, and some eye diseases, such as cataracts and macular degeneration. The Australian Cancer Council (ACC) also states that a healthy diet may protect against cancers including cancer of the bowel, liver, oesophagus (food pipe), lung and stomach (ACC 2009). The ACC also notes that poor eating habits can also contribute to weight gain; being overweight or obese increases your risk of cancer.

The recommended number of daily servings of fruit and vegetables for adults is two servings of fruit and five servings of vegetables each day. For children, these recommendations differ by age group; the recommended servings for each age group are documented in the *Technical report* (AIHW 2009a).

Because the sources of data and the technical specifications for both these indicators are the same, these two indicators have been combined for reporting. Readers should note that the technical specifications record the starting age of these indicators as 4 years (in line with the dietary guidelines); however, information is only available from 5 years of age from the latest NHS.

What the data show

Results from the latest NHS show that most people do not consume enough fruit or vegetables (Figure 2.16 and 2.17). Readers should be aware, however, of some issues with the NHS data. First, the NHS did not include fruit or vegetable juices in the definitions of servings, while the NHMRC guidelines do; therefore, actual intakes are likely to be higher than reported (possibly more for fruit than vegetables). Second, children consuming one or fewer serves of fruit have been classified as 'insufficient' because it is not possible to separate those eating less than one serve from those eating a whole serve. However, the NHMRC guidelines note that for children aged 4 to 11 years, one serve of fruit is sufficient.

In 2007–08, 38% of children aged 5-17 years did not consume sufficient serves of fruit, and 60% did not consume sufficient serves of vegetables (Figure 2.16). For the same year, 49% of adults did not consume the recommended serves or fruit, and 91% did not consume the recommended amount of vegetables (Figure 2.17). There are no trend data for vegetable consumption for children aged less than 12 years or for adults.

Notes

1. Servings do not include fruit or vegetable juices.

2. Those children eating 1 or less serves, have been classified as 'insufficient'.

Source: ABS 2009b.

Figure 2.16: Children aged 5–17 years, sufficiency of fruit and vegetable consumption by age group, 2007–08

Note: Sufficient or insufficient levels of vegetable consumption are not available from the 2001 NHS.

Source: AIHW analysis of the NHS series.

Figure 2.17: Insufficient consumption of fruit and/or vegetables for adults, 2001 to 2007–08

2.18 Breastfeeding

Rationale

The benefits of breastfeeding exist for both the mother and the infant (NHMRC 2003b). The NHMRC recommends exclusive breastfeeding (that is, the infant receives only breastmilk and no other food or drink, including water) from birth to six months of age to give infants the best nutritional start. The WHO further recommends that infants should receive nutritionally adequate and safe complementary foods while breastfeeding is continued for up to 24 months and beyond (WHO 2003).

What the data show

At the time of writing, there were no available data that allow exclusive breastfeeding to be measured in Australia. There are also difficulties in measuring exclusive breastfeeding at six months because that is the age that solid foods are commonly introduced into the infant's diet. The *Children's Headline Indicators* (AIHW 2008c) specify that data about exclusive breastfeeding should be collected for infants at four and six months of age.

The latest national data that provide an insight into breastfeeding practices come from two waves of the Longitudinal Study of Australian Children (LSAC); however, they only provide an indication of predominant and complementary breastfeeding (Figure 2.18).

Note: Predominant breastfeeding, sometimes referred to as fully breastfeeding, is when an infant is predominantly breastfed but also receives other liquids such as water-based drinks or fruit juices. Complementary breastfeeding is where the infant receives other forms of food or liquids in addition to breast milk.

Source: AIFS 2008.

Figure 2.18: Breastfeeding of infants by age, 2004

In 2010–11, the AIHW undertook the Australian National Infant Feeding Survey. This national survey contacted the parents or guardians of 52,000 infants aged 0–24 months. Information gathered by this survey will provide insight into the proportions of infants who are exclusively breastfed, as well as parents'/guardians' experiences about early childhood feeding and the types of support that may be helpful to them in that area.

The survey was enumerated in late 2010 and early 2011. First results from this survey are expected to be available in mid-2011.

2.19 Risky alcohol consumption

PI 7

Rationale

The consumption of excessive levels of alcohol on a regular basis contributes to the development of chronic conditions such as liver disease, some cancers, problems with oral health and cardiovascular disease. Preventing harm from alcohol is one of the three focus areas of the National Preventative Health Taskforce (NPHT 2009).

The statistics around this indicator are based on risk to health in the long term and their relationship to chronic disease. However, it is important to note that alcohol consumption also impacts people in the short term, and is a main contributor to drug-related deaths, injuries and hospitalisations (NHMRC 2009).

What the data show

In 2007, 10.3% of persons aged 14 years or over drank alcohol at levels considered to be risky for long-term health (AIHW 2008e). This level of drinking has remained relatively stable over the three surveys from which comparable data are available (Figure 2.19: inset). It should be noted that the levels of risk are based on the Australian Alcohol Guidelines (see
Appendix 1) that were developed in 2001 (NHMRC 2001). Since the development of this indicator set, these guidelines were revised (NHMRC 2009); however, data to report against them are not yet available.

Note: Data for the inset are age standardised to the Australian ERP as at 30 June 2001.

Source: 2007 NDSHS.

Figure 2.19: Persons aged 14 years and over who consumed alcohol at levels considered to be risky or high risk for long-term health, by age and sex, 2007, and over time 2001–2007
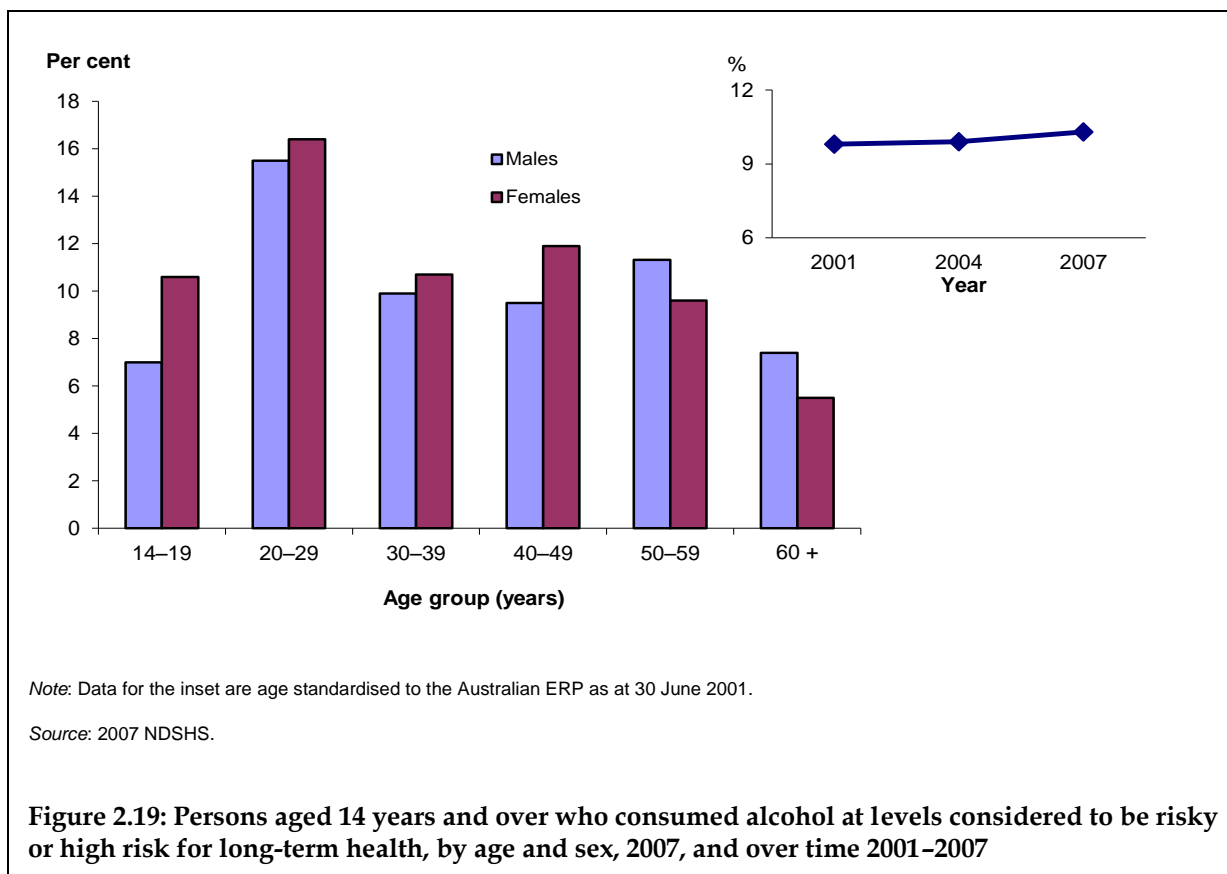
Results from the 2007 NDSHS show that higher proportions of females (aged less than 50 years) consume alcohol at risky levels compared with males in the same age groups (Figure 2.19). For those aged over 50 years, this pattern reverses and higher proportions of males drink at risky levels. For both genders, drinking at risky levels is more common in the 20–29 year age group than in any other age group. Males, however, tend to drink more often and are less likely to be abstainers (AIHW 2008e).

Risky alcohol consumption varies by population characteristics. For example, people living in *Major cities* are less likely to consume at risky levels than their counterparts who live in *Remote and very remote* areas; in addition, they are more likely to be abstainers or ex-drinkers (Table 2.19). Indigenous people are more likely than non-Indigenous people to drink at risky levels; however, they are also more likely to be abstainers or ex-drinkers.

Table 2.19: Persons aged 14 years or over by selected variables, 2007 (per cent)

Variable	Percentage who consume alcohol at risky or high risk levels for long-term health	Percentage who abstain from alcohol consumption or who are ex-drinkers
Indigenous status[a]		
Indigenous	15.0	29.0
Non-Indigenous	14.0	15.0
Geography		
Major city	9.8	17.3
Remote and very remote areas	15.3	12.6
Socioeconomic status		
1st quintile	10.8	22.5
5th quintile	11.5	11.5

(a) Data comparing Indigenous people to non-Indigenous people are for those aged 18 years and over and are sourced from AIHW 2009b. They are age standardised to the 2001 Australian ERP as at 30 June 2001.
Note: For information about socioeconomic status and geographic region, please refer to Appendix 1.
Source: AIHW 2008e.

2.20 Physical inactivity

Rationale

Physical activity is beneficial for preventing and managing chronic disease, and can help with maintaining a healthy body weight and a healthy musculoskeletal system. There are also positive links between physical activity and psychological wellbeing. The National Physical Activity Guidelines (NPAG) for Australians recommend that, to achieve benefits to health, a person should participate in 30 minutes of at least moderate-intensity physical activity on most days of the week (DHAC 1999). For the purposes of calculating 'sufficient' activity, this is generally interpreted as 30 minutes on at least 5 days of the week, making a total of at least 150 minutes activity per week (AIHW 2003). Insufficient physical activity is therefore defined as less than 150 minutes per week and in less than 5 days; it includes sedentary behaviour.

In 2003, physical inactivity accounted for an estimated 7% of the burden of disease and injury in Australia (Begg S 2007).

What the data show

In 2007–08, 60% of adults were not active enough to confer a health benefit (as per the definition above). Females were slightly more insufficiently active than males (62% compared with 58%). For both sexes, inactivity increased with age (Figure 2.20).

Notes
1. The NHS did not collect sessions of physical activity; therefore, days of physical activity is used as a proxy.
2. Based on physical activity in the week prior to the interview.
3. Records for those people who could not report time spent on physical activity, or the number of days of physical activity, were excluded.
Source: AIHW analysis of the 2007–08 NHS.

Figure 2.20: Adults who were not sufficiently active to confer a health benefit, by age group and sex, 2007–08

Levels of physical inactivity differ by where people live (Table 2.20). For both males and females, those who live in *Other* areas of Australia are more likely to be more inactive than those who live in *Major cities*. Similarly, those who live in more disadvantaged areas are more likely to be inactive than those who live in less disadvantaged areas.

Table 2.20: Physical inactivity for adults by selected characteristics, 2007–08 (per cent)

	Males		Females	
Indigenous[a][b]	Indigenous males	67.0	Indigenous females	82.0
Geography[c]	Major city	55.6	Major city	62.6
	Other areas	60.8	Other areas	64.7
Socioeconomic status[c]	1st quintile	63.6	1st quintile	67.4
	5th quintile	47.8	5th quintile	55.2

(a) Based on results from the 2004–05 NATSIHS and sourced from ABS & AIHW 2008. They are for non-remote areas only.
(b) Physical activity for Indigenous people is based on frequency, intensity and duration of walking for exercise or recreation, sport or fitness in the two weeks prior to interview. Therefore, the methodology differs to that used to derive physical inactivity from the 2007–08 NHS.
(c) For information about socioeconomic status and geographic region, please refer to Appendix 1. Other areas includes *Outer regional* and *Remote* areas.
Note: Records for those people who could not report time spent on physical activity, or number of days of physical activity, were excluded.

Findings from the 2004–05 NATSIHS showed that Indigenous females were more likely to be inactive (based on no or low levels of exercise) than Indigenous males (82% compared with 67%). When results were adjusted for different age structures in the Indigenous and non-Indigenous populations, they showed that Indigenous Australians were more likely than non-Indigenous Australians to be sedentary or to exercise at low levels (ABS & AIHW 2008).

Evidence is emerging that links prolonged time spent sitting (such as at the computer or watching television) with poorer health outcomes for individuals, and this is regardless of any other physical activity taken during the same day (Dunstan et al. 2010). Research is also showing that there are negative health effects from prolonged screen time (when watching television/DVDs/videos and computers) in young people; however, more studies need to be undertaken to determine how much sitting time (screen time) constitutes a health risk (Barclay 2010). This new evidence suggests that measuring physical activity/inactivity as well as sitting time may be required in the future to enhance information about risk factors for chronic disease. Currently there are no national data available to measure total sitting time; however, at the time of writing this report, questions about total sitting time were expected to be included in the next Australian Health Survey (see *Future directions* on page 14). Results from the 2007–08 NHS show that 78% of adults spend more than two hours sitting at leisure on a usual day, and of those who are employed full time, 43% spend more than 4 hours sitting at work on a usual day (AIHW analysis of the NHS).

2.21 Deaths from leading chronic conditions

Rationale

Chronic conditions are among the leading causes of death in Australia. Alongside incidence and prevalence data, information on mortality from the leading chronic conditions further describes the picture of prevention of chronic disease in Australia.

This indicator describes patterns in deaths from common chronic conditions, namely ischaemic heart disease (IHD), lung cancer, stroke, breast cancer, bowel cancer, COPD, dementia, end-stage kidney failure, Type 2 diabetes, liver cancer, asthma and prostate cancer. Many deaths caused by these conditions are preventable; therefore, monitoring them is useful to health professionals, governments and researchers. By better understanding premature mortality, resources can be targeted to high risk areas.

As advancements in the treatment and management of chronic disease occur, there may be changes in the occurrence and distribution of deaths due to these particular diseases. As such, what constitutes a 'leading' or 'common' chronic condition may change over time.

This section makes the distinction between all mortality (deaths occurring at all ages) from chronic conditions and premature mortality (deaths occurring before the age of 75 years) from the same conditions. For further information on the contribution of chronic disease to all premature deaths, see *Indicator 1.10: Deaths from leading potentially preventable chronic diseases*. Readers may also be interesting in *Premature mortality from chronic disease* (AIHW 2010f), which is available on the AIHW website <www.aihw.gov.au>.

Readers should also note that from 2007 there were changes to mortality data which may affect the presentation of trends in the future. See Appendix 1 for details about this.

What the data show

In 2007, there were 34,514 male deaths and 34,676 female deaths from the chronic conditions listed above (comprising 49% of all male deaths and 52% of all female deaths occurring in that year). A substantial proportion (almost one-third) of deaths due to these conditions are considered 'premature'; that is, occurring before 75 years of age (Figure 2.21).

Mortality from these chronic conditions among the total population has declined by 41% over the last decade—from 417 deaths per 100,000 population in 1997 to 297 deaths per 100,000 population in 2007 (Figure 2.21). Premature mortality, over the same time, has shown a greater decline—from 153 to 94 deaths per 100,000 population (a decrease of 63%).
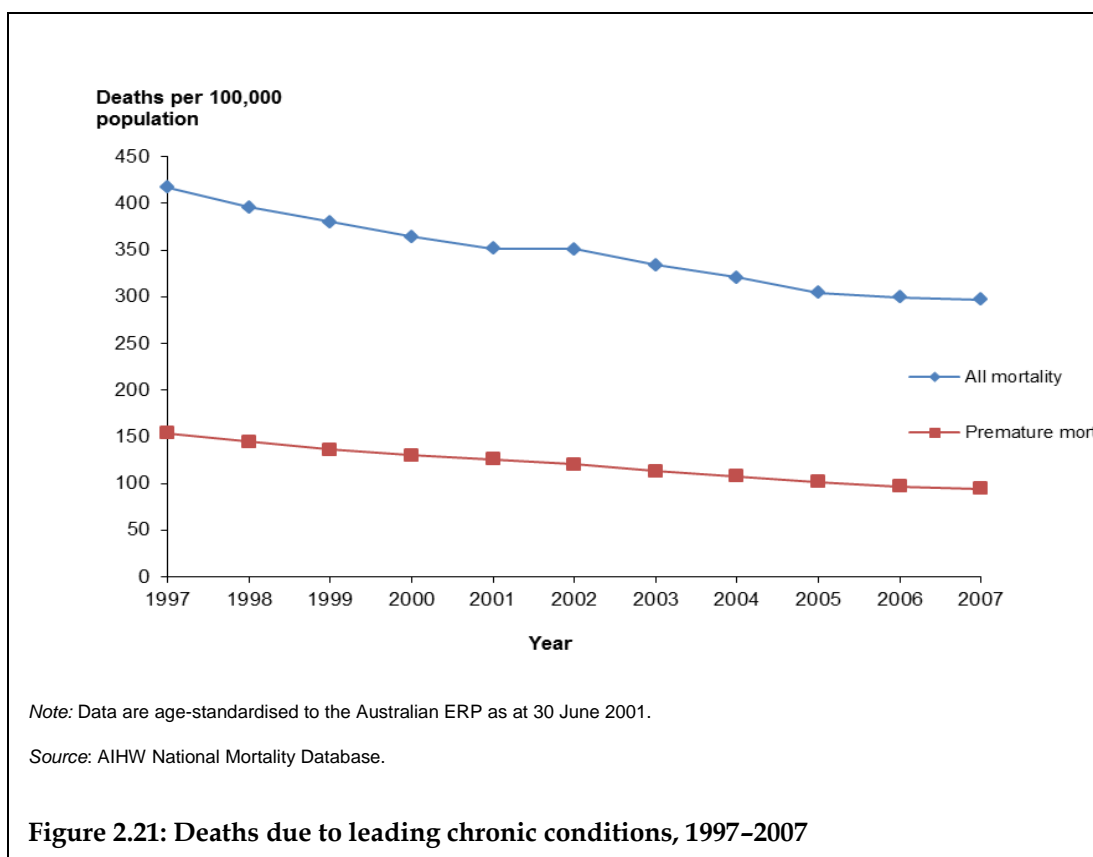
Figure 2.21: Deaths due to leading chronic conditions, 1997–2007

Among the total population (all ages) in 2007, IHD was the most common cause of death followed by lung cancer for males and stroke for females (Table 2.21). IHD was the most common cause of premature death for males, while breast cancer was the most common cause of premature death for females.

Table 2.21: Deaths from leading preventable chronic diseases by sex, 2007

Underlying cause of death	Premature mortality[a]				All mortality			
	Male rate[b]	Rank	Female rate[c]	Rank	Male rate[b]	Rank	Female rate[c]	Rank
Ischaemic heart disease	43.2	1	13.2	3	115.7	1	100.1	1
Lung cancer	26.4	2	16.0	2	45.0	2	27.5	4
Bowel cancer	12.2	3	8.4	4	21.2	6	17.8	7
Stroke	10.4	4	8.3	5	43.1	3	65.8	2
COPD	8.5	5	6.3	6	28.3	4	20.6	6
Prostate cancer	7.6	6	. .	. .	28.0	5	. .	. .
Liver cancer	4.7	7	1.9	8	6.8	10	3.7	10
Type 2 diabetes	2.5	8	1.6	9	7.4	9	7.6	9
Dementia	2.2	9	2.1	7	23.1	7	46.3	3
End-stage kidney failure	1.7	10	1.4	10	9.3	8	10.1	8
Asthma	0.7	11	0.9	11	1.3	11	2.4	11
Breast cancer	0.1	12	17.1	1	0.2	12	25.3	5

. . Not applicable.
(a) Premature mortality is defined as deaths occurring in the population aged less than 75 years.
(b) Deaths per 100,000 males.
(c) Deaths per 100,000 females.
Note: Based on commonly accepted ICD-10 code groupings (see Appendix 1).
Source: AIHW National Mortality Database.

2.22 Deaths from suicide

Rationale

This indicator describes deaths due to suicide. Current research indicates that there are links between suicide and mental illness, but the extent of these is not known. Interested readers should also refer to information provided for Indicators 1.2, 1.3 and 2.9.

Readers should also note that from 2007 there were changes to mortality data which may affect the presentation of trends in the future. In particular, these changes are likely to have an effect on suicide deaths rates. See Appendix 1 for details about this.

What the data show

In 2007, there were 1,880 deaths coded to suicide (8.9 deaths per 100,000); 1,453 were male deaths and 427 were female. The age-standardised death rate due to suicide has reduced overtime, by an average annual rate of 4.4% (AIHW 2010c) (Figure 2.22a). The majority of the reduction is from decreases in male suicides.

Source: AIHW 2010c.
Note: Suicide rates are age-standardised to the Australian ERP as at 30 June 2001.

Figure 2.22a: Deaths due to suicide by sex, 1997–2007
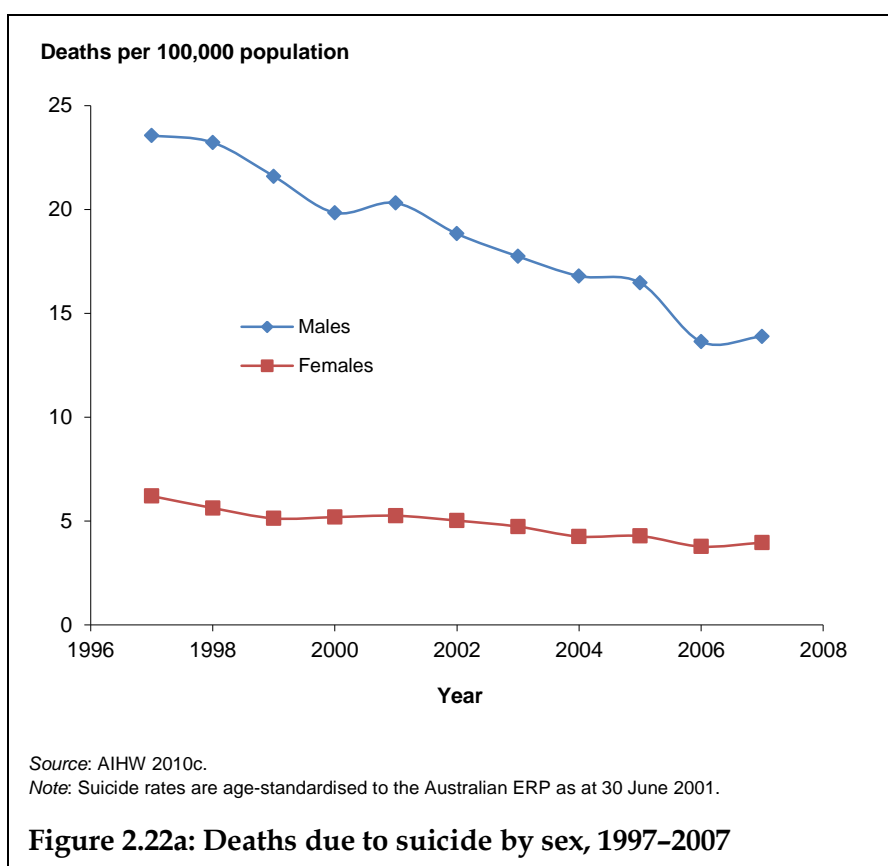
Suicide rates vary by age group (Figure 2.22b). In 2007, male rates peaked in the 25-34 and 35–44 year age groups at just over 20 deaths per 100,000 age-specific male populations. For females, rates peaked in the 35–44, 45–54 and 55–64 year age groups at 5.6 per 100,000 female age-specific populations on average.

Deaths per 100,000 population

Figure 2.22b: Suicide rates by age group by sex, 2007
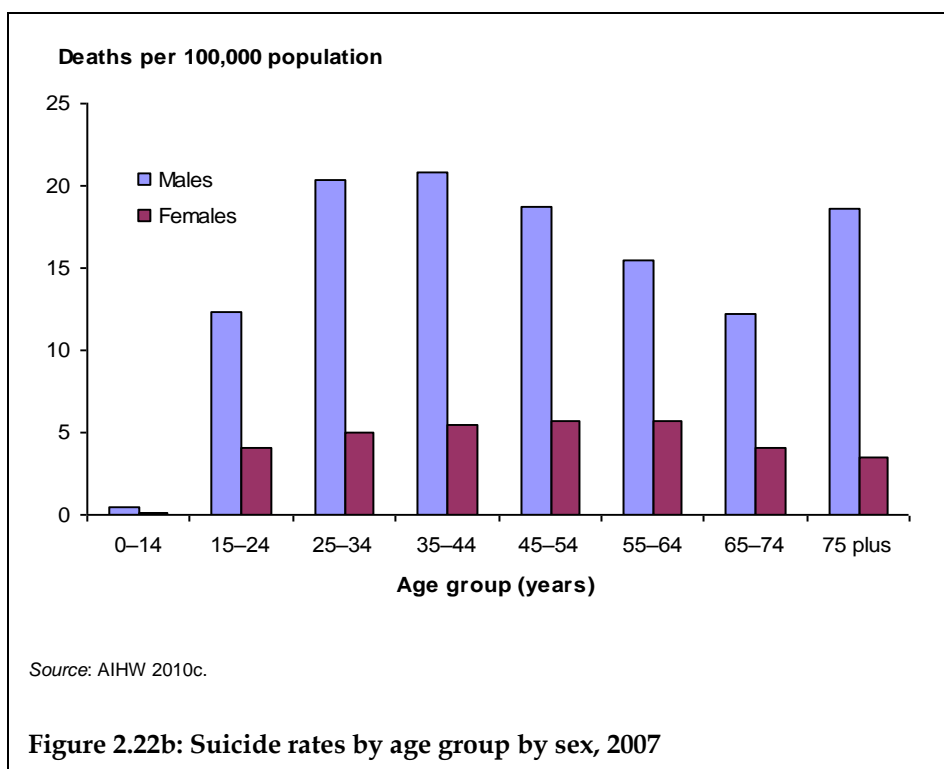
There was no discernable pattern in suicide rates by socioeconomic status, with both ends of the spectrum reporting similar rates (Table 2.22). However, suicide rates did differ by geographic region, where people who lived in *Remote and very remote* areas of Australia had three times the suicide rate of those living in *Major cities*.

Indigenous people have twice the rate of suicide compared to non-Indigenous people. In calculating any Indigenous mortality rates, readers should note that data from five states and territories are used, and the years of data are aggregated to provide sufficient numbers for reliable analysis.

Table 2.22: Suicides by selected variables, 2007

Variable	Per 100,000 population
Socioeconomic status	
1st quintile	8.2
5th quintile	8.7
Geography	
Major city	9.6
Remote and very remote	21.1
Indigenous	
Indigenous	18.1
Non-Indigenous	9.1

Notes

1. For information about socioeconomic status and geographic region, please refer to Appendix 1.
2. For Indigenous and non-Indigenous comparisons, mortality data from the following states and territories are used: NSW, Qld, WA, SA & NT, and are for 2003–07.
3. Readers should refer to Appendix 1 for information about changes to the mortality database.
4. Rates are age-standardised to the Australian ERP as at 30 June 2001.
Source: AIHW National Mortality Database.

2.23 Asthma action plan

Rationale

An asthma action plan is a written plan that is developed by the doctor with the patient. It is designed to provide the patient (or their carer) with clear instructions about early intervention measures to take if a patient's asthma condition worsens. Using an asthma action plan has shown to help those with asthma by reducing hospital admissions, absences from work or school, emergency visits to general practitioners and reliever medication use, as well as improving lung function (NAC 2008).

Asthma action plans are considered a key element in the effective treatment of asthma. This indicator measures whether they are being provided as recommended by the National Asthma Council Australia (NAC 2006).

What the data show

In 2007–08, 21% of people who had reported asthma as a long-term condition also had an asthma action plan. Slightly higher proportions of females than males had action plans (12% compared with 9%) (Figure 2.23a).

Note: Age standardised to the 2007–08 population who have asthma.

Source: AIHW analysis of the NHS series.

Figure 2.23a: Proportions of people who have asthma and who have a written asthma action plan, 2001 to 2007–08
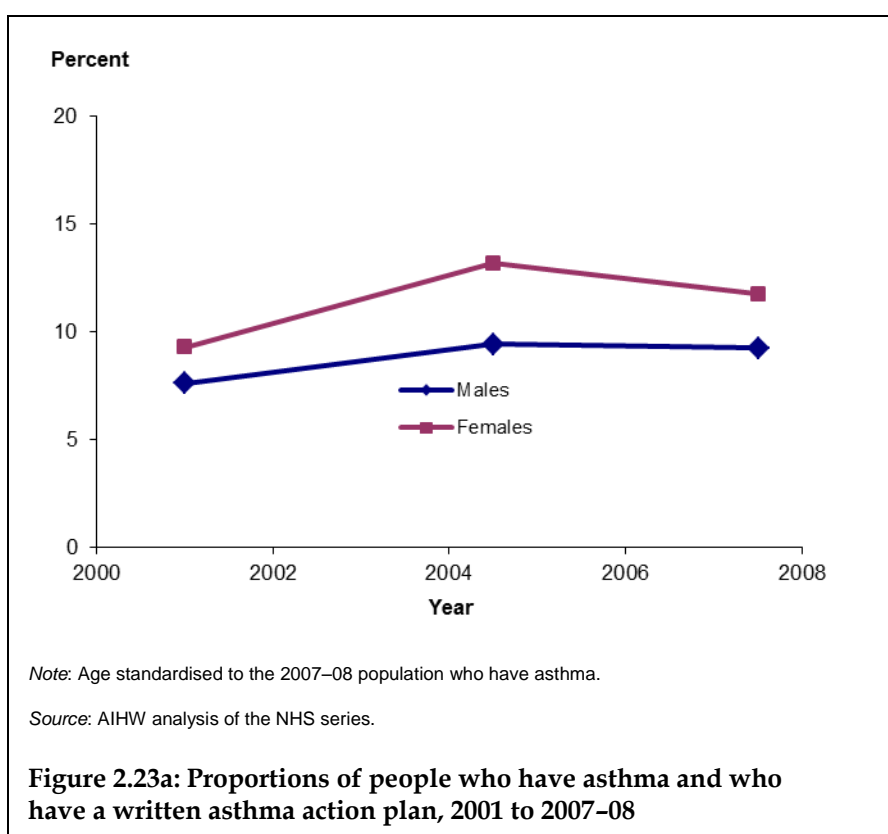
Having an action plan differs by age (Figure 2.23b). Children (aged less than 15 years) are more likely to have a plan compared with people in other age groups (46% of male children and 51% of female children). The proportions having action plans are the lowest in the 25–34 year age group.

Source: AIHW analysis of the 2007–08 NHS.

Figure 2.23b: Proportions of people who have asthma and who have a written asthma action plan by age group, 2007–08
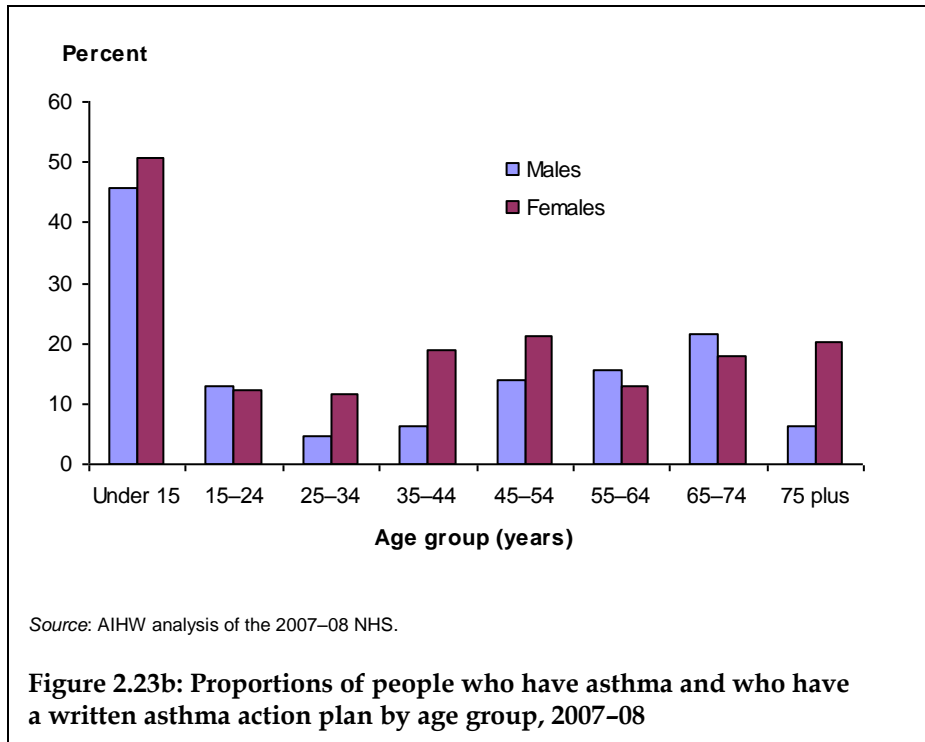
Having an asthma action plan does not vary by where a person lives in terms of remoteness, or by Indigenous status (Table 2.23). When analysed by socioeconomic disadvantage, those living in areas of most disadvantage had higher rates of having an asthma action plan than those living in areas of least disadvantage.

Table 2.23: Proportions of people who have asthma and who have a written asthma action plan by selected variables, 2007–08 (per cent)

Variable	Per cent
Indigenous status[a]	
Indigenous	24.7
Non-Indigenous	22.4
Socioeconomic status[b]	
1st quintile	17.8
5th quintile	24.8
Geographic[b]	
Major city	20.7
Other areas	19.4

(a) Estimates are from AIHW 2009b, and were age standardised to the Australian ERP as at 30 June 2001.

(b) AIHW analysis of the 2007–08 NHS. Estimates have been age standardised to the 2007–08 survey population.

Note: For information about socioeconomic status and geographic region, please refer to Appendix 1. Data for geographic region and socioeconomic status were age standardised to the 2007–08 survey population.

2.24 Potentially preventable hospitalisations—detailed
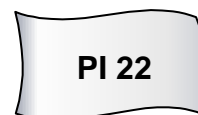
Rationale

This indicator shows the individual contributions of selected chronic disease to the composite Indicator 1.11 on page 36 of this report.

What the data show

The data show that for most chronic conditions, the age-standardised rates of potentially preventable hospitalisations have remained relatively stable (Figure 2.24). Decreases in hospitalisations have occurred for both angina and asthma. Increases have occurred for hospitalisations for diabetes complications (except for the last year) and iron deficiency anaemia. The introduction of changes in clinical coding rules in June 2008 (to ensure that additional diagnoses were only coded) had a substantial impact on the coding of diabetes complications in particular. Readers should also note comments for Indicator 1.11 regarding the interpretation of data.

Notes

1. Separations for which the care type was reported as *Newborn with no qualified days* and records for *Hospital boarders* and *Posthumous organ procurement* have been excluded.
2. Excludes multiple diagnoses for the same separation within the same group.
3. The separation rates for 2003–04 provide a reference category (have a value of 1.0) and are shown as the line in the figure.
Source: AIHW *Australian hospital statistics* series.

Figure 2.24: Rate ratios for potentially preventable hospitalisations: individual conditions, 2003–04 to 2008–09

The most common chronic conditions responsible for potentially avoidable hospitalisations are diabetes complications; the least common condition is nutritional deficiency anaemia (Table 2.24).

Table 2.24: Potentially preventable hospitalisations, individual conditions by year, socioeconomic status and geographic region (rate per 1,000 population)

	Angina	Asthma	COPD	Congestive heart failure	Diabetes complications[a]	Hypertension	Iron deficiency anaemia	Nutritional deficiencies	Rheumatic heart disease[b]
2003–04	2.2	1.92	2.79	2.05	8.25	0.32	0.94	0.01	0.11
2004–05	2.03	1.89	2.67	1.94	9.77	0.29	1.03	0.01	0.11
2005–06	1.87	1.9	2.64	1.91	9.87	0.28	1.08	0.01	0.11
2006–07	1.79	1.79	2.56	1.94	10.43	0.29	1.21	0.01	0.12
2007–08	1.69	1.8	2.69	1.95	10.58	0.27	1.2	0.01	0.12
2008–09	1.5	1.7	2.6	1.9	7.7	0.3	1.2	0.0	0.1
Socioeconomic status[c]									
1st quintile	2.0	2.3	3.8	2.4	10.7	0.4	1.3	0.0	0.2
5th quintile	0.9	1.3	1.7	1.5	4.4	0.2	1.2	0.0	0.1
Geographic area[c]									
Major city	1.2	1.7	2.4	1.8	6.8	0.2	1.2	0.0	0.1
Very remote	2.6	2.5	6.3	3.7	21.3	0.8	1.0	0.1	0.9

(a) Changes to clinical coding rules in June 2008 have resulted in decreases in recorded hospitalisations for diabetes complications.

(b) Rheumatic heart disease includes acute rheumatic fever as well as the chronic disease.

(c) For information about socioeconomic status and geographic region, please refer to Appendix 1. Data for socioeconomic status and geographic region were sourced from the latest *Australian hospital statistics* (AIHW 2010d).

Source: AIHW *Australian hospital statistics* series.

Notes
1. Rates are hospital separations 1,000 per population.
2. All rates are age standardised to the ERP at June 2001.

2.25 Severe or profound activity limitations

Rationale

This indicator describes the prevalence of severe or profound activity limitations. People with disabilities have special needs for assistance on a daily basis. Reporting on the prevalence of disability in the community allows for planning of services and other requirements.

The latest data come from the 2003 Survey of Disability and Ageing and Carers (see *Sources of data* on page 107). The next survey in the series was conducted by the ABS in 2009; however, results from this collection were not available at the time of writing this report. Until they are released, trend data for this indicator are not available for this indicator.

What the data show

In 2003, 6.3% of the population had a disability that was considered severe or profound in terms of core activity limitations (ABS 2004). This equates to about 1.2 million people who needed personal assistance or supervision with core activities of daily living.

For both males and females, proportions of people with disability increased with age; after the age of 70, females started to have higher rates than males (Figure 2.25).

Source: ABS 2004.

Figure 2.25: Proportion of people with a profound or severe core-activity limitation, 2003
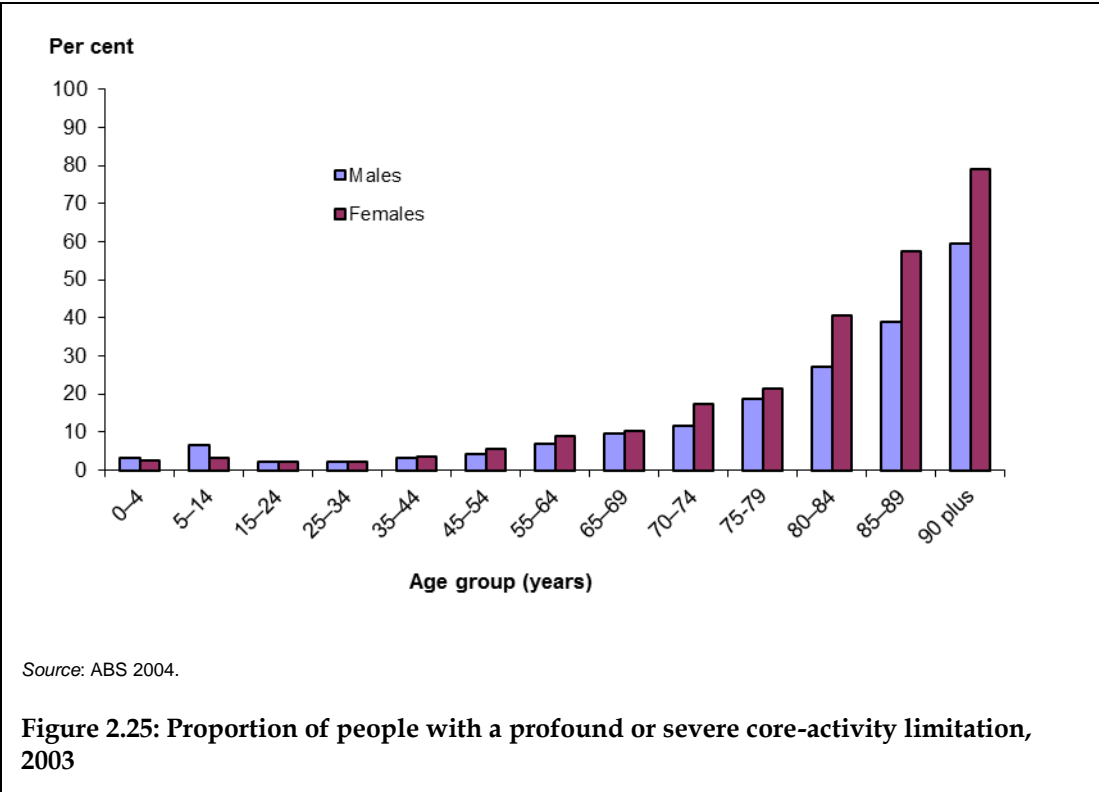
A wide range of physical conditions and mental and behavioural problems can lead to disability and the causes of these can also be varied (for example, genetics or injury). Having a disability is an ongoing problem and so is chronic in nature. As reported for Indicator 2.6, arthritis is a main contributor to all total disability in the Australian population, and is considered the main disabling condition of just over 14% of people with a disability. Table 2.25 shows the top five health conditions that are identified as the main disabling condition for those with profound or severe activity limitation. It is important to note that these are the main disabling conditions, and persons may have more than one disabling condition that impacts upon them.

Table 2.25: Persons with profound or severe core activity limitations, by main health condition that caused the disability, 2003

Profound core-activity limitation		Severe core-activity limitation	
Health condition	Rank	Health condition	Rank
Arthritis and related disorders	1	Other diseases of the musculoskeletal system	1
Dementia and Alzheimer's disease	2	Arthritis and related disorders	2
Other diseases of the musculoskeletal system	3	Other physical conditions[a]	3
Intellectual and developmental disorders	4	Injury, poisoning and other external causes	4
Diseases of the nervous system[b]	5	Diseases of the nervous system[b]	5

(a) Includes infections and parasitic diseases, diseases of the blood and blood-forming organs, skin conditions, genito-urinary system disease and symptoms and signs not elsewhere classified. Excludes cancers, endocrine, nutritional and metabolic disorders, disease of the eye, adnexa, ear and mastoid process, circulatory and respiratory systems, digestive systems, congenital and perinatal disorders.

(b) Excludes Alzheimer's disease.

Source: ABS 2004.

In 2003, having profound or severe activity limitations was not associated with where people lived (ABS 2004); that is, rates of disability were similar across states and territories, and by geographic regions of Australia.

Indigenous people experience higher rates of disability. Results from the 2002 NATSISS show that Indigenous adults were twice as likely as non-Indigenous adults to have a profound or severe core activity limitation (ABS & AIHW 2008). To date, no other data have become available that allow for comparison between Indigenous and non-Indigenous people with disabilities.

The Survey of Disability, Ageing and Carers did not collect information by SEIFA (see *Socioeconomic status* in Appendix 1); however, an indication of socioeconomic status was provided by using equivalised gross household income (grouped into quintiles) for those people who lived in households and were aged 15–64 years. The results showed that more people with profound or severe core activity limitations lived in households in the lowest quintile (35.5%) compared with those of the same age who did not have a disability (9.6%).

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Contextual indicators

Socioeconomic characteristics—which include education, employment, income and wealth, family and neighbourhoods, access to services and housing—are all intricately linked to the health of individuals, their families and the communities they live in. Many health outcomes differ vastly by socioeconomic characteristics and often the relationship between a poor health outcome and a poorer socioeconomic characteristic is evident. Where possible, an indicator of socioeconomic status (using SEIFA—see Appendix 1) are provided in relation to the indicators in this report, alongside Indigenous status and geographic place of residence.

The four indicators in this category are not directly related to a single chronic condition or a determinant; however, they provide a broader view of the background to chronic disease. Change in any one, or all, of these indicators may impact the health of individuals or the population. The contextual indicators presented in this report do not form an exhaustive list, and many others were considered for inclusion.

When looking for explanations to changes in health, it is important to investigate beyond standard health indicators.

KEY	✓ favourable	✗ unfavourable	~ no change	. . trend data unavailable or not clear

Indicator no. and name	Measure	Latest year(s)	Value[a]	Trend
C.1 Low income	Low income (P80/P20)	2007–08	2.6	~
C.2 Health literacy	Proportion of the population with adequate health literacy	2006	41%	. .
C.3 Labour force status	Labour force status	2009	65%	~
C.4 Health expenditure	Health expenditure	2007–08	103.6 billion	. .

C.1 Low income

Rationale

Low income can lead to poorer health outcomes as it may reduce access to health care goods and services, food, appropriate housing and other measures which can be taken to prevent illness and injury (AIHW 2010a). While Australia has a high level of overall wealth, there are distinct inequalities in income and wealth among the population.

This indicator provides a snapshot of income inequality among Australians using several common measures from the ABS Survey of Income and Housing. One way of measuring the spread of incomes across the population is the percentile ratio. The P80/P20 ratio used here represents the ratio of equivalised weekly income at the 80th percentile to equivalised weekly income at the 20th percentile.

Also presented here are statistics on disposable income—defined as gross income minus direct income tax and the Medicare Levy (where applicable), which is then adjusted for household composition and size using an equivalence scale.

What the data show

In 2007–08, the household income level of those at the 80th percentile was $1,079 per week, while at the 20th percentile it was $410 (ABS 2009c). The ratio of these two income levels (P80/P20) was 2.63 (Table C1).

A number of methodological improvements were introduced to the ABS Survey of Income and Housing in 2003–04, making it difficult to look at long-term trends (see ABS 2009c: Appendix 4 for details). However, as shown in Table C1, the P80/P20 ratio has remained fairly stable since 1994–95.

Table C1: Equivalised disposable household income 1997–98 to 2007–08

Indicator	1997–98	1999–2000	2000–01	2002–03	2003–04[a]	2005–06[a]	2007–08[a]
Mean income per week($)[b]							
Lowest quintile	214	216	220	225	255	272	299
Second quintile	342	352	360	375	409	444	504
Third quintile	473	494	505	518	562	607	692
Fourth quintile	638	663	677	695	740	805	922
Highest quintile	1,016	1,072	1,104	1,124	1,226	1,368	1,646
All persons	537	559	573	587	638	699	811
Income share							
Lowest quintile	8.0	7.7	7.7	7.7	8.0	7.8	7.4
Second quintile	12.8	12.6	12.6	12.8	12.8	12.7	12.4
Third quintile	17.7	17.7	17.6	17.6	17.6	17.4	17.0
Fourth quintile	23.8	23.7	23.6	23.7	23.2	23.0	22.7
Highest quintile	37.9	38.4	38.5	38.3	38.4	39.2	40.5
All persons	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Ratio of 80th to 20th income percentile							
P80/P20 ratio	2.56	2.64	2.63	2.63	2.55	2.58	2.63

(a) Estimates presented for 2007–08 are not directly comparable with estimates for previous cycles due to the improvements made to measuring income introduced in the 2007–08 cycle. Estimates for 2003–04 and 2005–06 have been recompiled to reflect the new measures of income, but not all components introduced are available to present the years on a comparable basis. See ABS 2009c: Appendix 4 for further information.

(b) In 2007–08 dollars, adjusted using changes in the Consumer Price Index.

Source: ABS 2009c.

In 2007–08, the mean equivalised disposable household income for all persons living in private dwellings was $811 per week (Table C1).

Household incomes in Australia have grown substantially. After adjusting for the break in series and inflation, incomes grew 13% between 2005–06 and 2007–08 (ABS 2009c). For low income people (that is, people living in households with incomes in the second and third deciles), mean equivalised disposable household income increased by 10% between 2005–06 and 2007–08 (ABS 2009c). Over the same time period, the increase was 11% for the middle income quintile and 16% for the highest quintile households. Readers should note that individuals may not necessarily remain in the same income group for an entire period. Through changing circumstances (for example, retirement or death of a partner) households may move up or down the income distribution. Likewise, community standards may change over time, raising the expected minimum level of living standards that can be achieved with household income.

C.2 Health literacy

Rationale

Health literacy refers to the knowledge and skills required by people to access, understand and apply information in order to promote and maintain good health. Being health literate involves knowing what constitutes good quality advice, how and where to seek further information and how to translate information into healthy behaviours (AIHW 2010a). People with higher levels of health literacy are more likely to successfully manage their health. In contrast, low levels of health literacy (and poor health management) can be detrimental to the individual concerned, their family and the broader community.

Data about health literacy come from the 2006 ABS Adult Literacy and Life Skills Survey. An overall measure of health literacy was derived from questions that pertain to five different health activities—health promotion, health protection, disease prevention, health care and information systems navigation (ABS 2008b). This overall measure was rated as one of five levels on a scale from one (lowest) to five (highest). On this scale, level 3 and above is regarded as the minimum level of literacy required to meet the complex demands of everyday life and work (referred to here as *adequate health literacy*).

The proportion of the population with adequate health literacy has been used as the basis for this indicator.

What the data show

Findings from the 2006 Adult Literacy and Life Skills Survey show that overall, 41% of Australians aged 15–74 years have an adequate level of health literacy (ABS 2008b). However, as shown in Figure C2, levels of health literacy vary across age groups. The proportion of the population with adequate health literacy is highest for females at 25–34 years (51%) and for males at 35–44 years (47%). It declines among the older age groups and is lowest among those aged 65–74 years (19% and 16% for males and females, respectively).

Males and females have similar levels of health literacy overall (40% and 41%, respectively). However, females in the younger age groups (15–44 years) tend to have higher health literacy than males in the same group, while the reverse is true at older ages (55–74 years).

Per cent

□ Males ■ Females

60

50

40

30

20

10

0

15–24   25–34   35–44   45–54   55–64   65–74

Age group (years)

Source: ABS 2008b.

Figure C2: Adequate health literacy (level 3 and above) by age and sex, persons aged 15–74 years
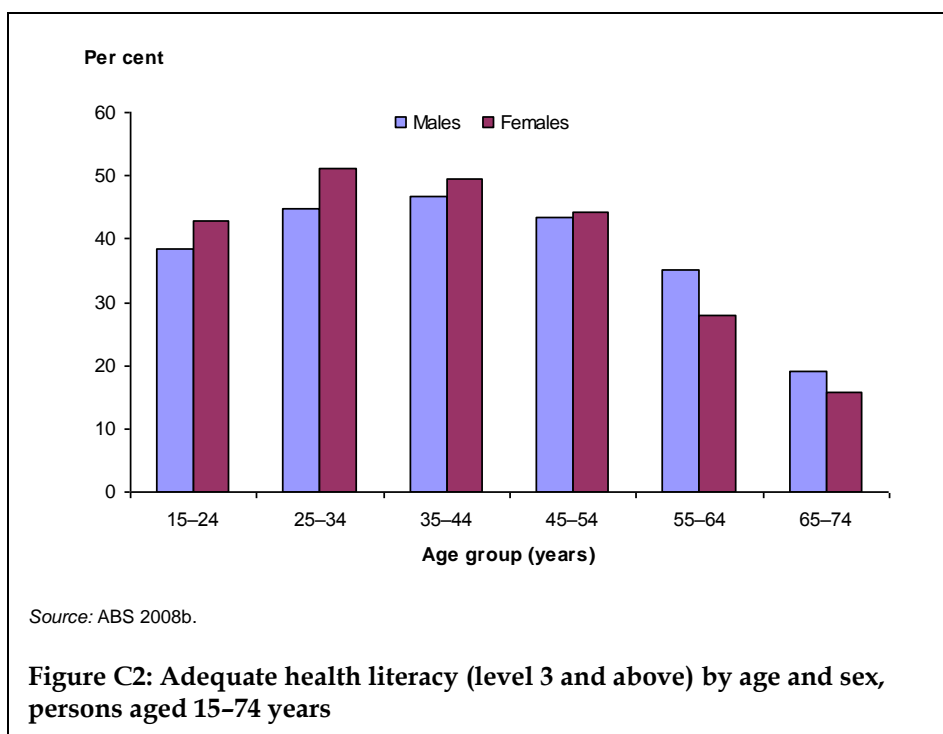
The proportion of the population with adequate health literacy was higher in *Major cities* (42%) compared with areas outside of them (37%) (Table C2). Likewise, people living in areas of less socioeconomic disadvantage (55%) were more likely to have a higher level of health literacy than those in more disadvantaged areas (26%). Those who spoke English as their first language had higher levels of health literacy (44%) compared with those who spoke a language other than English (26%).

The survey also showed that health literacy was higher among people who were employed, had higher levels of formal education, participated in social groups and organisations, or were born in a mainly English-speaking country (ABS 2008b).

Table C2: Adequate health literacy (level 3 and above) by selected characteristics, persons aged 15–74 years (per cent)

Variable	Per cent	Variable	Per cent
Geography[a]		**First language spoken[c]**	
Major city	42.0	English	44.1
Other areas	37.5	Other language	25.8
Socioeconomic status[b]			
1st quintile	25.8		
5th quintile	55.3		

(a) The Adult Literacy and Life Skills Survey does not capture the population living in *Very remote* areas. For information about geographic regions, please refer to the Appendix 1.

(b) For information about socioeconomic status, please refer to the Appendix 1.

(c) 'First language spoken' is the first language an individual masters during the language acquisition phase of intellectual development. This would generally be the language spoken in the home by the people who have raised the individual from infancy.

Source: ABS 2008b.

C.3 Labour force status

Rationale

Socioeconomic factors such as labour force participation, occupation and income are intricately linked to health. Employment (or unemployment) not only has direct social and financial impacts—several studies have highlighted the relationship between labour force participation and disability and mortality rates, health status and mental health (Mathers & Schofield 1998; AIHW 2010a). Likewise, there is increasing awareness that having a healthy workforce is essential for the Australian economy. After adjusting for age and sex, people with chronic disease are 60% more likely to not participate in the labour force and are more to likely to be unemployed, than those without chronic disease (AIHW 2009d).

See Appendix 1 for key definitions related to labour force status.

What the data show

The total civilian population can be divided into those in the labour force (employed and unemployed) and those not in the labour force. In an average month of 2009, there were 17.5 million people aged over 15 years in the civilian Australian population (ABS 2010). Of these, almost two-thirds (65%) were in the labour force—this figure was 72% for males and 59% for females. The majority (94%) of those in the labour force were employed—only 6% of those included in the labour force count were unemployed.

Figure C3 shows labour force status for males and females in the civilian population. Higher proportions of males than females were employed full time while this pattern was reversed for part-time employment and those not in the labour force.

Source: ABS 2010.

Figure C3a: Labour force status, people aged 15 years and over by sex, 2009 (monthly average)
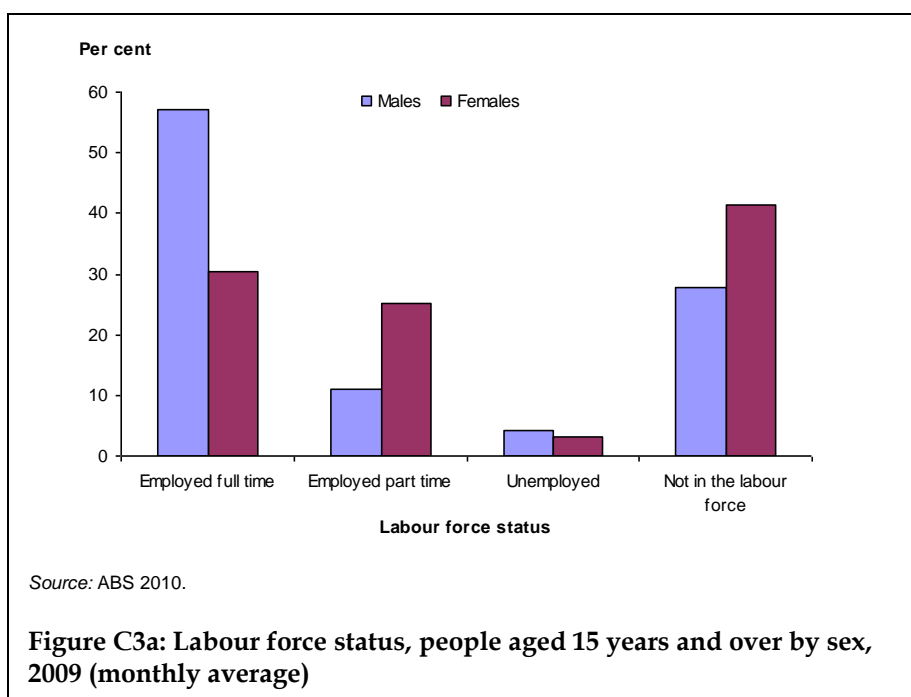
As shown in Figure C3b, the proportion of the population who are employed (either part time or full time) peaks at ages 45–54 years and decreases thereafter.

Note: 'Employed' includes persons working full time or part time.

Source: ABS 2010.

Figure C3b: Labour force status by age, people aged 15 years and over, 2009 (monthly average)
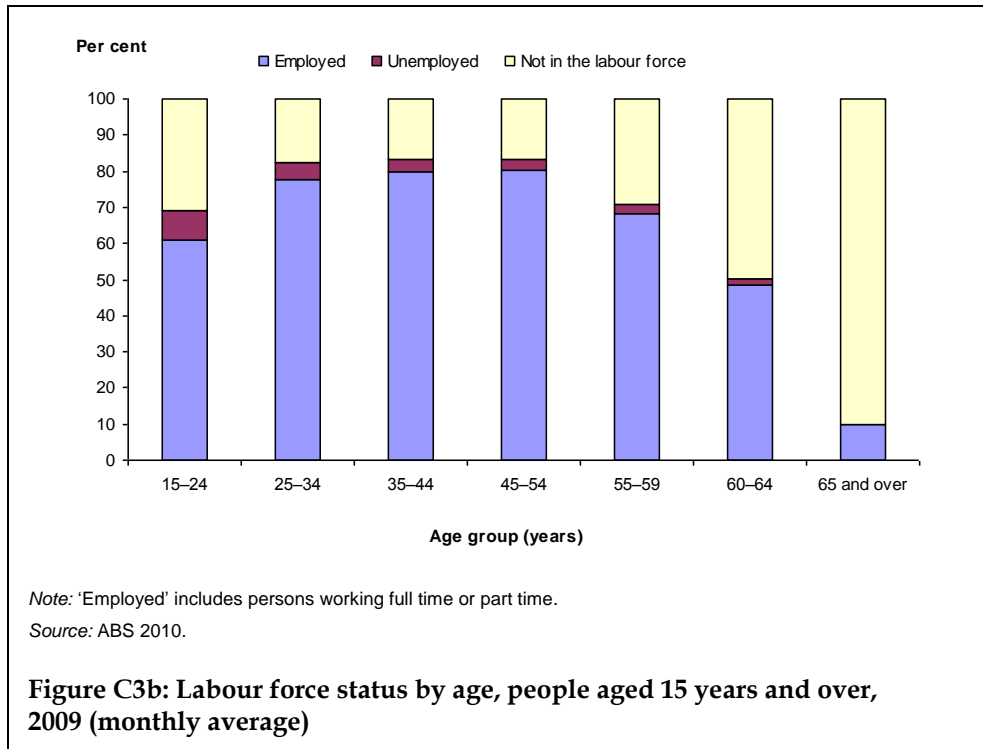
As shown in Table C3a, proportions of people across labour force categories have not changed greatly over the last decade. The most notable increase has been for employed females (5 percentage points); a similar decrease is noted for those females not in the labour force.

Table C3a: Labour force status of people aged 15 years and over, 1999 and 2009 (per cent)

	Males			**Females**		
	Employed	**Unemployed**	**Not in the labour force**	**Employed**	**Unemployed**	**Not in the labour force**
1999	67.3	5.1	27.6	50.2	3.6	46.1
2009	68.1	4.1	27.8	55.5	3.2	41.4

Source: ABS 2010.

Labour force participation was slightly higher among people living in *Major cities* (66%) compared with those living in *Regional and remote* areas (62%), and lower among Indigenous Australians (55%) compared with non-Indigenous Australians (65%) (Table C3b).

Table C3b: Proportion of the population aged 15 years and over who are in the labour force (employed or unemployed) by selected characteristics, 2007 and 2009 (per cent)

Variable	Per cent	Variable	Per cent
Geography		**Indigenous status**	
Major city	65.6	Indigenous	54.5
Other areas	62.5	Non-Indigenous	65.0

Notes
1. For information about geographic regions, please refer to Appendix 1.
2. Data by geographic regions are for the year 2009. Data by Indigenous status are for the year 2007.
Sources: ABS 2007; ABS 2009d.

C.4 Health expenditure

Rationale

Australia's health system depends on financial resources to continue providing health services of a quality and level that Australians require. When looking at health expenditure, it is particularly useful to attribute expenditure by disease and type of health service. This shows how resources are allocated within the health care system and the impact of changing patterns of disease on spending.

Expenditure data for this indicator are presented, where available, for selected chronic conditions (data for this are only available for 2004–05). Where this level of detail is not available, data on total health expenditure are presented instead.

What the data show

Expenditure on health in Australia increased from $44.8 billion in 1997–98 (7.8% of GDP) to $103.6 billion in 2007–08 (9.1% of GDP) (Figure C4; AIHW 2009f). In 2007–08, this figure averaged out as $4,874 per Australian (AIHW 2009e).

Source: AIHW 2009e.

Figure C4: National health expenditure, proportion of GDP (current prices), 1997–98 to 2007–08
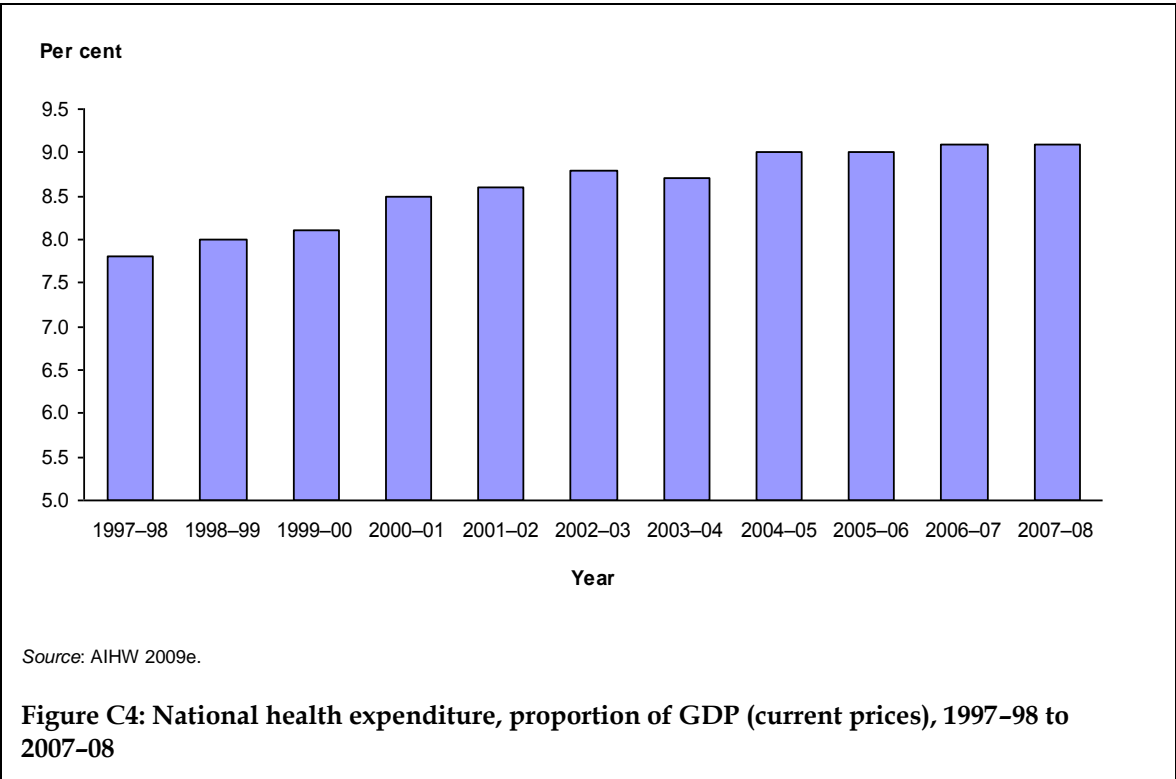
In 2004–05, $6.5 billion was spent on the chronic conditions shown in Table C4, accounting for 12% of total health expenditure on all conditions. Over half (59%) of all expenditure on these chronic diseases was for admitted patient services, 21% for prescription pharmaceuticals, 14% for out-of-hospital medical services and 5% for research. A further 2% was spent on other areas (primarily cancer screening programs).

Ischaemic heart disease (IHD) was the most expensive of the selected chronic diseases in 2004–05 ($1,804 million or 3.4% of expenditure), followed by Type 2 diabetes ($820 million or 1.6% of expenditure) and nephritis and nephrosis ($658 million or 1.3%).

Different diseases have different patterns of expenditure by type of health service (Table C4). More than three-quarters of expenditure was accounted for by admitted patient services for nephritis and nephrosis, liver cancer, colorectal cancer and stroke. Prescription pharmaceuticals accounted for more than half (59%) of expenditure on asthma and 39% on prostate cancer. While IHD had the highest expenditure on research in absolute terms ($50 million or 3% of expenditure), it was proportionally highest for prostate cancer and dementia (both 11%).

Table C4: Allocated health expenditure in Australia, by disease and area of health expenditure, 2004–05 ($ million)

Selected chronic disease	Admitted patient services[a]	Out-of-hospital medical services	Prescription pharma-ceuticals[b]	Research	Other[c]	Total expenditure	Per cent[d]
IHD	1,306	170	277	50	–	1,804	3.4
Type 2 diabetes	301	249	224	46	–	820	1.6
Nephritis & nephrosis	627	17	8	7	–	658	1.3
Asthma	98	137	358	13	–	606	1.1
COPD	335	71	144	12	–	562	1.1
Stroke	414	42	60	15	–	531	1.0
Breast cancer	93	69	60	34	118	374	0.7
Dementia	169	32	91	35	–	327	0.6
Bowel cancer	259	25	6	33	–	324	0.6
Prostate cancer	113	35	112	31	–	291	0.6
Lung cancer	131	30	5	19	–	184	0.3
Liver cancer	22	2	0	3	–	27	0.1
Total selected chronic diseases	*3,868*	*879*	*1,346*	*295*	*118*	*6,506*	*12.4*
Total (all conditions)	**24,221**	**11,900**	**8,144**	**1,715**	**6,680**	**52,660**	**100.0**

(a) Public and private acute hospitals, psychiatric hospitals and in-hospital services provided to private admitted patients.

(b) Includes all pharmaceuticals for which a prescription is needed, including benefit-paid prescriptions, private prescriptions and under co-payment prescriptions.

(c) Includes expenditure on optometry and dental services, community mental health and cancer screening programs.

(d) Proportion of total allocated expenditure

Source: AIHW Disease Expenditure Database.

Appendix 1: Definitions

Body mass index (Indicators 1.4 and 1.5)

The body mass index (BMI) is the standard classification used to define weight categories in adults, and is recommended by the WHO as a population measure (WHO 2000a). Body mass is calculated by dividing a person's weight (in kilograms) by the square of their height (in metres) and then categorising body weight as follows:

- underweight: BMI < 18.5

- healthy weight: BMI ≥ 18.5 and BMI < 25

- overweight but not obese: BMI ≥ 25 and BMI < 30

- obese: BMI ≥ 30.

It is important to note that this classification may not be suitable for all ethnic groups and is unsuitable for children (DOHA 2004). Compared with the rest of the population, some groups may have equivalent levels of risk at lower BMI (for example, Asians) or higher BMI (for example, Polynesians).

For children (persons aged between 2 and 17 years), body mass is calculated the same way as for adults (by dividing height and weight); however, their weight categories are assessed using appropriate cut-offs, as developed by Cole et al. (Cole 2000, 2007).

Deaths from leading chronic conditions (Indicator 2.21)

The following list of chronic conditions (and their associated ICD-10 codes) was used for *Indicator 2.21: Deaths from leading chronic conditions*. Readers should note that since the release of the *Technical report*, J40 (*Bronchitis unspecified*) has been included in the ICD-10 range for COPD.

Underlying cause of death only	ICD-10 code
Ischaemic heart disease	I20–I25
Lung cancer	C33, C34
Stroke	I60–I69
Breast cancer	C50
Bowel cancer	C18–C21
COPD	J40–J44
Dementia	F00–F03, G30
End-stage renal failure	N18, N19
Type 2 diabetes	E11
Liver cancer	C22
Asthma	J45, J46
Prostate cancer	C61

Deaths from potentially preventable chronic diseases (Indicator 1.10)

The following is a list of chronic conditions used in the calculation of the summary variable for premature deaths due to leading preventable chronic diseases (Indicator 1.10). The conditions only relate to the underlying cause of death. Readers should note that since the release of the *Technical report*, J40 (*Bronchitis unspecified*) has been included in the ICD-10 range for COPD.

Condition	ICD-10 code
Ischaemic heart disease	I20–I25
Lung cancer	C33, C34
Stroke	I60–I69
Breast cancer	C50
Bowel cancer	C18–C21
COPD	J40–J44
Dementia	F00–F03, G30
Prostate cancer	C61
Type 2 diabetes	E11

Depression (Indicators 1.3 and 2.9)

The conditions of depressive episode and dysthymia were used to measure the prevalence of depression in the population. A depressive episode is a state of gloom, despondency or sadness lasting at least two weeks. Dysthymia is a disorder that is characterised by constant or constantly recurring chronic depression of mood.

Both these conditions are part of the affective disorders category. This category also includes bipolar affective disorders, hypomania and mania; they were not included in our definition of depression (for the purposes of the indicator) because a person can have phases of these conditions without a serious depressive episode.

End-stage kidney disease (ESKD) (Indicator 2.8)

The following is a list of in-scope cause of death codes for ESKD used in the derivation of incidence.

Condition	ICD-10 code	Level of death coding
Chronic renal failure	N180, N188, N189	Underlying cause of death
Hypertensive renal failure	I120, I131, I132	Underlying cause of death
Unspecified renal failure	N19	Underlying cause of death
Chronic renal failure, end-stage	N180	Associated cause of death

Note: See the Glossary for a definition of ESKD.

Geographic regions

The geographic regions presented in this report are based on the ABS Australian Standard Geographic Classification Remoteness Structure (ASGC RA). The five areas that are commonly used are *Major cities*, *Inner regional*, *Outer regional*, *Remote* and *Very remote*. Some estimates from data collections are not able to be reported for some regions (usually *Remote* or *Very remote*) due to small numbers or because the surveys were not actually enumerated in those areas, for example, the 2007–08 NHS did not survey those living in *Very remote* areas. Therefore, it is common to aggregate categories of remoteness together to provide more robust estimates for the selected indictor.

More information about the ASGC RA, can be accessed on the ABS website at <http://www.abs.gov.au/websitedbs/D3310114.nsf/home/remoteness+structure>.

High blood cholesterol (Indicator 2.11)

Cholesterol is a fatty substance produced by the liver and carried by the blood supply to other parts of the body. Two important components of cholesterol are low-density lipoproteins (LDLs) and high-density lipoproteins (HDLs). LDLs are often known as 'bad' cholesterol, as excess levels of these contribute most to plaque formation, which in turn blocks arteries. HDLs are known as 'good' cholesterol, as they have a protective level against heart disease and help to minimise plaque.

High blood cholesterol is defined as total blood cholesterol ≥ 5.5 mmol/L. Commonly, levels of LDL are of interest to measure—a high level of LDL is defined as ≥ 3.5 mmol/L.

High blood pressure (Indicator 2.10)

Blood pressure refers to the forces exerted by circulating blood on the walls of the arteries, which are created by the pumping action of the heart, at contraction (systolic pressure) and at relaxation (diastolic pressure). High blood pressure is also known as hypertension.

The WHO defines high blood pressure as:

- systolic blood pressure of 140 mmHg or more, and/or
- diastolic blood pressure of 90 mmHg, and/or
- receiving medication for high blood pressure (WHO ISHWG 2003).

International Statistical Classification of Diseases and Related Health Problems

The International Statistical Classification of Diseases and Related Health Problems is the WHO's internationally accepted classification of death and disease. The 10th revision (ICD-10) is currently in use and, in this report, is the classification used for mortality (causes of death) and cancer conditions. The ICD-10-AM is the Australian modification of ICD-10, and is used for diagnoses and procedures recorded for patients admitted to hospital. In this report, ICD-10-AM is used for coding potentially preventable hospitalisations.

Kessler 10 (Indicator 1.2)

The Kessler 10 is a survey tool used to measure non-specific psychological distress in people. It uses 10 questions about negative emotional states that survey participants may have had in the four weeks leading up to their interview. It is used for people aged 18 years and over.

For more information about this instrument, see *Use of the Kessler Psychological Distress Scale in ABS health surveys* (ABS 2003).

Labour force status (Indicator C.3)

Labour force status is collected in multiple surveys including the ABS Labour Force Survey and the Census of Population and Housing.

The total civilian population aged 15 years and over is divided into those in the labour force (employed and unemployed) and those not in the labour force. Key definitions from the Labour Force Survey are:

- **Employed:** All persons aged 15 years and over who, during the reference week of the Labour Force Survey, worked one hour or more for pay, profit or commission. This includes employees who had a job but were not at work for reasons including short-term leave, standard work or shift arrangements, or industrial action.

- **Employed full time:** Employed persons who usually worked 35 hours or more a week.

- **Employed part time:** Employed persons who usually worked more than one but less than 35 hours a week.

- **Unemployed:** All persons aged 15 years and over who were not employed during the reference week, and had actively looked for work or were currently available for work. (ABS 2010).

Mortality—changes to time series

In Australia, death registrations collected by the state and territory Registrars of Births, Deaths and Marriages are provided to the ABS for coding of the causes of death. The majority of deaths in Australia are certified by a doctor and the coding of these deaths is reasonably straightforward. However, the deaths that require certification by a coroner (for example, those where the person died in an unnatural or violent manner or where the identity of the deceased is unknown) often require longer to determine the cause. As a result, when the ABS summarise causes of death in Australia, the causes of many coronial cases are still unknown.

To improve the accuracy of the causes of death data, the ABS, starting from 1 January 2007, is applying coroner's findings decided after close of processing to the mortality data—referred to as 'revising the data'. As a result, while the total number of deaths in the processing year will remain unchanged, there may be a shift in the distribution of the causes of death for that processing year.

The ABS will apply two revisions to each year of mortality data. As a result, three sets of data (preliminary, revised and final) will be released for each processing year, with each subsequent release providing greater accuracy on the cause of death.

The implications of these processing changes for the time series for mortality data are that deaths due to specific causes (most notably, *Intentional self-harm*) will become more accurate as more data for that year is revised. This interrupts the time series in that comparing deaths from suicide, for example, will likely increase due to incorporation of the revised data.

For the 2007 data, the first revision showed that the causes of death mostly affected were *Circulatory diseases* and *External causes*. That is, the majority of the coronial cases initially coded to an *Unknown cause of death* were recoded to *Heart or circulatory conditions* (41%) and E*xternal causes* (36%) (ABS 2009a).

Potentially preventable hospitalisations

The following is a list of ICD-10-AM codes used in the derivation of avoidable hospitalisation due to chronic disease (AIHW 2009a).

Conditions	ICD-10-AM codes
Asthma	J45, J46 as principal diagnoses only
Congestive cardiac failure	I50, I11.0, J81 as principal diagnoses only
	Excluding cases with the following procedure codes:
	33172-00, 35304-00, 35305-00, 35310-02, 35310-00, 38281-11, 38281-07, 38278-01, 38278-00, 38281-02, 38281-01, 38281-00, 38256-00, 38278-03, 38284-00, 38284-02, 38521-09, 38270-01, 38456-19, 38456-15, 38456-12, 38456-11, 38456-10, 38456-07, 38456-01, 38470-00, 38475-00, 38480-02, 38480-01, 38480-00, 38488-06, 38488-04, 38489-04, 38488-02, 38489-03, 38487-00, 38489-02, 38488-00, 38489-00, 38490-00, 38493-00, 38497-04, 38497-03, 38497-02, 38497-01, 38497-00, 38500-00, 38503-00, 38505-00, 38521-04, 38606-00, 38612-00, 38615-00, 38653-00, 38700-02, 38700-00, 38739-00, 38742-02, 38742-00, 38745-00, 38751-02, 38751-00, 38757-02, 38757-01, 38757-00, 90204-00, 90205-00, 90219-00, 90224-00, 90214-00, 90214-02.
Diabetes complications	E10–E14.9 as principal diagnoses
	E10–E14.9 as additional diagnoses where the principal diagnoses was:
	hyperosmolarity (E87.0)
	acidosis (E87.2)
	transient ischaemic attack (G45)
	nerve disorders and neuropathies (G50–G64)
	cataracts and lens disorders (H25–H28)
	retinal disorders (H30–H36)
	glaucoma (H40–H42)
	myocardial infarction (I21–I22)
	other coronary heart diseases (I20, I23–I25)
	heart failure (I50)
	stroke and sequelae (I60–I64, I69.0–I69.4)
	peripheral vascular disease (I70–I74)
	gingivitis and periodontal disease (K05)
	kidney diseases (N00–N29), including end-stage renal disease (N17–N19)
	renal dialysis (Z49)
COPD	J41, J42, J43, J44, J47 as principal diagnoses only
	J20 only with additional diagnoses of J41, J42, J43,J44, J47
Angina	I20, I24.0, I24.8, I24.9 as principal diagnoses only, excluding cases with procedure codes not in blocks [1820] to [2016]
Iron deficiency anaemia	D50.1, D50.8, D50.9 as principal diagnoses only
Hypertension	I10, I11.9 as principal diagnoses only
	Excluding cases with procedure codes according to the list of procedures excluded from the *Congestive cardiac failure* category above
Nutritional deficiencies	E40, E41, E42, E43, E55.0, E64.3 as principal diagnoses only
Rheumatic heart disease	I00 to I09 as principal diagnoses only
	Note: includes acute rheumatic fever

Risky alcohol consumption (Indicator 2.19)

The definition of alcohol consumption at risky or high-risk levels for long-term health is based on the Australian Alcohol Guidelines (NHMRC 2001) and is associated with regular and repeated patterns of drinking defined by the total number of standard drinks per week. Overall weekly levels of risky or high-risk drinking are 29 or more drinks for males and 15 or more drinks for females.

The Australian Alcohol Guidelines were reviewed in 2009; however, at the time of writing this report, data were not available to report against them.

Socio-Economic Indexes for Areas (SEIFA)

The Socio-Economic Indexes for Areas (SEIFA) are a product designed by the ABS which currently comprises four indexes that can be used to explore different aspects of socioeconomic conditions by geographic areas. After each Census, scores are attributed to geographic areas (such as statistical local areas) based on averaged attributes for households within those areas.

The index that is used to report socioeconomic status in this report is the Index of Relative Socioeconomic Disadvantage (IRSD). This index is often reported as quintiles (unless estimates do not allow this, when quartiles may be used). The 1st quintile relates to those areas for which the lowest fifth of SEIFA scores are attributed—the areas of most disadvantage. The 5th quintile relates to those areas for which the highest fifth of SEIFA scores were attributed—the areas of least disadvantage.

For more information about SEIFA, see the ABS website at <http://www.abs.gov.au/websitedbs/D3310114.nsf/home/Seifa_entry_page>.

Waist circumference (Indicator 2.13)

For a range of health problems, levels of risk increase with increasing waist circumference. As with BMI, the waist circumference classification is not applicable for people aged less than 18 years and the cut-off points may not be suitable for all ethnic groups (DoHA 2004).

Levels of risk and waist circumference

Risk of disease	Males waist circumference	Females waist circumference
Increased	≤ 94cm	≤ 80cm
Substantially increased	≤ 102cm	≤ 88cm

Appendix 2: Sources of data

ABS Adult Literacy and Life Skills Survey (ALLS)

The Adult Literacy and Life Skills Survey (ALLS) was conducted in Australia between June 2006 and January 2007 as part of an international study coordinated by Statistics Canada and the Organisation of Economic Co-operation and Development (OECD). The survey provides information on the knowledge and skills of 15- to 74-year-olds in four domains: prose literacy, document literacy, numeracy and problem solving. A fifth domain measuring health literacy was produced as a by-product of these domains.

ABS Disability, Ageing and Carers Survey (SDAC)

The Disability, Ageing and Carers Survey (SDAC) collects information about people of all ages with a disability, older people (aged 60 years and over) and people who provide assistance to older people with disabilities. The 2003 survey included people in both private and non-private dwellings, including those living in cared accommodation, but excluded those in gaols and correctional institutions.

ABS Labour Force Survey

The ABS Labour Force Survey provides information on the labour market activity of the usually resident civilian population of Australia aged 15 years and over. The survey is used to calculate estimates of the number of employed and unemployed people, the unemployment rate and the labour force participation rate.

The ABS has conducted the Labour Force Survey since 1960. The survey was undertaken on a quarterly basis before February 1978 and has been conducted monthly since this time.

ABS National Aboriginal and Torres Strait Islander Health Survey (NATSIHS)

The National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) collects information about the health circumstances of Aboriginal and Torres Strait Islander Australians from both remote and non-remote areas across Australia. The NATSIHS sample covers usual residence at private dwellings only.

ABS National Heath Surveys (NHS)

The National Health Surveys (NHS) collects data to produce national benchmark information on a range of health issues and enable trends to be monitored over time. This includes information about the health status of the population, health-related behaviours and the use of health services.

ABS National Survey of Mental Health and Wellbeing (SMHWB)

The National Survey of Mental Health and Wellbeing (SMHWB) was conducted in 2007, on a sample of people aged 16 to 85 years of age (ABS 2008a). It collected information about lifetime and 12-month prevalence of selected mental disorders, level of impairment for these disorders and other information related to health, service use, and demographic and socioeconomic characteristics.

ABS Survey of Income and Housing (SIH)

The ABS Survey of Income and Housing (SIH) is a household survey that collects information from residents aged 15 years and over regarding sources of income and amount received, as well as housing, household and personal information. The survey was conducted in most years from 1994–95 to 2003–04 (no survey was run in 1998–99 or 2001–02) and conducted biennially thereafter. The latest survey (2007–08) was conducted over the period August 2007 to June 2008.

AIHW Australian Cancer Database

The Australian Cancer Database, formerly known as the National Cancer Statistics Clearing House, is managed by the AIHW and contains information on the incidence of cancer in the Australian population. Information is provided to the AIHW by the state and territory cancer registries and includes incidence, mortality, specific cancer sites and cancer histology. This information is available from 1982 and is used in the construction of the ACIM books (see below).

AIHW Australian Cancer Incidence and Mortality (ACIM books)

The AIHW Australian Cancer Incidence and Mortality (ACIM) books are a series of interactive Excel workbooks with tables and graphs by age and sex for 'all cancers' and the major cancer, for incidence from 1982 to 2006 and mortality from 1968 to 2006 (AIHW 2009c). Data for the ACIM books is drawn from the AIHW Australian Cancer Database (see above).

AIHW Disease Expenditure Database

Since 1984, the AIHW has had responsibility for developing estimates of national health expenditure, which are maintained as the AIHW Disease Expenditure Database. Data for this purpose are obtained from a variety of sources, with most of the data being provided by the ABS, the Australian Government Department of Health and Ageing and state and territory health authorities. Other major sources are the Department of Veterans' Affairs, the Private Health Insurance Administration Council, Comcare and the major workers compensation and compulsory third-party motor vehicle insurers in each state and territory.

AIHW General Record of Incidence of Mortality (GRIM) books

The General Record of Incidence of Mortality (GRIM) books are a set of interactive Excel spreadsheets developed by the AIHW which contain summary mortality information for many causes of deaths, both at the national level and for states and territories (AIHW 2010c). Data for the GRIM books is sourced from the AIHW's National Mortality database. A selection of GRIM books is available from the AIHW website <www.aihw.gov.au>.

AIHW National Morbidity Database

The National Morbidity Database contains demographic, diagnostic, procedural and duration-of-stay information on episodes of care for patients admitted to hospital. The data collection is maintained by the AIHW using data supplied by state and territory health authorities. The database is episode-based, and it is not possible to count patients individually. Information from this database is reported annually in the *Australian hospitals statistics* series, which is available on the AIHW website <www.aihw.gov.au>.

AIHW National Mortality Database

The National Mortality Database contains information on the cause of deaths supplied by the medical practitioner certifying the death or by a coroner. Registration of deaths is the responsibility of the state and territory Registrars of Births, Deaths and Marriages. Registrars provide the information to the ABS for coding of cause of death and the data is then provided to the AIHW (see also *Mortality – changes to time series* on page 103 of this report).

Australian and New Zealand Dialysis and Transplant Registry (ANZDATA)

The Australian and New Zealand Dialysis and Transplant Registry (ANZDATA) collects information to monitor dialysis and transplant treatments from all renal units in Australia and New Zealand, on all patients receiving kidney replacement therapy where the intention to treat is long-term. The registry is coordinated within the Queen Elizabeth Hospital in Adelaide.

Australian Diabetes, Obesity and Lifestyle study (AusDiab)

The Australian Diabetes, Obesity and Lifestyle (AusDiab) study was conducted in 1999–2000, by the International Diabetes Institute. Results from this study are based on data collected from over 11,000 Australians aged 25 years and over and residing in six states of Australia and the Northern Territory. The study was designed to provide national estimates of the prevalence of diagnosed and undiagnosed diabetes, national measurements of blood pressure, blood lipids and blood glucose, as well as other anthropometric measures, medication use and health determinant information.

Longitudinal Survey of Australian Children (LSAC)

Growing Up in Australia: the Longitudinal Study of Australian Children (LSAC) is a joint study conducted in partnership between the Department of Families, Housing, Community Services and Indigenous Affairs, the Australian Institute of Family Studies and the Australian Bureau of Statistics. The study is designed to follow the development of 10,000 children and their families from all parts of Australia. The study commenced in 2004 with two cohorts—families with 4-5-year-old children and families with 0-1-year-old infants. Health-related questions relate to children's social and emotional development, health behaviours and health risk factors.

National Survey of Adult Oral Health

The National Survey of Adult Oral Health was conducted in 2004–06 on a sample of 14,123 persons aged over 15 years. The survey was undertaken by phone, with people with their own teeth (dentate) then invited to participate in a standardised dental examination. The aims of the survey were to describe levels of oral disease, perceptions of oral health and patterns of dental care.

National Drug Strategy Household Survey (NDSHS)

The National Drug Strategy Household Survey (NDSHS) collects information from Australians aged 14 years and over. Respondents are asked about their knowledge of drugs, their attitudes towards drugs, their drug consumption histories and related behaviours. The collection includes information about alcohol, tobacco, illicit and non-illicit drugs.

National Perinatal Data Collection (NPSC)

The National Perinatal Data Collection (NPDC) is based on notifications to the perinatal data collection in each state and territory, and includes all births in Australia in hospitals, birth centres and the community. Midwives and other staff complete notification forms for each birth using information obtained from mothers and from hospital or other records. Information is included in the NPDC for all live births and stillbirths of at least 400 grams birthweight or at least 20 weeks gestation.

Glossary

Age standardisation A method of removing the influence of age when comparing populations with different age structures.

Arthritis A group of disorders in which there is inflammation of the joints, which can become stiff, painful, swollen or deformed.

Asthma A common, chronic inflammatory disease of the air passages that presents as episodes of wheezing, breathlessness and chest tightness due to widespread narrowing of the airways and obstruction of airflow.

Body mass index (BMI) The most commonly used method of assessing whether a person's weight is normal weight, underweight, overweight or obese. It is calculated by dividing the person's weight (in kilograms) by their height (in metres) squared.

Blood cholesterol Fatty substance produced by the liver and carried by the blood to supply the rest of the body. Its natural function is to supply material for cell walls and for steroid hormones, but if levels in the blood become too high this can lead to atherosclerosis and heart disease.

Blood pressure The force exerted by the blood on the walls of the arteries as it is pumped around the body by the heart.

Breast cancer A disease in which abnormal cells in the breast tissues multiply and form an invasive (or malignant) tumour.

Burden of disease and injury The term used to refer to the quantified impact of a disease or injury on an individual or population.

Cancer A large range of diseases whose common feature is that some of the body's cells become defective, begin to multiply out of control, can invade and damage the area around them, and can also spread to other parts of the body to cause further damage.

Category 1 Indicators considered to be 'spotlight' or high impact in nature, which can be used for 'one-headline statistic' reporting.

Category 2 Indicators which complete the picture of chronic disease in Australia. Their focus may be more detailed than those in Category 1, for example, they may be relevant for a particular age group.

Cause of death From information reported on the medical certificate of cause of death, each death is classified by the *underlying cause of death* according to rules and conventions of the 10th revision of the International Classification of Diseases (See Appendix 1).

Chemotherapy The use of drugs (chemicals) to prevent or treat disease, with the term usually being applied to treatment for cancer rather than for other uses.

Chronic disease The term applied to a diverse group of diseases that tend to be long-lasting and persistent in their symptoms or development. The term *chronic disease* is usually confined to non-communicable disease.

Chronic obstructive pulmonary disease (COPD) Serious, progressive and disabling long-term lung disease where damage to the lungs, usually because of both emphysema and

chronic bronchitis, obstructs oxygen intake and causes increasing shortness of breath. By far the greatest cause in Australia is cigarette smoking.

Contextual indicators These indicators do not relate to a particular chronic disease or determinant; however, they describe some aspects of the broader environment in which health indicators reside.

Core activity The term used in discussions of disability, referring to the basic activities of daily living, namely self-care, mobility and communication.

Depression A mood disorder with prolonged feelings of being sad, hopeless, low and inadequate, with a loss of interest or pleasure in activities and often with suicidal thoughts or self-blame.

Dementia A general and worsening loss of higher brain power such as memory, understanding and reasoning.

Dentition The set of teeth—a complete dentition comprises 32 adult teeth.

Dentate Having one or more natural teeth.

Determinant Any factor that can increase the chances of ill health (risk factors) or good health (protective factors) in a population or individual. By convention, services or other programs that aim to improve health are usually not included in this definition.

Diabetes (diabetes mellitus) A chronic condition in which the body cannot properly use its main energy source, the sugar glucose. This is due to a relative or absolute deficiency in insulin, a hormone produce by the pancreas.

Dialysis A process used to treat kidney failure, whereby blood is filtered externally and circulating chemicals are regulated. Dialysis takes on the role normally played by the kidneys.

Disability Described by the International Classification of Functioning, Disability and Health as a concept of several dimensions relating to:

- an impairment in body structure or function

- a limitation in activities (such as mobility and communication)

- a restriction in participation (involvement in life situations such as work social interaction and education)

- the affected person's physical and social environment.

Disability-adjusted life year (DALY) Years of healthy life lost through premature death or living with disability due to illness or injury.

End-stage kidney disease (ESKD) There are five stages of kidney disease (AIHW 2010a), which are measured by the rate in which the kidneys clear waste products in one minute. ESKD is the last stage and is the most severe. It is where the patient requires kidney replacement therapy (dialysis or transplant) to survive.

Estimated resident population (ERP) The estimated number of usual residents in Australia.

Glucose The main sugar that the body uses for energy, which comes from the breakdown of carbohydrates in the diet and the breakdown of glycogen in the liver. The body requires the hormone insulin to use glucose properly.

Health risk factor Any factor which represents a greater risk of a health disorder or other unwanted condition or event.

Incidence The number of new cases (of cases, instances and so on) occurring during a given period. In this report, incidence usually refers to the number of new cases of a particular chronic condition.

Indicator A key statistical measure selected to help describe (indicate) a situation concisely; to track change, progress and performance; and to act as a guide to decision making.

Indigenous A term used to describe a person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander and is accepted as such by the community with which he or she is associated.

Infant mortality rate The number of deaths among children aged less than one year in a given period, per 1,000 live births in the same period.

International Classification of Diseases International Statistical Classification of Diseases and Related Health Problems (see also Appendix 1).

Ischaemic heart disease (IHD) Heart attack and angina (chest pain). Also known as coronary heart disease.

Life expectancy An indication of how long a person can expect to live, depending on the age they have already reached. Technically, it is the number of years of life remaining to a person at a particular age if death rates do not change.

Long-term condition A term used in ABS health surveys to describe a health condition that has lasted, or is expected to last, at least 6 months.

Mortality Death.

Non-Indigenous People who have declared they are not of Aboriginal or Torres Strait Islander descent. Used interchangeably with *Other Australians*.

Osteoporosis Thinning and weakening of the bone substance, with a resulting risk of fracture.

Other Australians People who have declared they are not of Aboriginal or Torres Strait Islander descent. Used interchangeably with *Non-Indigenous*.

Physical activity Physical activity is any bodily movement that results in energy expenditure.

Potentially preventable hospitalisations Hospital separations from a specified range of conditions where hospitalisation is considered to be largely preventable if timely and adequate care were provided through population health services, primary care and outpatient services (see Appendix 1 for the list of conditions).

Prevalence The number or proportion (of cases, instances and so on) present in a population at a given time.

Prevention Action to reduce or eliminate the onset, causes, complications or recurrence of ill health or injury.

Psychological distress A non-specific term that encompasses sadness, frustration, anxiety and a number of other negative mood states. It includes both mild and severe forms of these mood states, as well as transient and persistent ones. It also refers both to symptoms of psychiatric disorders and to normal emotional responses to adversity.

Prostate cancer Cancer of the prostate, the male organ that sits next to the urinary bladder and contributes to the semen (sperm fluid).

Quartile A group derived by ranking the population of people or elements according to the specified criteria, and dividing it into four equal parts.

Quintile A group derived by ranking the population of people or elements according to the specified criteria, and dividing it into five equal parts.

Radiation Radiation therapy (also called radiotherapy, x-ray therapy or irradiation) is the use of a certain type of energy (called ionizing radiation) to kill cancer cells and shrink tumours.

Screening A systematic method of detecting risk factors or suspicious abnormalities among people who are symptom-free, so that health problems can be either prevented or followed up, diagnosed and treated as early as possible.

Separation The formal process by which a hospital records the completion of an episode of treatment and/or care for an admitted patient.

Suicide Deliberately ending one's own life.

Trans fats A type of unsaturated fat which, because of its structure, acts like saturated fat and causes blood cholesterol levels to rise. Trans fats are mainly found in manufactured processed foods such as cakes, biscuits, pies and some fatty takeaways.

Type 2 diabetes The most common form of diabetes, occurring mostly in people aged 40 years or over, and marked by reduced or less effective insulin.

Underlying cause of death The disease that initiated the train of events leading directly to death. Deaths from injury or poisoning are classified according to the circumstances of the violence that produced the fatal injury, rather than to the nature of the injury.

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