Key indicators of progress for chronic disease and associated determinants

Technical report

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Suggested citation

Australian Institute of Health and Welfare

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Contents

Acknowledgments

Abbreviations

ABS	Australian Bureau of Statistics
ACSC	ambulatory care-sensitive condition
AIHW	Australian Institute of Health and Welfare
APHDPC	Australian Population Health Development Principal Committee
ANZDATA	Australia and New Zealand Dialysis and Transplant Registry
AusDiab	Australian, Diabetes, Obesity and Lifestyle Study
BMI	body mass index
CALD	cultural and linguistic diversity
CATI	computer-assisted telephone interview
CDIDB	chronic disease indicators database
CDRI	chronic disease risk index
COPD	chronic obstructive pulmonary disease
DoHA	Department of Health and Ageing
ESKD	end-stage kidney disease
HII	health inequality index
ICD-10	International Classification of Diseases and Health-Related Problems, 10th Revision
ICD-10-AM	International Statistical Classification of Disease and Related Health Problems, 10th Revision, Australian Modification
IHD	ischaemic heart disease
Indicator set	the key indicators of progress for chronic disease and associated determinants
LDL	low-density lipoproteins
NHMRC	National Health and Medical Research Council
NHS	National Health Survey
PHIDG	Population Health Information Development Group
Project group	the PHIDG project group
SES	socioeconomic status
SMHWB	Survey of Mental Health and Wellbeing
WHO	World Health Organization

Symbol

. .	Not applicable

Summary

Reporting statistics about chronic disease in a concise and standardised way will enable researchers, policy makers, and health program managers to measure changes in patterns of chronic disease and its determinants (risk factors), monitor outcomes of interventions and health programs, and assess needs for future health services for the population. To date, information about chronic disease (and determinants) has been problematic in terms of consistency and comparability.

This report describes the **key indicators of progress for chronic disease and associated determinants** (the Indicator set), and is a reference tool for anyone who wishes to measure and report the progress in the prevention of chronic disease in Australia.

This report pulls together and specifies the 42 indicators, out of the 400 that currently exist in Australia, each relating to chronic disease, an associated risk factor, or the health environment. For each of these indicators, technical information, such as what data sources to use and recommended ways of reporting, is included.

1   Introduction

This report describes the **key indicators of progress of chronic disease and associated determinants** (the Indicator set), and is designed to be used as a reference tool by anyone who wishes to report on progress in the prevention of chronic disease in Australia. The indicators are a set of 42 measures that can be used individually, or in combinations, to show changes across time in selected chronic diseases and their risk factors (determinants). The main aim of this report is to provide readers with operational definitions in terms of:

- recommended data sources for reporting
- availability of data
- the presentation of indicators.

The report also describes the processes undertaken by the Project group in developing the Indicator set, including the stakeholder consultation process. Another report that will present data against the indicators is planned for release in 2010.

Readers should note the vast amount of relevant statistical information about chronic disease already reported by the AIHW. In particular, three previously published reports may be of interest:

- *Chronic diseases and associated risk factors in Australia, 2001*
- *Chronic diseases and associated risk factors in Australia, 2006*
- *Indicators for chronic diseases and their determinants, 2008*.

These reports are available to download from the AIHW's website <www.aihw.gov.au>. Also via the same web address, readers can access the *Chronic disease indicators database* (CDIDB); more information about this database is provided further in this chapter.

Structure of the report

Chapter one is an overview of the Indicator set, including why such a set is required, its inception, and subsequent development. Chapter two describes the structure of the set, including the categories that the indicators have been assigned to. Chapters three, four, and five represent three different categories of indicator. Each of these chapters contains detailed information for the operational use of the indicators, such as the recommended data sources, the specific subpopulations of interest, and any additional information that should be considered before reporting against the indicators. Chapter six describes the last category—indicators for development—and provides readers with information about the two indicators identified as useful for reporting. However, both require substantial development and testing before being deemed viable to incorporate into the main Indicator set.

Background

The Department of Health and Ageing (DoHA) contracts the AIHW to undertake a program of work in the field of 'surveillance and monitoring of chronic disease and associated determinants'. As part of this program, AIHW provides support to the Population Health Information Development Group (PHIDG)—a subgroup of the Australian Public Health

Development Principal Committee (APHDPC), and continues to be involved in the development of indicators for chronic disease (AIHW 2008a). In February 2009, the APHDPC endorsed the Indicator set.

What are indicators?

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).

More often than not, indicators are grouped within sets, and may be specific to a committee, a disease of interest, a population group, or a concept to be measured. For example, the National Health Performance Committee manages a suite of indicators that are used to report on health sector performance (NHPC 2004). Similarly, the AIHW was involved in the development of the *National indicators for monitoring diabetes* (AIHW 2007) and the *Key national indicators of children's health, development and wellbeing* (AIHW 2004).

Why another set of indicators?

Chronic disease is a major health concern in Australia, and its prevention has increasingly become the focus of Australian governments, particularly in terms of health programs and intervention strategies. In early 2008, the Minister for Health and Ageing appointed a new National Preventative Health Taskforce. A major undertaking of this group is to develop strategies to tackle health challenges, in particular obesity, tobacco and alcohol (NPHT 2008).

To enable the monitoring of outcomes of programs and interventions, it is vital that governments, researchers, and health workers have access to up-to-date, standardised, and relevant statistics about chronic disease. These are used to develop a baseline of evidence, and subsequently enable the monitoring of change in the chronic disease environment for the population as a whole, and in population subgroups.

Currently, reporting on chronic disease is disjointed and inconsistent, leading to varied results, and uncertainty about what actual rates and trends are. This is largely due to the numerous amounts of indicators that are already available (around 400 separate indicators at the time of writing this report), and the varied data sources used to derive the statistics for them. The development of a concise set of indicators contributes to the successful monitoring of chronic disease in Australia by informing policy makers, researchers and others whose work is related to chronic disease prevention. Qualities of such a set are that it covers most facets of chronic disease, is defined with enough information to enable standardised reporting across time, and supports reporting for population groups of interest.

Policy context for the Indicator set

Data reported against the Indicator set will inform a number of national strategies, frameworks and policies:

- National Chronic Disease Strategy, 2006
- The Blueprint for Chronic Diseases Surveillance, 2006
- National Service Improvement Frameworks, 2006

- The Healthy for Life Program, 2007
- Australia: the Healthiest Country by 2020, 2008
- National Men's Health Policy, in development at the time of writing this report
- National Women's Health Policy, in development at the time of writing this report.

Many other strategies, frameworks and policies exist for specific health-related areas, and the associated components of this Indicator set will also contribute to informing those. For example, data reported against indicators about smoking will help inform the objectives of the National Tobacco Strategy.

The development process

In September 2007, PHIDG endorsed the development of a **key set of indicators of progress for chronic disease and associated determinants** (the Indicator set), and convened a Project group comprising PHIDG members and other experts in the field of indicator development.

The main objective of the Project group, and ultimately the final Indicator set, was to enable a standardised way of reporting information over time that would allow progress in the prevention of chronic disease (and determinants) to be monitored in Australia.

The Project group met on several occasions over the subsequent 12 months and submitted the Indicator set to PHIDG in November 2008. In February 2009, PHIDG presented the Indicator set to APHDPC who endorsed the set, and recommended it as the set of indicators to use when monitoring chronic disease in Australia.

The following paragraphs give readers an outline of some of the issues considered and processes undertaken by the Project group during the development of the Indicator set.

Criteria

The project group defined a set of criteria (see box below) considered useful in selecting indicators. Readers should note that the selection was not driven by data availability. As with the final indicator set, criteria used in the assessment of suitable indicators for the set may change over time.

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*
- *Lead to action (at various population levels, for example, individual, community, organisation/agency)*
- *Be timely*
- *Be marketable.*

Note: the order of these criteria does not indicate priority.

Categories

The Indicator set is structured into four categories. The categories are not intended to reflect levels, importance or priority; rather, the type of indicators that belong in them. One of the categories is considered temporary: this set is reserved for those indicators that require significant development.

Category 1

Indicators in category 1 are considered to be 'spotlight' or high-impact in nature, and can be used for 'one-headline statistic' type of reporting, such as one-off items in newspapers, or in information side bars on web pages. This does not preclude these indicators being reported against at more detailed levels. Information about how to do so is provided for each in this report.

In this first version of the Indicator set, 11 indicators are situated in category 1. It is anticipated that the two indicators identified as 'for development' will be part of this category, once developed.

Category 2

Indicators in this category complete the picture given by those in category 1. Each indicator does have a recommended main reporting statistic; however, it is expected that most of these will be reported in more detail, for example as age-standardised rates over time, or by age group and gender.

There are currently 25 indicators in this category.

Contextual indicators

There are four contextual indicators that have been included in this category. These measures do not directly relate to a particular chronic disease or determinant as such; however, they provide a broad view of the health environment. They may be used to signal, or explain changes in data related to the other indicators. The contextual indicators were selected on the basis that evidence exists that health status, or health behaviours, are strongly linked to them. The areas the contextual indicators comprise are low income, health literacy, labour force status and health expenditure.

Indicators for development

There are two indicators in this temporary category; once developed, both are intended to be situated within category 1. The indicators themselves are indexes that are based on multiple data elements. Substantial development, including testing of results, will have to occur before either of these indicators is considered reliable for use. However, the issues they relate to (chronic disease risk and health inequalities) are considered to be vital in completing the picture of chronic disease environment in Australia.

Stakeholder consultation

The AIHW, on behalf of the Project group, undertook two main phases of stakeholder consultations. Throughout the process, minor amendments were constantly made to the set as new information became available, or other stakeholders provided comment.

The first phase involved the circulation of a discussion paper to a wide range of stakeholders, including subject matter experts, health departments and other interested organisations. Stakeholders were encouraged to disseminate the paper throughout their organisations. The discussion paper contained information about the project, a list of candidate indicators, and provision to make comments and suggestions about the Indicator set. Based on comments received through the first phase of consultations, the Project group was able to compile a revised set of indicators.

The second phase of consultation was a more focused exercise. Subject matter experts were contacted about specific indicators for which the Project group had limited knowledge, and/or the first phase of consultations had not resolved. For example, the Dental Statistics and Research Unit at University of Adelaide (a collaborating unit with the AIHW) were asked to provide advice about an indicator that would best provide a measure for oral health in Australia.

Frequency of reporting

To date, no formal recommendations have been made about the frequency of reporting against these indicators; however, an initial comprehensive report based on the 36 indicators in categories 1 and 2 (plus the four contextual indicators) is expected to be published in 2010. A repetition of such a comprehensive report would most likely occur once new data become available for the majority of the indicators.

For many indicators, particularly those identified as category 1, reporting is expected to occur regularly, most likely via the internet (either through the AIHW website or via another web based information tool, such as the Chronic Disease Information Hub). This will allow the dissemination of new information to be undertaken in the timeliest way.

Although not concurrently, it is expected that some of these indicators will be reported on within other AIHW published reports, such as the *Australia's Health* series, or condition specific reports such as *Cancer in Australia*.

Chronic disease indicators database

The *Chronic disease indicators database* (CDIDB) is a catalogue of indicators for chronic disease and associated determinants, and was developed by AIHW in 2006. The CDIDB is accessed via the AIHW's website <http://www.aihw.gov.au/cdi/index.cfm>. Existing information is updated regularly, for example, when a publication is released or when new data become available. If new indicators are developed (and endorsed), they too are incorporated in the CDIDB.

The CDIDB can be searched in a number of useful ways:

- by indicator source (for example, National Healthy Priority Area indicators)
- by keywords (for example, diabetes)
- by type of data (for example, hospitalisations)
- alphabetically.

When searching the CDIDB for indicators in this set, search by indicator source, using the term 'Key indicators'.

Future directions

It is important that a review of the Indicator set is undertaken in the future. However, it is unclear at this time what agency will be responsible for this task, and in how many years the review should occur. The review should ascertain whether the indicators in the current set are still appropriate, measure what they were originally intended to, and cover a sufficient range of issues related to chronic diseases and their determinants to provide a comprehensive picture. If there are new or emerging issues, additional indicators may need to be identified and incorporated into the Indicator set. Similarly, if there are new strategies, policies or frameworks developed, the set may need to change to fulfil the requirements of those.

New or changed data sources mean that opportunities may exist to collect more comprehensive or timely information. These opportunities should be explored in relation to the data sources, and in terms of how information is reported. Advances in technology should also be assessed, and if possible, used for the dissemination of information.

Indicators for development

Two indicators are considered important components of the Indicator set; however, both require substantial development and testing before inclusion. The chronic disease risk index (CDRI) and the health inequality index (HII) could both provide a 'one statistic' measure that would further contribute to describing chronic disease in Australia. Both are considered suitable as category 1 indicators; however, each could also be used with respect to different population subgroups.

2 Overview of the Indicator set

As mentioned in Chapter 1, the Indicator set is structured into four categories. The table below shows the category that each indicator belongs in, its number and domain. The indicators have been grouped into the domains of chronic disease, risk factors, mortality, health services and disability.

Key indicators for chronic disease and associated risk factors, 2009

Category 1 indicators	
Domain and number	**Indicator title**
Chronic disease	
1.1	Type 2 diabetes
1.2	Psychological distress in adults
1.3	Depression in adults
Risk factors	
1.4	Overweight and obesity in children
1.5	Overweight and obesity in adults
1.6	Daily smoking
1.7	Low birthweight
Mortality	
1.8	Life expectancy
1.9	Gap in life expectancy between Indigenous and non-Indigenous
1.10	Deaths from leading potentially preventable chronic disease
Health services	
1.11	Potentially avoidable hospitalisations—summary

(continued)

Key indicators for chronic disease and associated risk factors, 2009 (continued)

Category 2 indicators	
Domain and number	**Indicator title**
Chronic disease	
2.1	Incidence of key preventable cancers
2.2	Incidence of prostate cancer
2.3	Incidence of breast cancer
2.4	Dementia
2.5	Oral health
2.6	Arthritis
2.7	Incidence of severe osteoporosis
2.8	Incidence of end-stage kidney disease
2.9	Young people with depression
Risk factors	
2.10	High blood pressure
2.11	High blood cholesterol
2.12	People with diabetes who have a HbA1C level greater than 7%
2.13	Waist circumference
2.14	Smoking in pregnancy
2.15	Smoking in young people
2.16	Insufficient fruit consumption
2.17	Insufficient vegetable consumption
2.18	Breastfeeding
2.19	Risky alcohol consumption
2.20	Physical inactivity
Mortality	
2.21	Deaths from leading chronic conditions
2.22	Deaths from suicide
Health services	
2.23	Asthma action plan
2.24	Potentially avoidable hospitalisations—detailed
Disability	
2.25	Severe or profound activity limitation

(continued)

Key indicators for chronic disease and associated risk factors, 2009 (continued)

Contextual indicators	
Number	**Indicator title**
C.1	Low income
C.2	Health literacy
C.3	Labour force status
C.4	Health expenditure
Indicators requiring development	
Number	**Indicator title**
1.12	Chronic disease risk index
1.13	Health inequality index

Information about the indicators in this report is presented in a similar format for each indicator. Readers are encouraged to become familiar with the elements of each indicator, so that data are reported consistently. Indicators (or their specifications) may change over time, for example, when new data from an Australian Bureau of Statistics (ABS) survey are released. Therefore, readers are encouraged to check the attributes of the indicators on the CDIDB, as this database is updated regularly, and therefore reflects the most current data sources for the Indicator set.

Example of the indicator template

Element	Description
Headline statistic/statistic	The main statistic to be reported for that subject.
Indicator details	
Rationale	This is the intent of the indicator and describes why information about that subject is important to measure.
Numerator	
Denominator	
Presentation for 'other than headline' reporting/other reporting	This section of the table provides information about breakdowns that are considered useful, or required by researchers and policy makers. This section may include specifics about what age groupings should be used, or the most relevant population subgroups that should be reported for.
Data collection details	
Data sources	This section provides details about the most current sources of data available to measure against that indicator. The data sources shaded in grey are those, that at the time of writing, had not yet been surveyed; however, data would enable measurement of that indicator. As noted previously, the data sources specified in this report may change; therefore readers are encouraged to check the CDIDB before presenting data.
Additional notes/issues	
	This area covers other useful information about reporting against the indicator, such as alternative data sources, the scope of data collections or the ICD-10 codes that relate to the reporting of certain conditions.

3 Category 1 indicators

1.1 Type 2 diabetes

Headline statistic	The proportion of people who have Type 2 diabetes
Indicator details	
Rationale	Diabetes is currently a significant health concern and its prevalence is on the rise in Australia and across the world. This indicator will assist in monitoring levels of this chronic disease in Australia.
	Diabetes is a chronic condition that causes significant burden to those who suffer from it. More diabetes sufferers have Type 2 diabetes. There are many factors that can contribute to its onset and development, including obesity and poor nutrition. Having Type 2 diabetes also heightens an individual's chance of developing complications, such as peripheral vascular disease, kidney disease, eye disease, and coronary heart disease.
Numerator	The number of people who have measured Type 2 diabetes
Denominator	The total population
Presentation of 'other than headline' reporting	Age (in 10 year groups) by sex
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By socioeconomic status (SES)
Data collection details	
Data sources	AusDiab 1999–00
Additional notes/issues	
	. .

1.2   Psychological distress in adults

Headline statistic	The proportion of adults with a K-10 score greater than or equal to 22
Indicator details	
Rationale	This indicator will report on adults who are at risk due to their levels of psychological distress.
	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 on the K-10 and a current Composite International Diagnostic Interview (CIDI) diagnosis of anxiety and affective disorders (ABS 2003).
Numerator	The number of people 18 years and over with a K-10 score greater than or equal to 22
Denominator	Population aged 18 years or over
Presentation of 'other than headline' reporting	Age (in 10 year groups) by sex
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	National Health Surveys
Additional notes/issues	
	. .

1.3   Depression in adults

Headline statistic	The proportion of adults who have depression
Indicator details	
Rationale	Depression is a significant public health problem in Australia. This indicator will report on the prevalence of adults who have depression.
	Depression and its related problems (e.g. disturbed sleep, loss of interest) can become chronic or recurrent and may lead to substantial impairments in an individual's ability to take care of his or her everyday responsibilities.
Numerator	The number of people aged 18 years and over who have depression
Denominator	Population aged 18 years or over
Presentation of 'other than headline' reporting	Age (in 10 year groups) by sex
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	ABS Survey of Mental Health and Wellbeing (SMHWB)
Additional notes/issues	
	The scope for the SMHWB is respondents aged 16 to 85 years.

1.4　Overweight and obesity in children

Headline statistic	The proportion of children who are overweight or obese
Indicator details	
Rationale	Excess body weight is a significant contributor to many chronic diseases. This indicator measures the prevalence of excess body weight in children.
	Children who are overweight or obese can experience psychosocial problems and may develop a range of health problems. Research has also shown that being overweight or obese as a child increases the likelihood of having excess weight in adulthood.
Numerator	The number of children who have a body mass index indicating they are overweight or obese for their age and sex
Denominator	Population aged 2 to 14 years
Presentation of 'other than headline' reporting	Age (grouped for example, 2–4, 5–9, 10–14) by sex
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	2007 Australian national Children's Nutrition and Physical Activity Survey, 1995 National Nutrition Survey, NSW Schools Physical Activity and Nutrition Survey.
Additional notes/issues	
	Body mass index (BMI) should be derived from **measured** data. Appropriate cut-offs (as developed by Cole et al.) should be used to assess whether a child is overweight.
	The BMI is considered problematic for use for children from different backgrounds such as from Pacific Islander origin.
	There are currently no recommended definitions for overweight or obesity in children aged less than 2 years.

1.5 Overweight and obesity in adults

Headline statistic	The proportion of adults who are overweight or obese
Indicator details	
Rationale	Excess body weight is a significant contributor to many chronic diseases. The increase in obesity worldwide has resulted in the World Health Organization (WHO) labelling it a global epidemic. This indicator measures the prevalence of excess weight in Australian adults.
	Adults who are overweight or obese have an increased risk of developing chronic conditions such as Type 2 diabetes, cardiovascular disease, high blood pressure and some cancers. Having excess body fat also influences an individual's ability to manage chronic conditions such as Type 2 diabetes and arthritis.
Numerator	The number of adults who have a body mass index indicating they are overweight or obese
Denominator	Population aged 18 years or over
Presentation of 'other than headline' reporting	Age (in 10 year groups) by sex
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	AusDiab 1999–00, 1995 National Nutrition Survey
Additional notes/issues	
	Body mass index should be derived from **measured** data.
	The 2007–08 National Health Survey (NHS) collected measured.
	Self-reported data, although not preferred, can be used as proxy information for years when measured data are not available. If used, limitations of self-reported data about height and weight should be reported.
	The BMI is considered problematic for use for persons from different backgrounds such as from Asian or Polynesian origin, as their distribution of fat-mass can differ to those from European descent (DoHA 2004).

1.6 Daily smoking

Headline statistic	The proportion of people aged 18 years and over who smoke daily
Indicator details	
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. This indicator will measure the prevalence of daily smoking in the Australian population.
	Smoking is a major contributor to hospitalisations, mortality and chronic diseases, such as heart disease, stroke and numerous cancers. Tobacco smoking is estimated to be responsible for 7.8% of the burden on the health of Australians.
Numerator	The number of people aged 18 years and over who smoke daily
Denominator	Population aged 18 years or over
Presentation of 'other than headline' reporting	Age (in 10 year groups) by sex
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	National Drug Strategy Household Survey (NDSHS); state & territory Computer Assisted Telephone Interview (CATI) surveys; NHS series
Additional notes/issues	
	. .

1.7 Low birthweight

Headline statistic	Proportion of live births that were less than 2,500g birthweight
Indicator details	
Rationale	Birthweight is a key indicator of infant health. This indicator will measure the proportion of all births that have a low birthweight.
	Low birthweight increases the risk of ill health and premature death after birth, as well as the increased likelihood of ill health during childhood and adulthood.
Numerator	The number of live births that were less than 2,500g birthweight
Denominator	All live births
Presentation of 'other than headline' reporting	By year
	By Indigenous status (of mother)
	By age of mother
	By SES
	By remoteness
Data collection details	
Data sources	National Perinatal Data Collection
Additional notes/issues	
	Excludes births with unknown birthweight and births less than 20 weeks gestation and less than 400 grams, and multiple births.

1.8   Life expectancy

Headline statistic	Life expectancy at birth
Indicator details	
Rationale	Life expectancy is the average number of years a person can expect to live at a particular age. It is a well-known summary measure of mortality that is used for comparisons across time and between countries.
Numerator	The number of years a male or female can expect to live at the time of their birth
Denominator	. .
Presentation of 'other than headline' reporting	By year
	By Indigenous status—see Indicator 1.9 below
	By sex
	By remoteness
Data collection details	
Data sources	ABS demographic statistics
Additional notes/issues	
	. .

1.9   Gap in life expectancy between Indigenous and non-Indigenous

Headline statistic	Gap in life expectancy between Indigenous and non-Indigenous
Indicator details	
Rationale	Life expectancy is the average number of years a person can expect to live at a particular age. Indigenous Australians have a shorter life expectancy than non-Indigenous Australians. In 2008, the Australian Government committed to closing the gap in life expectancy between Indigenous and non-Indigenous Australians.
Numerator	The number of years difference between the life expectancy of Indigenous and non-Indigenous Australians at birth
Denominator	. .
Presentation of 'other than headline' reporting	By sex
	By year
	By remoteness
Data collection details	
Data sources	ABS demographic statistics
Additional notes/issues	
	Methods to improve how life tables for Indigenous peoples and their life expectancy are calculated are currently under review (ABS 2008).

1.10   Deaths from leading potentially preventable chronic diseases

Headline statistic	The proportion of premature deaths due to leading preventable chronic diseases
Indicator details	
Rationale	This headline indicator is one of the five composite indicators in this set. It provides a one-statistic description of deaths from chronic disease in Australia. Change in this indicator may partly be explained by data presented under Indicator 2.21.
	Chronic disease contributes a large proportion to years of life lost. In 2003, preventable cancers, cardiovascular and chronic respiratory conditions accounted for two-thirds of years of premature life lost in Australia (Begg et al. 2007).
Numerator	The number of deaths due to:
	Ischaemic heart disease (IHD), lung cancer, stroke (cerebrovascular disease), breast cancer, colorectal cancer, chronic obstructive pulmonary disease (COPD), dementia, prostate cancer, or Type 2 diabetes
Denominator	Total number of deaths
Presentation of 'other than headline' reporting	Age (in 10 year groups) by sex
	Over time as age-standardised rates
	Deaths before 75 years of age
	By Indigenous status
	By remoteness
	By individual causes of death
	By SES
Data collection details	
Data sources	ABS deaths data
Additional notes/issues	
	Leading preventable chronic conditions do not necessarily relate to Top 10 causes of death. See also Indicator 2.21.
	ICD-10 codes used in the identification of cause of death:
	Underlying cause of death only
	IHD I20–I25
	Lung cancer C33, C34
	Stroke I60–I69
	Breast cancer C50
	Colorectal cancer C18–C21
	COPD J41–J44
	Dementia F00–F03, G30
	Prostate cancer C61
	Type 2 diabetes E11

1.11 Potentially avoidable hospitalisations— summary

Headline statistic	The proportion of hospitalisations which are considered to be avoidable
Indicator details	
Rationale	This indicator is one of the five composite indicators in the set. It provides a total headline statistic of the hospitalisations considered to be avoidable. Change in this indicator may partly be explained by data presented under Indicator no. 2.22.
	Avoidable hospitalisations are used as an indicator of the adequacy, efficiency and quality of primary health care within the broader health system. They represent a range of conditions for which hospitalisation should be able to be avoided, because the disease or condition has been prevented from occurring, or because individuals have had access to timely and effective primary care.
Numerator	The total number of hospital separations for selected chronic diseases which are considered to be avoidable
Denominator	Total hospital separations
Presentation of 'other than headline' reporting	By year
	By total (potentially) avoidable hospitalisations
	By remoteness
	By SES
Data collection details	
Data sources	National hospital morbidity database
Additional notes/issues	
	Chronic disease specific conditions include: diabetes complications; chronic obstructive pulmonary disease; angina; congestive heart failure; asthma; iron deficiency anaemia; hypertension; nutritional deficiencies.
	ICD-10-AM codes used in the derivation of avoidable hospitalisation due to chronic disease (AIHW 2008b):
	Asthma — J45, J46 as principal diagnoses only
	Congestive cardiac failure — I50, I11.0, J81 as principal diagnoses only, exclude 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.

(continued)

1.11 Potentially avoidable hospitalisations— summary (continued)

Headline statistic	The proportion of hospitalisations which are considered to be avoidable	
Additional notes/issues	Diabetes complications	E10–E14.9 as principal diagnoses and E10–E14.9 as additional diagnoses where the principal diagnoses was:

E10–E14.9 as principal diagnoses

and 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, exclude 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, exclude 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).

Note: The indicator can be used as an area level indicator; therefore the numerator and denominator need to be adjusted to reflect the area of reporting. For example, if the numerator is the number of ACSC in a particular area, the denominator should reflect the population of the same area (Ansari 2007).

4 Category 2 indicators

2.1 Incidence of key preventable cancers

Statistic	The incidence of key preventable cancers
Indicator details	
Rationale	This indicator is one of the five composite indicators in this set. It comprises seven cancers identified by stakeholders as the cancers most likely to change through preventive interventions. Indicators for other cancers of interest are described by the next two indicators (2.2 and 2.3).
	Many cancers share the same risk factors, e.g. smoking. Outcomes should be improved for preventable cancers as a whole by action on primary risk factors and other interventions.
Numerator	The number of new stomach, colorectal, lung, melanoma, kidney, cervix and liver cancers
Denominator	Total number of people in population
Presentation for reporting	By age (10 year groups) by sex
	By year
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By individual cancer type
	By SES
Data collection details	
Data sources	National Cancer Statistics Clearing House
Additional notes/issues	
	Cancer statistics are provided to the AIHW annually by the state and territory cancer registries. There is an approximate 3-year lag in reporting.

2.2   Incidence of prostate cancer

Statistic	The incidence of prostate cancer
Indicator details	
Rationale	This indicator describes a type of cancer that is of current interest to public health researchers.
	In 2004, prostate cancer was the most common new case of cancer registered, and the second most common cause of cancer death in males (AIHW & CA & AACR 2008). It is estimated that prostate cancer represents 34% of all prevalent cancers at 1 year and 5 years following diagnosis.
Numerator	The number of new cases of prostate cancer
Denominator	Total number of males in the population
Presentation for reporting	By age (10 year groups)
	By year
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	National Cancer Statistics Clearing House
Additional notes/issues	
	The increase in incidence of prostate cancer in the 1990s is considered to be an artefact of the increased use of the prostate-specific antigen test. Cancer statistics are provided to the AIHW annually by the state and territory cancer registries. There is an approximate 3-year lag in reporting.

2.3   Incidence of breast cancer

Statistic	The incidence of breast cancer
Indicator details	
Rationale	This indicator describes one of the cancers that were identified as having better outcomes though screening practices and early treatment, rather than through preventive actions associated with lifestyle behaviours.
	In 2004, breast cancer was the highest commonly registered new case of cancer in females. It was also the cause of the most cancer deaths in females in Australia (AIHW & CA & AACR 2008). It is estimated that breast cancer represents 32% of all prevalent cancers at 1 year, and 37% of all prevalent cancers at 5 years, following diagnosis.
Numerator	The number of new cases of breast cancer in females
Denominator	Total number of females in the population
Presentation for reporting	By age (10 year groups)
	By year
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	National Cancer Statistics Clearing House
Additional notes/issues	
	Cancer statistics are provided to the AIHW annually by the state and territory cancer registries. There is an approximate 3-year lag in reporting.

2.4   Dementia

Statistic	The proportion of the population with dementia
Indicator details	
Rationale	Dementia places a significant burden upon those with the condition, and carers of those with the condition. With the ageing of the population, the prevalence of dementia is expected to rise considerably, and will represent a significant challenge to health, aged care and social policy (AIHW 2007).
	Current research in terms of prevention and management of the disease is still not conclusive. It is considered that if management/treatment of dementia improves, the condition may become one that is managed; however, the impact of this on an individual is not known.
Numerator	The number of people aged 65 or over who have clinically diagnosed dementia
Denominator	The number of people aged 65 years or over
Presentation for reporting	By age (5 year groups) and sex
	Over time as age-standardised and age-specific rates
	By Indigenous status
	By remoteness
	By SES
	By Cultural and Linguistic Diversity (CALD), (or at least by country of birth)
Data collection details	
Data sources	There are currently extremely limited Australian data sources to ascertain the prevalence of dementia in Australia.
Additional notes/issues	
	There are many issues around the definition and diagnosis of dementia, and cognitive impairment (much of which could progress to dementia). The commonly used Diagnostic and Statistical Manual of Mental Disorders is currently under review.
	The ABS Survey of Disability and Ageing and Carers (SDAC) is currently the only single source of data about dementia in the population, but is considered extremely limited. However, it has been used to derive estimates for persons in cared accommodation and their level of functioning.
	Currently, prevalence of dementia in Australia is generally estimated using meta analyses; however this is heavily reliant on overseas data, many of which are now getting old.

2.5   Oral health

Statistic	The proportion of the dentate population with less than 21 teeth
Indicator details	
Rationale	This is an indicator of inadequacy of natural dentition among dentate people. Having less than 21 teeth has been associated with poorer oral health as well as inadequate nutritional status.
	Oral health problems are related to early childhood experiences, diet, smoking, exposure to fluoride, and health behaviours. Poor oral health can in turn affect diet and lead to other problems. Many oral health problems are preventable (NPHP 2001).
Numerator	The number of people aged 15 years and over with less than 21 teeth
Denominator	Population aged 15 years and over
Presentation for reporting	By age (10 year groups) by sex
	By year
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	The National Survey of Adult Oral Health
Additional notes/issues	
	There is increasing evidence that periodontal disease is linked with heart disease.
	The 2004–06 National Survey of Adult Oral Health interviewed people aged 15–97 years of age.

2.6   Arthritis

Statistic	The prevalence of clinically diagnosed arthritis
Indicator details	
Rationale	This indicator measures the prevalence of arthritis in the Australian population. There are different types of arthritis; however, their contributions to the burden of health are similar.
	In 2004–05, estimates from the NHS showed that arthritis was the most common serious long-term chronic condition experienced by Australians (over 3 million persons). Arthritis is more common in older age groups, and over half of those aged 65 years or over report having it. Arthritis contributes significantly to pain and disability in Australia (AIHW 2006).
Numerator	The number of people who have been told by a doctor or nurse that they have arthritis
Denominator	Total population
Presentation for reporting	By age (10 year groups) by sex
	By year
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
	By arthritis type
Data collection details	
Data sources	NHS series
Additional notes/issues	
	. .

2.7 Incidence of severe osteoporosis

Statistic	**Incidence of hospital separations for minimal trauma hip fractures among persons aged 40 years or over**
Indicator details	
Rationale	This indicator measures the incidence of severe osteoporosis. It is considered likely that the majority of hip fractures without major trauma in people aged 40 years and over would be osteoporotic in nature.
	Hip fractures are commonly caused by osteoporosis and may result in disability, loss of independence and premature mortality. In the vast majority of cases, the patient would be admitted to hospital for treatment.
Numerator	Number of hospital separations of persons aged 40 years or over with a principal diagnoses of hip fracture.
Denominator	Population aged 40 years and over
Presentation for reporting	By age (10 year groups) by sex
	Rate per 100,000 population aged 40 years or over
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	National hospital morbidity database
Additional notes/issues	
	Further information about this indicator can be sourced from AIHW 2006. Hospital separations, while not counting individuals, are considered a good proxy for incident cases of hip fractures.

2.8   Incidence of end-stage kidney disease

Statistic	New cases of treated end-stage kidney disease
Indicator details	
Rationale	This indicator measures the number of new cases of end-stage kidney disease in Australia.
	Chronic kidney disease imposes a substantial burden on both communities and individuals. People with end-stage kidney disease (ESKD) require kidney replacement therapy (dialysis or kidney transplant) to sustain life; these treatments are very expensive and require intensive health services. The burden of ESKD is likely to increase if the recent increases in numbers of people receiving treatments continue.
Numerator	The number of new cases of end-stage treated kidney disease
Denominator	. .
Presentation for reporting	By age (10 year groups) and sex
	By Indigenous status
	By remoteness
	By SES
	By CALD
Data collection details	
Data sources	Australia and New Zealand Dialysis and Transplant Registry data (ANZDATA)
Additional notes/issues	
	People who are receiving dialysis or living with a kidney transplant are said to have 'treated ESKD'. Estimates using ANZDATA are known to be an underestimate, as not all people will accept or be suitable candidates for kidney replacement therapy (AIHW 2005a).

2.9   Young people with depression

Statistic	The proportion of young people with depression
Indicator details	
Rationale	Depression is a significant public health problem in Australia. This indicator will report on the prevalence of depression among young people.
	Mental health problems (including depression) in young people, if not resolved, can lead to poorer quality of life, physical health problems, mental disorders, lowered academic and vocational attainment, risky behaviours, substance abuse, suicide ideation and attempts, and family discord (AIHW 2005b).
	Depression and anxiety are the most common mental health problems in young people (Beyondblue 2006). At any point in time, 2–5% of young people will experience depression that is of sufficient severity to warrant treatment; and, around 20% of young people will have experienced depression by the time they reach adulthood (NHMRC 1997).
Numerator	The number of people aged 12 to 17 years with depression
Denominator	Total number of people aged 12 to 17 years
Presentation for reporting	By sex
	Over time as age-specified rates
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	2007 ABS Survey of Mental Health and Wellbeing (SMHWB); the 1997 ABS SMHWB included a child component for those aged 6 to 14 years
Additional notes/issues	
	The scope of the 2007 ABS SMHWB is respondents aged 16 to 85 years.

2.10   High blood pressure

Statistic	The proportion of adults aged 25–64 years with high blood pressure
Indicator details	
Rationale	This indicator provides a measure of one of the largest risk factors for many chronic diseases.
	High blood pressure is often considered a risk factor for chronic disease, as well as a separate chronic disease itself. It is associated with coronary heart disease, stroke, heart failure, peripheral vascular disease and kidney failure. Nearly 8% of the burden of disease in 2003 was attributed to high blood pressure.
Numerator	The number of adults aged 25–64 years with high blood pressure (measured) or on medication for high blood pressure
Denominator	The number of adults aged 25–64 years
Presentation for reporting	By age (10 year groups) and sex
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	AusDiab 1999–00, Victorian Health Monitor
Additional notes/issues	
	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.

2.11   High blood cholesterol

Statistic	The proportion of adults with measured high blood cholesterol
Indicator details	
Rationale	This indicator provides a measure of the prevalence of a major risk to health.
	High blood cholesterol is a risk factor for diabetes-related complications, coronary heart disease and ischaemic stroke (AIHW 2008a). It is a basic cause of plaque deposits, the process by which the blood vessels that supply the heart and certain other parts of the body become clogged.
Numerator	The number of adults with measured high blood cholesterol (total)
Denominator	The population aged 18 years and over
Presentation for reporting	Reporting total cholesterol and low-density lipoproteins (LDL):
	By age (10 year groups) and sex
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES.
	Note
	Total cholesterol ≥ 5.5 mmol/L
	LDL ≥ 3.5 mmol/L
Data collection details	
Data sources	AusDiab 1999–00, Victoria Health Monitor, Australian Health Risks Survey
Additional notes/issues	
	Self-reported high cholesterol available from the NHS series & state/territory CATI surveys.

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

Statistic	The proportion of adults with diabetes who have a HbA1C level greater than 7%
Indicator details	
Rationale	This indicator measures poorly managed diabetes, and is used to determine whether the quality of clinical management for people with diagnosed diabetes is improving (AIHW 2007). Poorly managed diabetes increases the risk of cardiovascular disease and other associated complications.
	HbA1C is the only measure of glycaemic control that has been shown to be associated with long-term complications of diabetes (AIHW 2007).
Numerator	Adults with diabetes who have a HbA1C level greater than 7%
Denominator	Adults with diabetes
Presentation for reporting	By age and sex
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	AIHW's diabetes monitoring unit advise that the GP network from which these data are sourced is not representative, nor are the pathology databases. The Australian National Diabetes Information Audit and Benchmarking collection is based on an audit of patients attending a selection of specialist diabetes centres and endocrinologists in private practice; therefore it is not representative of the total population of people with diabetes.
Additional notes/issues	
	Victoria Health Monitor may contribute as a data source for this indicator.

2.13 Waist circumference

Statistic	The proportion of adults with a waist circumference that increases their risk of disease
Indicator details	
Rationale	This indicator provides a level of risk associated with excess weight. Waist circumference is a measure of central obesity, which is considered a better indicator for a range of health problems than total body mass. Increased central obesity is shown to be related to an increased risk of cardiovascular disease, Type 2 diabetes and some cancers. Unlike BMI, waist circumference is independent of height, particularly in those with a BMI less than 35 (DoHA 2004).
Numerator	The number of males aged 18 years and over with a waist circumference greater than or equal to 102 centimetres and females aged 18 years and over with a waist circumference of greater than or equal to 88 centimetres
Denominator	Population aged 18 years or over
Presentation for reporting	By age (10 year groups) and sex
	Over time as age-standardised rates
	By level of risk (see below)
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	2007–08 National Health Survey
Additional notes/issues	
	Data from the 2007–08 NHS are expected to be released mid 2009

Levels of risk increase with increasing waist circumference

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

As with BMI, the relationships between waist circumference and ethnic groups can differ. For example, it has been suggested that the cut-offs for persons from Asian backgrounds should be lower than above, and cut-offs for people from the Pacific Islands should be higher. These cut-offs have not yet been determined.

2.14   Smoking in pregnancy

Statistic	Proportion of women smoking during pregnancy
Indicator details	
Rationale	This indicator is one of the early life measures in this set, and is considered the most important known modifiable risk factor for low birthweight and infant mortality. It describes one of the first measures/predictors of health for infants.
	Smoking during pregnancy is a risk factor for both the infant and the mother. It is associated with low birthweight (see Indicator 1.7), pre-term birth, small for gestational age, and perinatal death. In addition to other health risks for adults (see Indicator 1.6), smoking during pregnancy increases the chance of early complications during pregnancy.
Numerator	The number of women who smoked during their pregnancy
Denominator	The number of women who delivered
Presentation for reporting	By age (grouped)
	By Indigenous status
	By remoteness
	By year
	By SES
Data collection details	
Data sources	National Perinatal Data Collection. *Note*: available for all jurisdictions except Victoria
Additional notes/issues	
	All reporting is done for the year of birth.

2.15   Smoking in young people

Statistic	Proportion of young men & women (aged 12–15, 16–17) who smoke daily
Indicator details	
Rationale	This indicator describes the prevalence of smoking in the younger population.
	Tobacco smoking is the single most preventable cause of ill health and death in Australia. Describing the prevalence of smoking in young people allows researchers, policy makers and program managers to monitor current anti-smoking campaigns and assess the relevant population groups targeted for health promotion interventions, with the aim of reducing the number of teenagers smoking currently and into adulthood.
Numerator	The proportion of young men & young women (aged 12–15 and 16–17) who smoke on a daily basis
Denominator	Total young men & young women (aged 12–15 and 16–17)
Presentation for reporting	By sex and age group as specified (aged 12–15 and 16–17)
	By Indigenous status
	By remoteness
	By year
	By SES
Data collection details	
Data sources	National Drug Strategy Household Survey; Australian Secondary Schools Alcohol and Drug Survey
Additional notes/issues	
	. .

2.16   Insufficient fruit consumption

Statistic	The proportion of people consuming insufficient serves of fruit
Indicator details	
Rationale	This indicator provides a measure of insufficient fruit consumption as defined by the NHMRC guidelines for healthy eating.
	Strong evidence exists that many compounds in fruit (phytochemicals) help to protect against a number of diseases, including cancer, cardiovascular disease, Type 2 diabetes, and vision problems (NHMRC 2003).
Numerator	The number of people aged 4 years or over who usually consume insufficient serves of fruit daily
Denominator	Population aged 4 years or over
Presentation for reporting	By sex and age group (appropriate to National Health and Medical Research Council guidelines, see below)
	By Indigenous status
	By remoteness
	By year
	By SES
Data collection details	
Data sources	2007 Children's Physical Activity & Nutrition Survey
	NHS series (for those aged over 12 years)
Additional notes/issues	
	Sufficiency of serves of fruit intake is based on the Australian Dietary Guidelines (NHMRC 2003):
	4–7 years: 1–2 serves
	8–11 years: 1–2 serves
	12–18 years: 3–4 serves
	19 years and over: 2 serves
	An Australian initiative 'Go for 2 & 5', recommends that Australian adults should aim to eat at least 2 serves of fruit per day.

2.17   Insufficient vegetable consumption

Statistic	The proportion of people consuming insufficient serves of vegetables
Indicator details	
Rationale	This indicator provides a measure of insufficient vegetable consumption as defined by the NHMRC guidelines for healthy eating.
	Strong evidence exists that many compounds in vegetables (phytochemicals) help to protect against a number of diseases, including cancer, cardiovascular disease, Type 2 diabetes, and vision problems (NHMRC 2003).
Numerator	The number of people aged 4 years or over who usually consume insufficient serves of vegetables daily
Denominator	Population aged 4 years or over
Presentation for reporting	By sex and age group (appropriate to NHMRC guidelines, see below)
	By Indigenous status
	By remoteness
	By year
	By SES
Data collection details	
Data sources	2007 Children's Physical Activity & Nutrition Survey
	NHS series (for those aged over 12 years)
Additional notes/issues	
	Sufficiency of serves of vegetable intake is based on the Australian Dietary Guidelines (NHMRC 2003).
	4–7 years: 2–4 serves
	8–11 years: 3–5 serves
	12–18 years: 3–4 serves
	19 years and over: 5 serves.
	An Australian initiative 'Go for 2 & 5', recommends that Australian adults should aim to eat at least 5 serves of vegetables per day.

2.18   Breastfeeding

Statistic	The proportion of infants exclusively breastfed at 4 months of age and at 6 months of age
Indicator details	
Rationale	This indicator provides a measure of the exclusive breastfeeding of infants in the population.
	Many benefits exist to both mother and infant from breastfeeding. Breast milk protects the infant from disease, a number of infections, and assists in the development of the immune system. The NHMRC recommends exclusive breastfeeding from birth to up to six months of age. Due to difficulties in measuring exclusive breastfeeding up to 6 months (when solid foods are often introduced), the ages of 4 months and 6 months have been specified for measurement.
Numerator	The number of infants aged 4 months and 6 months who are exclusively breastfed
Denominator	The number of infants aged 4 months and 6 months
Presentation for reporting	By individual age (in months) for infants aged 0–6 months, and at 1 week of age
	By age of mother
	By fully and exclusively breastfed
	By Indigenous status
	By remoteness
	By year
	By SES
Data collection details	
Data sources	No national data sources for this indicator exist. Data about exclusive breastfeeding are collected by some jurisdictions
Additional notes/issues	
	Exclusive breastfeeding is defined as the infant only receiving breast milk and no other food or drink (including water).

2.19   Risky alcohol consumption

Statistic	The proportion of people who consume alcohol at risky levels for long-term health
Indicator details	
Rationale	This indicator describes the levels of alcohol consumption that pose a risk to health in the long term. The measure is based on the Australian Alcohol Guidelines, which are currently under review.
	Regular excessive consumption of alcohol contributes to some cancers, liver disease and diabetes.
Numerator	The number of people aged 14 years and over who consume alcohol at levels considered risky for long-term health
Denominator	Total number of people aged 14 years and over
Presentation for reporting	Age grouped by sex
	By Indigenous status
	By remoteness
	By year
	By SES
Data collection details	
Data sources	National Drug Strategy Household Survey
Additional notes/issues	
	Some estimates are also available from the NHS series for people aged 18 years and over.

2.20   Physical inactivity

Statistic	**The proportion of adults who do not engage in sufficient physical activity to confer a health benefit**
Indicator details	
Rationale	This indicator measures the prevalence of insufficient physical activity for health benefits. It is based on a calculation of time and sessions as recommended by the National Physical Activity Guidelines.
	Physical inactivity is linked with an increased risk of chronic conditions. Conversely, regular physical activity helps maintain good health by helping prevent or manage chronic disease, by helping maintain a healthy musculoskeletal system and by helping to maintain a healthy body weight. Regular physical activity is also beneficial to a person's psychological wellbeing.
Numerator	The number of adults aged 18 years or over not engaged in sufficient physical activity (at least 150 minutes, accrued over at least 5 sessions per week) to confer a health benefit
Denominator	Population aged 18 years or over
Presentation for reporting	Age grouped by sex
	By Indigenous status
	By remoteness
	By year
	By SES
Data collection details	
Data sources	National Physical Activity Surveys
	State and territory CATI surveys
	NHS series (although slight differences in methodology, 'walking for transport' was only a recent addition to the survey)
Additional notes/issues	
	The Active Australia (AA) questionnaire is considered to be the best instrument for the collection of these data; however, national surveys using AA questions are infrequently run. The NHS can provide an indication of insufficient activity; however, questions about walking for transport have only recently been added to the survey.

2.21   Deaths from leading chronic conditions

Statistic	Deaths from leading chronic conditions
Indicator details	
Rationale	This indicator describes the patterns in deaths from leading chronic conditions.
	Chronic conditions are common causes of death in Australia. The monitoring of deaths caused by the conditions listed below, alongside estimates of incidence and prevalence, completes the picture of chronic disease in Australia.
Numerator	Number of deaths due to each of IHD, lung cancer, breast cancer, stroke, colorectal cancer, COPD, Type 2 diabetes, end-stage renal failure, liver cancer, asthma
Denominator	. .
Presentation for reporting	By rates (per 100,000 population) for individual year (use total population for denominator)
	Over time as age-standardised rates
	As proportion of all deaths
	Before the age of 75 years
	By age (10 year groups) and sex
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	ABS deaths data
Additional notes/issues	
	Leading preventable chronic conditions do not necessarily relate to main causes of death. This list reflects those conditions that are currently the focus of health governments and researchers, and therefore may change over time. ICD-10 codes used in the identification of cause of death:
	Underlying cause of death only
	IHD I20–I25
	Lung cancer C33, C34
	Stroke I60–I69
	Breast cancer C50
	Colorectal cancer C18–C21
	COPD J41–J44
	Dementia F00–F03, G30
	End-stage renal failure N18, N19
	Type 2 diabetes E11
	Liver cancer C22
	Asthma J45, J46
	Prostate cancer C61

2.22 Deaths from suicide

Statistic	Deaths from suicide
Indicator details	
Rationale	This indicator describes deaths due to suicide. It shows one facet of mental illness which is a significant burden to the health of Australians.
	Suicides account for a significant proportion of potential years of life lost in Australia, particularly for young males. Current research has indicated that there are links between suicide and mental illness, but the extent of these is not known.
Numerator	Number of deaths from suicide
Denominator	. .
Presentation for reporting	By rate (per 100,000 population) (use total population for denominator)
	Over time as age-standardised rates
	As proportion of all deaths
	By age (10 year groups) and sex
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	ABS deaths data
Additional notes/issues	
	ICD-10 codes used in the identification of cause of death:
	Underlying cause of death only
	Suicide X60–X84

2.23 Asthma action plan

Statistic	Proportion of people with current asthma who have a written asthma action plan
Indicator details	
Rationale	This indicator provides a measure of disease management.
	Having a written asthma action plan has been shown to improve outcomes in people with asthma. This indicator will measure whether action plans are being provided as recommended by the National Asthma Council Australia (NACA 2006).
Numerator	Number of people with current asthma who have a written asthma action plan
Denominator	All persons with current asthma
Presentation for reporting	By age (10 year groups) and sex
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	Currently no surveys collect this indicator precisely; NHS collects whether people with asthma have an asthma action plan
Additional notes/issues	
	Prevalence of asthma currently self-reported from the NHS.

2.24　Potentially avoidable hospitalisations— detailed

Statistic	Number of hospital admissions for selected chronic conditions that could have been prevented through access to timely and effective primary care
Indicator details	
Rationale	See Indicator 1.11
Numerator	Number of admitted patient (separations) that could have been prevented through access to timely and effective primary care for **each of**: diabetes complications; chronic obstructive pulmonary disease; angina; congestive heart failure; asthma; iron deficiency anaemia; hypertension; nutritional deficiencies.
Denominator	Total hospital admitted patient separations
Presentation for reporting	By year
	By age (grouped) and sex
	By individual chronic conditions
	As a proportion of total potentially avoidable hospitalisations
	By remoteness
	By SES
Data collection details	
Data sources	National hospital morbidity database
Additional notes/issues	
	ICD-10-AM codes used in the derivation of avoidable hospitalisation due to chronic disease (AIHW 2008b):

Asthma	J45, J46 as principal diagnoses only
Congestive cardiac failure	I50, I11.0, J81 as principal diagnoses only, exclude 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.

(continued)

2.24 Potentially avoidable hospitalisations— detailed (continued)

Additional notes/issues	Number of hospital admissions for selected chronic conditions that could have been prevented through access to timely and effective primary care	

	Diabetes complications	E10–E14.9 as principal diagnoses
		and 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, exclude 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, exclude 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–I09 as principal diagnoses only. (*Note*: includes acute rheumatic fever).

Note: The indicator can be used as an area level indicator; therefore the numerator and denominator need to be adjusted to reflect the area of reporting. For example, if the numerator is the number of ACSC in a particular area, the denominator should reflect the population of the same area (Ansari 2007).

2.25   Severe or profound activity limitations

Statistic	The proportion of people with severe or profound activity limitations
Indicator details	
Rationale	This indicator on the prevalence of the most severe or profound activity limitations assists policy makers, program managers, etc. in the planning for services and other requirements for people with disabilities.
	People with disabilities have special needs for assistance on a daily basis. How they experience and cope with disability can be greatly affected by the opportunities and services provided for them, for example, building infrastructures, transport, technical aids, personal assistance, and the ability to be employed where possible.
Numerator	The number of people with a severe or profound activity limitations
Denominator	Total Australian population
Presentation for reporting	By age (10 year groups) and sex
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
Data collection details	
Data sources	ABS Survey of Disability, Ageing and Carers
Additional notes/issues	
	The next ABS Survey of Disability, Ageing and Carers is scheduled to begin in April 2009 with results expected to be available in 2010.

5   Contextual indicators

Contextual indicators do not necessarily relate to one condition or determinant. However, they are considered to provide a broad view of health, and changes in these indicators may be the result of changes in underlying aspects of health.

C.1   Low income

Statistic	Low income
Rationale	There is much evidence that low income is linked to poorer health outcomes for Australians. High incomes improve access to health care, better food and housing, and preventive measures (AIHW 2008c).
	This indicator provides an overview of the inequality of income in the Australian population. The indicator is the ratio of equivalised weekly incomes at the 80th percentile to the 20th percentile income. It provides a contextual background to income distribution in Australia.
Numerator	High income: income at 80th percentile ranked by equivalised income
Denominator	Low income: income at 20th percentile ranked by equivalised income
Data sources	ABS Survey of Income and Housing
Presentation for reporting	By financial year
	To add value to this indicator, further information about income can be presented in terms of disposable income (see additional notes), and presented by:
	Income quintiles
	Second and third deciles
Additional notes	Disposable income = gross income – (direct tax + Medicare levy), then adjusted for differences in household composition and size using an equivalence scale.

C.2   Health literacy

Statistic	Proportion of the population with adequate health literacy
Rationale	This indicator shows the proportion of the population who have the cognitive and social skills to access, understand and use information to promote and maintain good health.
Numerator	Number of people aged 15–74 years with a health literacy proficiency skill level of 3 or more
Denominator	Number of people aged 15–74 years
Data sources	ABS Adult Literacy and Life Skills Survey (ALLS)
Presentation for reporting	By age (10 year groups) and sex
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
	By CALD
Additional notes	. .

C.3 Labour force status

Statistic	Labour force status
Rationale	Provides an overview of the structure of the available labour force in Australia.
Numerator	The labour force status of those aged 15 years and over
Denominator	Total population aged 15 years and over
Data sources	ABS—multiple surveys collect this, but mainly the Labour Force Survey
Presentation for reporting	By age (10 year groups) and sex
	Also by age groups within the 25–64 age range
	Over time as age-standardised rates
	By Indigenous status
	By remoteness
	By SES
Additional notes	. .

C.4 Health expenditure

Statistic	Health expenditure on selected chronic diseases
Rationale	Provides an indication of how much public money is being spent on chronic disease.
Numerator	Total health expenditure allocated by chronic diseases for each of IHD, lung cancer, stroke, colorectal cancer, breast cancer, COPD, Type 2 diabetes, ESKD, liver cancer, asthma, dementia and prostate cancer
Denominator	. .
Data sources	AIHW Disease Expenditure database
Presentation for reporting	By year
	By area of expenditure (e.g. prescriptions, admitted patient services)
Additional notes	Coding for these chronic conditions is based on ICD-10, and grouped to the same chapters and categories used in burden of disease studies (Begg et al. 2007: Annex Table 1).

6 Indicators for development

1.12 Chronic disease risk index

The chronic disease risk index (CDRI) is not yet viable to include in the set; substantial work is required in developing the index before it can be fully used and understood. However, the APHDPC and PHIDG consider that development of a CDRI could be undertaken.

The CDRI would have the functionality of a 'one statistic' for headline reporting as well as the capacity to be used across population subgroups. With appropriate development and testing, this index could also be used by individuals to indicate a personal level of risk for chronic disease, in a similar way that the BMI gives an indication of risk from excess weight.

Some initial work in the development of a CDRI has previously been undertaken by NSW researchers using the 2002 NSW Adult Health Survey. This work used three different methods to calculate an index, and all three resulted in the identification of very similar high-risk population subgroups (Miller & Bauman 2005). Testing of these and other methods on a national collection such as the ABS National Health Survey should be undertaken. Similar work, but to a lesser extent, was undertaken by the AIHW on multiple risk factors for cardiovascular disease (AIHW 2005c).

If the CDRI was developed, its structure and usability are such that it would be best placed within Category 1.

Chronic disease risk index

Headline statistic	The proportion of people whose CDRI is x
Rationale	The CDRI would be used as a high-level indicator for monitoring risk levels for chronic disease in the population.
	It is anticipated that the CDRI would be sensitive enough to show differences, and identify high levels of risk, in population subgroups. The CDRI could also be used to monitor levels of risk after health promotion and program activities.
Numerator	To be developed
Denominator	To be developed
Data sources	To be advised, possibly a large national collection such as the NHS series (includes the National Aboriginal and Torres Strait Islander Health Survey) or the future Australian Health Risks Survey.
Presentation for 'other than headline' reporting	By age group and sex
	By geographical area
	By SES
	By Indigenous status (this would take further development and testing)
Additional notes	. .

1.13   Health inequality index

Similar to the chronic disease risk index (CDRI), the health inequality index (HII) requires substantial development and testing before it can be used as a statistical measure. However, the APHDPC and PHIDG consider that such an indicator would be useful, and recommends that provision be made to include an HII in the **key indicators of progress for chronic disease and associated determinants** set.

Health inequalities are defined as differences in health status (such as rates of illness and death or self-rated health) that result from social, economic and geographic influences that are avoidable, unfair and unnecessary (VHPF 2005).

The HII could be constructed from several data items which individually are able to describe one or more facets of inequality in health. Some of these data items could be based on geographical areas (e.g. the Socio-Economic Indexes for Areas). The HII would have the functionality of a 'one statistic' for headline reporting as well as the capacity to be used across population subgroups. The HII will only be meaningful at a population level.

As yet, no work has been undertaken in the development of such an index, and how exactly the index would be used in terms of cross classifying with other data items is unknown. Data elements that could be analysed for suitability for the HII are included in the 'additional notes' below, however how those chosen will contribute (for example, do all items have the same weight?) also requires significant development and testing.

If the HII is developed, its structure and usability are such that it will be best placed within Category 1.

Health inequality index

Headline statistic	The proportion of people whose HII is x
Rationale	
Numerator	To be developed
Denominator	To be developed
Data sources	To be advised
Presentation for 'other than headline' reporting	To be advised
Additional notes	Possible data items/concepts that could be incorporated into a HII: Income Education (including access to) Adequate housing Access to health and community infrastructure Safety and justice Urban planning Work and meaningful employment Socio-Economic Indexes for Areas Healthy food and access to healthy food Self-assessed health status Indigenous status.

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