

APPENDIXES



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APPENDIX 1: METHODS

Statistical definitions and methods

Age-specific rates

Age-specific rates were calculated by dividing the number of events (such as deaths, disease cases or hospital separations) in each specified age group by the estimated resident population (ERP) for the corresponding age group. The rates are generally expressed as events per 1,000 population.

Age standardisation

This is a method of removing the influence of age when comparing populations with different age structures. For this report, the Australian ERP as at 30 June 2001 was used as the standard population. The same population was used for males and females to allow valid comparison of age-standardised rates between the sexes.

DIRECT AGE STANDARDISATION

Direct age standardisation is the most common method of age standardisation, and is used in this report for prevalence, hospitalisations and most deaths data. This method is generally used when the populations under study are large and the age-specific rates are reliable. The calculation of direct age-standardised rates has three steps:

- Step 1: Calculate the age-specific rate for each age group.
- Step 2: Calculate the expected number of cases in each age group by multiplying the age-specific rate by the corresponding standard population for each age group.
- Step 3: Sum the expected number of cases in each age group and divide this sum by the total of the standard population to give the age-standardised rate.

INDIRECT AGE STANDARDISATION

In situations where populations are small or where there is some uncertainty about the stability of age-specific rates, indirect standardisation is used. This effectively removes the influence of different age structures, but does not provide a measure of prevalence or mortality in terms of a rate. Rather, the summary measure is a ratio of the number of observed cases compared with the number that would be expected if the age-specific rates of the standard population applied in the population under study. Indirect standardisation is used in this report for prevalence and mortality by area of residence, socioeconomic status and Indigenous status. Calculation of these ratios has the following steps:

- Step 1: Calculate the age-specific rates for each age group in the standard population.

Step 2: Apply these age-specific rates to the number of people in each age group of the population under study, and sum these to derive the total expected number of cases in that population.

Step 3: Sum the observed cases in the population under study and divide this number by the expected number derived in step 2. This is the standardised mortality/prevalence ratio (SMR or SPR).

An SMR/SPR of 1 indicates the same number of observed cases as were expected, suggesting rates in the two populations are similar. An SMR/SPR greater than 1 indicates more cases were observed than were expected, suggesting rates in the population under study are higher than in the standard population.

ICD-10 mortality and ICD-10-AM morbidity codes

The following codes were used when reporting on mortality and hospital morbidity.

ICD-10 mortality codes

Asthma: J45, J46

Cerebrovascular disease: I60–69

Chronic obstructive pulmonary disease: J41–44

Colorectal cancer: C18–21

Coronary heart disease: I20–25

Diabetes: E10–14

Lung cancer: C33, C34

Osteoarthritis: M15–19

Osteoporosis: M80–82

Chronic kidney disease: B520, D593, E102, E112, E122, E132, E142, E851, I12, I13, I150, I151, N00, N01, N02, N03, N04, N05, N06, N07, N11, N12, N14, N15, N18, N19, N25, N26, N27, N28, N391, N392, Q60, Q61, Q62, Q63.

ICD-10-AM hospital morbidity codes

As above for asthma, cerebrovascular disease, chronic obstructive pulmonary disease, colorectal cancer, coronary heart disease, diabetes, lung cancer, osteoarthritis, osteoporosis.

Depression: F32, F33

Oral disease: K00–K14

Chronic kidney disease: as above, less B520, D593, E851, plus N16, T824, T861, Z490, Z491, Z492, Z940, Z992.



APPENDIX 2: DATA SOURCES

The information on mortality, health services use and health expenditure in this report is drawn from administrative databases. Information on the prevalence of risk factors and chronic diseases is drawn from various surveys. The major data sources used in this report are briefly described below.

Administrative data sources

AIHW Disease Expenditure Database

This database contains information on direct health expenditure in 2000–01 for around 200 different disease and injury categories. Estimates are available by age group, sex and area of expenditure — hospitals, high-level residential aged care, medical services, other professional services, pharmaceuticals and research. Capital expenditures, expenditure on community health (except community mental health), public health programs (except cancer screening), health administration and health aids and appliances were not allocated by disease group.

AIHW National Hospital Morbidity Database

This 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. In this report, disease data relate to the principal diagnosis reported for hospitalisations unless otherwise specified.

AIHW National Mortality Database

This database contains information on the cause of death 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. In this report, unless otherwise specified, death data relate only to the underlying cause of death.

Survey data sources

Australian Secondary Students' Alcohol and Drug (ASSAD) Survey

The ASSAD Survey has been conducted Australia-wide under the umbrella of the National Cancer Council. The most recent results published — from the 2002 survey — included information on substance use from over 23,000 students aged 12–17 years from 363 schools.

BEACH (Bettering the Evaluation and Care of Health) Survey of General Practice

The BEACH survey is an ongoing national survey looking at aspects of general practice in Australia, and is conducted by the Australian General Practice Statistics and Classification Centre (an AIHW collaborating unit within the Family Medicine Research Centre, University of Sydney). BEACH began in April 1998 and involves an ever changing random sample of GPs, each of whom records details regarding 100 consecutive patient encounters.

Child and Adolescent Physical Activity and Nutrition Survey (CAPANS)

CAPANS is a survey conducted in Western Australia by the Physical Activity Taskforce. It was undertaken from late August to early December in 2003 and collected information from 2,800 students from years 3 to 11 from 32 primary and secondary schools. Students were asked about their physical activity and nutritional intake via a questionnaire. A 24-hour food diary and objective measures of physical activity (for example, pedometers), along with height, weight and waist circumference measurements were also used.

National Drug Strategy Household Survey (2004)

The last National Drug Strategy Household Survey was conducted between July and November 2004 and includes data on almost 30,000 Australians aged 12 years and over. This was the eighth survey in a series that began in 1985. Respondents were asked about their knowledge of drugs, their attitudes towards drugs, their drug consumption histories and related behaviours.

State and territory computer-assisted telephone interview (CATI) surveys

The Australian Government and several state and territory governments have conducted computer-assisted telephone interview (CATI) surveys since the 1990s, with the aim of examining the health behaviours and health outcomes of Australians. As a result of this work, between 1993 and 2001 five states (New South Wales, Victoria, Queensland, Western Australia and South Australia) have introduced regular state-based survey programs to conduct surveillance of the health behaviours and outcomes of their populations. These five states represent almost 95% of the Australian population.

The results included in this report also draw on a 'gaps' survey conducted at the end of 2004 in the four states and territories that did not have comparable data available at the time.

National Health Survey (NHS) 2001

The 2001 NHS conducted by the ABS included around 26,900 people of all ages. Collection occurred between February and November 2001 across urban and rural areas of Australia. Non-private dwellings (for example, hospitals, nursing homes, hotels and boarding houses) were excluded. The survey collected information on long-term health conditions, use of health services, and health risk factors and behaviours.



National Health Survey (NHS) 2004–05

The 2004–05 NHS was conducted by the ABS between August 2004 and June 2005. Almost 26,000 people of all ages were surveyed. Non-private dwellings (for example, hospitals, nursing homes, hotels and boarding houses) were excluded. The survey collected information on long-term health conditions, use of health services, and health risk factors and behaviours.

National Nutrition Survey (1995)

The National Nutrition Survey was last conducted by the ABS in 1995 and was the largest and most comprehensive Australian survey of food and nutrient intake, dietary habits and body measurements. The survey collected information from a subsample of respondents from the 1995 National Health Survey: approximately 13,800 people from urban and rural areas of Australia. The National Nutrition Survey was conducted over a 13-month period from February 1995 to March 1996.

NSW Schools Physical Activity and Nutrition Survey (SPANS)

SPANS was a study funded by NSW Health and conducted by the NSW Centre for Overweight and Obesity. It surveyed 8,000 students in Term 1 of 2004 and collected information on children's sociodemographics, physical activity, nutrition, dieting and weight loss beliefs, and perceptions of aspects of the social and physical environments relevant to physical activity participation and food consumption. Direct measurements (for example, height and weight) cardiorespiratory endurance, and fundamental movement skill proficiency were also measured.

APPENDIX 3: AUSTRALIAN ALCOHOL GUIDELINES

Risk of alcohol-related harm in the long term

Sex/period	Low risk (standard drinks)	Risky (standard drinks)	High Risk (standard drinks)
Males			
On an average day	Up to 4 per day	5 to 6 per day	7 or more per day
Overall weekly level	Up to 28 per week	29 to 42 per week	43 or more per week
Females			
On an average day	Up to 2 per day	3 to 4 per day	5 or more per day
Overall weekly level	Up to 14 per week	15 to 28 per week	29 or more per week

Source: NHMRC 2001.

Risk of alcohol-related harm in the short term

Sex/period	Low risk (standard drinks)	Risky (standard drinks)	High Risk (standard drinks)
Males			
(On any one day)	Up to 6 On any day, no more than 3 days per week	7 to 10 On any one day	11 or more On any one day
Females			
(On any one day)	Up to 4 On any day, no more than 3 days per week	5 to 6 On any one day	7 or more On any one day

Source: NHMRC 2001.



GLOSSARY

angina: Temporary chest pain or discomfort when the heart's own blood supply is inadequate to meet extra needs, as in exercise.

arthritis: Group of disorders in which there is inflammation of the joints which can become stiff, painful, swollen or deformed. The two main types of arthritis are *osteoarthritis* and *rheumatoid arthritis*.

asthma: Inflammatory disease of the air passages that makes them prone to narrow too easily and too much in response to 'triggers', causing episodes of shortness of breath and wheezing or coughing. The triggers include exercise, pollen, dust mites, cold weather, throat and chest infections, tobacco smoke and other factors.

atherosclerosis: Process that gradually clogs arteries, through fatty and fibre-like deposits building up on the inner walls of the arteries; can lead to *cardiovascular disease*.

atrial fibrillation: Disorder of heart rate and rhythm in which the upper heart chambers (atria) are stimulated to contract in a very rapid and/or disorganised manner.

blood cholesterol: Fatty substance produced by the liver and carried by the blood to supply the rest of the body. Its normal function is to provide material for cell walls and for steroid hormones, but if levels in the blood are too high it can lead to *atherosclerosis*.

blood pressure: Force exerted by blood against the walls of the arteries. The force is created by the pumping action of the heart, at contraction (systolic) and at relaxation (diastolic).

body mass index (BMI): Commonly used method of assessing whether a person is a healthy weight for his or her height. Calculated by dividing the person's weight (in kilograms) by their height (in metres) squared, that is, kg/m².

bronchitis: Respiratory disease in which the membranes of the bronchi (main air passages in the lungs) are irritated and inflamed. This causes the tiny airways in the lungs to narrow or shut off, resulting in coughing spells accompanied by thick phlegm and breathlessness.

cardiovascular disease: Any disease of the heart or blood vessels, including *heart attack*, *angina*, *stroke* and *peripheral vascular disease*.

cause of death: The disease or factor contributing to the death. When used technically, this term is usually applied to the 'underlying cause' listed on the medical certificate issued at death. The *underlying cause of death* is defined as the main disease that initiated the train of events leading directly to death, as distinct from *associated causes of death* which are conditions, diseases or injuries that contributed to the death, directly or indirectly.

cerebrovascular disease: Group of disorders of the blood vessels supplying the brain or its covering membranes. A major form is stroke, in which a vessel is either blocked or bleeds, causing part of the brain to be deprived of oxygen. This can result in paralysis or loss of other bodily functions.

chronic bronchitis: Long-term condition with inflammation of the bronchi, the main air passages of the lungs, causing frequent coughing attacks and coughing up of mucus.

chronic disease: Term applied to a diverse group of diseases that tend to be long-lasting and persistent in their symptoms or development. Although these features apply to some infectious (communicable) diseases, the term is usually confined to non-communicable diseases.

chronic obstructive pulmonary disease (COPD): A progressive disease of the lungs and airways resulting in worsening shortness of breath on exertion. The main underlying disease process is *emphysema*, and this is normally coupled with *chronic bronchitis*.

comorbidity: The existence of two or more health problems at the same time in one person.

complications: Secondary condition or illness resulting directly or indirectly from another disease (or its treatment).

coronary heart disease (CHD): *Heart attack* and *angina* (chest pain). Also known as *ischaemic heart disease*.

dementia: General and worsening loss of brain functions such as memory, understanding and reasoning.

dental caries: Tooth decay.

depression: Mood disorder with prolonged feelings of hopelessness and being sad, low and inadequate, with a loss of interest or pleasure in activities and often with suicidal thoughts or self-blame.

dialysis: Method of removing excess waste substances from the blood when the kidneys are unable to work effectively.

diphtheria: Bacterial infection that usually starts with soreness of the throat and tonsils but which can also affect other parts of the body and become severe enough to block breathing. It is preventable by vaccine.

disability: Multidimensioned concept relating to impairment in body structure or function, limitation in activities (such as mobility), restriction in participation (such as work or education), and the affected person's environment.

eczema: Common, typically long-term, skin condition marked by an itchy rash and often found among people with allergies.

emphysema: Chronic lung disease where overexpansion or destruction of the lung tissue blocks oxygen intake, leading to shortness of breath and other problems.

encounter (general practitioner): Any professional interchange between a patient and a general practitioner.

gestational diabetes: Diabetes which is first diagnosed during pregnancy (gestation). It may disappear after pregnancy but signals a high risk of diabetes occurring later on.



glomerulonephritis: Inflammation in the primary filtration units of the kidney (the glomeruli); frequently follows infections, especially those of the skin and upper respiratory tract caused by particular strains of bacteria.

glucose: Main sugar the body uses for energy. Glucose comes from the breakdown of carbohydrates in the diet as well as from the breakdown of glycogen (the storage form of glucose) in the liver.

HDL cholesterol: Cholesterol packaged in high-density lipoprotein particles.

health risk factor: Any factor that represents a greater risk of a health disorder or other unwanted condition. Some risk factors are regarded as causes of disease, others are regarded as mere contributors.

heart attack: Life-threatening emergency that occurs when a vessel supplying blood to the heart muscle is suddenly blocked completely. The event may lead to the death of a part of the heart muscle. The medical term commonly used for a heart attack is myocardial infarction.

heart failure: When the heart cannot pump strongly enough to keep the blood circulating around the body at an adequate rate.

hepatitis: Inflammation of the liver, which can be due to certain viral infections, excess alcohol, or a range of other causes.

Hib (Haemophilus influenzae type b): Bacterial infection of infants and children that can cause meningitis, pneumonia and other serious effects. It is preventable by vaccine.

hospital separation: Formal process by which a hospital records the completion of treatment and/or care for an admitted patient. The episode of care may be completed by the patient's discharge, death, transfer to another hospital, or change in type of care.

hypertensive disease: Long-term high *blood pressure*; may damage the vessels of the heart, brain or kidneys.

immunisation: Inducing immunity against infection by the use of an antigen to stimulate the body to produce its own antibodies. See *vaccination*.

impairment: Any loss or abnormality of psychological, physiological or anatomical structure or function.

incidence: Number of new cases (of a disease, condition or event) occurring during a given period. Compare with *prevalence*.

indicator: Statistic chosen to describe (indicate) a situation concisely, help assess progress and performance, and act as a guide to decision making. It may have an indirect meaning as well as a direct one; for example, Australia's overall death rate is a direct measure of mortality but is often used as a major indicator of population health.

Indigenous: 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.

inflammation: Local response to injury or infection, marked by local redness, heat, swelling and pain. Can also occur when there is no clear external cause and the body reacts against itself, as in auto-immune diseases.

insulin: Hormone produced in the pancreas that helps *glucose* to enter body cells for energy metabolism.

insulin resistance: Condition in which *insulin* works inefficiently and the body compensates by producing an excess supply.

International Classification of Diseases (ICD): Internationally accepted statistical classification of disease and injury, produced by the World Health Organization.

intervention (for health): Any action taken by society or an individual which 'steps in' (intervenes) to improve health, such as medical treatment and preventive campaigns.

ischaemic heart disease: See *coronary heart disease*.

life expectancy: Indication of how long a person can expect to live. Technically it is the number of years of life remaining to a person at a particular age if death rates do not change.

measles: Highly contagious infection, usually of children, that causes flu-like symptoms, fever, a typical rash and sometimes serious secondary problems such as brain damage. It is preventable by vaccine.

Medicare: A national, government-funded scheme that subsidises the cost of personal medical services for all Australians and aims at helping them afford medical care. Administrative data from the scheme are useful for analysing patterns of care.

metabolic syndrome (also called Syndrome X): Symptom cluster associated with a high risk of coronary heart disease and stroke. Central to metabolic syndrome is *insulin resistance*. Other common signs are impaired glucose tolerance, excessively high blood insulin levels, high blood pressure, abnormal blood cholesterol levels (specifically high levels of triglycerides and low levels of HDL cholesterol), increased uric acid, and excessive abdominal body fat.

morbidity: Term referring to ill health in an individual and to levels of ill health in a population or group.

mortality: Death.

mumps: Contagious viral disease marked by acute and painful swelling of the saliva-producing glands, often similarly affecting the testicles and sometimes other parts.

musculoskeletal: Relating to the muscles, joints and bones.

neoplasm: Abnormal ('neo', new) growth of tissue. Can be 'benign' (not a cancer) or 'malignant' (a cancer). Same as a *tumour*.

obesity: Increased adiposity or fat mass, associated with several chronic diseases and their risk factors. Typically defined as *body mass index* > 30, or waist circumference > 102 cm for males or > 88 cm for females.



ophthalmology: Medical specialty dealing with eye diseases.

osteoarthritis: Most common form of arthritis, associated with a breakdown of cartilage in joints and commonly occurs in the hips, knees and spine.

osteoporosis: Reduction in bone mass caused by the loss of calcium from the bones, making them weaker and thus more prone to fractures.

pathology: General term for the study of disease, but often used more specifically for diagnostic services which examine specimens, such as samples of blood or tissue.

periodontal: Refers to the supporting structures of the teeth, including the gums, connective tissue and bone.

peripheral vascular disease: Pain in the legs because of an inadequate blood supply to them.

pertussis (whooping cough): Highly infectious bacterial disease of the air passages marked by explosive fits of coughing and often a whooping sound on breathing in. It is preventable by vaccine.

poliomyelitis (polio): Disease involving muscle paralysis, wasting and deformity of limbs after infection by a common virus (poliovirus) that can damage the so-called motor nerves in the spinal cord. It is preventable by vaccine.

polyps: Projecting growths from a mucous surface such as the inside of the bowel; may be benign (non-cancerous) or able to develop into a cancerous growth.

prevalence: Number or proportion (of cases, instances, etc.) present in a population at a given time. Compare with *incidence*.

prevention (of disease): Action to reduce or eliminate the onset, causes, complications or recurrence of disease.

primary prevention: Limiting the incidence of disease and disability in the population by actions that eliminate or reduce causes or determinants of departures from good health, control exposure to risk and promote factors that are protective of health.

principal diagnosis: Diagnosis established after study to be chiefly responsible for occasioning the patient's episode of care in hospital (or attendance at the health care facility).

quintile: Group derived by ranking the population according to specified criteria and dividing it into five equal parts.

rheumatoid arthritis: Chronic inflammatory disease where the person's immune system attacks his or her own body tissues (an auto-immune condition) causing destruction of the joints.

risk factor: See *health risk factor*.

rubella (German measles): Contagious viral disease of children and young adults which has mild symptoms but which often causes serious birth defects if it occurs in a mother during the first three months of pregnancy. It is preventable by vaccine.

secondary prevention: Reducing progression of disease through early detection, usually by screening at an asymptomatic stage, and early intervention.

separation: See *hospital separation*.

stroke: Major form of *cerebrovascular disease* in which an artery supplying blood to the brain suddenly becomes blocked or bleeds, often causing paralysis of parts of the body or speech problems.

suicide: Deliberately ending one's own life.

symptom: Any indication of a disorder that is apparent to the person affected; compare with 'sign', which is apparent to an observer.

tertiary prevention: Improving functioning and minimising the impact of established disease — and preventing or delaying complications — through effective management and rehabilitation.

tetanus: Serious infection with a bacterial nerve poison causing spasm of the jaw muscles (lockjaw) and body muscles generally, from a bacterium entering through a wound. The disease is preventable by vaccine.

triglycerides: Hydrophobic, neutral lipid, packaged with proteins and cholesterol in various lipoprotein particles.

Type 1 diabetes: Form of diabetes usually arising in childhood or youth ('juvenile onset'), marked by a complete lack of insulin and needing insulin replacement for survival.

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

underlying cause of death: Main disease or injury initiating the sequence of events leading directly to death. See *cause of death*.

uric acid: Substance present in small amounts in human urine, and also found in the joints in gout.

vaccination: Process of administering a vaccine to a person to produce immunity against infection. See *immunisation*.



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