

## 2 Indicators for cardiovascular health

The previous chapter provided a general overview of the cardiovascular health of Australians using data from routine administrative sources, regular and ad-hoc population surveys, and special studies and registers. However, the wide range of data presented does not give a systematic assessment of progress towards the overall NHPA goal of 'improving cardiovascular health by reducing heart disease, stroke and vascular disease, and their impact on the population'.

To do this, a concise set of priority indicators has been developed that recognises the complex process needed to improve health and the range of interventions involved. The approach offers an effective way of reporting progress towards the goal by using several strategic indicators. This chapter briefly describes the process of developing these indicators, and summarises current trends where there are data available for the indicators. The indicators are reported against more fully in Appendixes 1 and 2.

Although the report gives trends over time for many of the indicators for which suitable time-series information is available, progress towards targets has not been included in this report. The NHPC agreed to the revision of the set of cardiovascular indicators given in the *First Report on National Health Priority Areas 1996* (AIHW & DHFS 1997). While most of the indicators have been developed for the first time, some of the coronary heart disease indicators included in the *First Report* have been redesigned to cover wider age ranges. In the case of risk factor indicators and targets, the NHPC is developing a set that applies to the range of NHPAs. This recognises the common causes of these areas and the scope for a general preventive approach.

A parallel process is currently underway to establish a new set of indicators with defined targets. This process will avoid the current plethora of targets and focus on one or two strategic, mapping indicators, with set targets, for each priority area. Progress towards these targets will be included in the next report to Health Ministers.

### 2.1 The development process

The *First Report on National Health Priority Areas 1996* (AIHW & DHFS 1997) documented progress against 10 of the 23 cardiovascular indicators for which there were adequate data. The working group that developed these indicators focused on coronary heart disease and recommended that indicators be developed later for stroke and other heart, stroke and vascular diseases, including those that are important to specific population groups (DHS 1994a).

## Indicators for cardiovascular health

The new set of indicators for cardiovascular health was developed by the Expert Advisory Group on Heart, Stroke and Vascular Disease, and its working groups, in collaboration with the National Centre for Monitoring Cardiovascular Disease at the AIHW. The work was conducted on behalf of the NHPC and included consultations with relevant groups. The development process was as follows.

- Priority indicators for stroke were identified from a list of over 80 potential indicators, compiled from the National Stroke Strategy report (Stroke Australia Task Force 1997) and supplemented from other Australian and international sources.
- The criteria for selection included feasibility of measurement, scientific validity, policy relevance, priority and data availability. A framework developed by a working party of the National Health Information Management Group was used to ensure that indicators were developed across the continuum of care (AIHW & DHFS 1997).
- The priority stroke indicators were merged with the existing indicators for coronary heart disease and recommendations were made for a composite set of priority indicators for cardiovascular health.
- The indicator set was further refined through consultation with specialist working groups covering primary prevention, cardiac and vascular disease, stroke, Indigenous and remote populations and information management.
- The indicator set was also considered by the Advisory Committee for the National Cardiovascular Monitoring System.

The result is a set of 22 indicators for cardiovascular health, endorsed by the NHPC, that covers coronary heart disease, stroke and peripheral vascular disease, and includes specific indicators for rural and remote area populations (Table 2.2).

A set of eight risk factor indicators, with relevance to chronic diseases in general as well as to heart, stroke and vascular disease, has also been endorsed by the NHPC. These indicators are relevant to other NHPAs as well (Table 2.1).

Data are available for all eight risk factor indicators and for 10 of the 22 indicators specific to cardiovascular health. For some of the indicators where there are no current data, development of the necessary data system or method is in progress to enable the indicators to be monitored.

Indicators of cardiovascular health for the Indigenous population have been included in the set of indicators proposed by the Office of Aboriginal and Torres Strait Islander Health (OATSIH) and endorsed by the Australian Health Ministers' Advisory Council (AHMAC). Progress against these indicators will therefore be reported separately.

## 2.2 Overview of indicators and trends

The indicator set of risk factors for heart, stroke and vascular disease and other chronic diseases is given in Table 2.1. The heart, stroke and vascular disease-specific indicators are described in Table 2.2.

Against each indicator is an assessment of whether the underlying trend is favourable or unfavourable, or increasing or decreasing. Suggestions are also offered as to how to interpret changes in the indicator over time (ie what factors influence the indicator).

More detailed information on each of the indicators, including data for previous years, is given in Appendixes 1 and 2. Appendix 3 discusses data and statistical issues.

**Table 2.1: Indicators for monitoring risk factors for heart, stroke and vascular disease and other NHPAs**

Indicator	Interpretation	Trend
1.1 Proportion of adults who smoke regularly, ages 18 or more	An indicator of the proportion of the population at increased risk of tobacco-related diseases and conditions. An outcome indicator for prevention efforts.	Favourable
1.2 Proportion of secondary school students who smoke, age 15	An indicator of the propensity of adolescents to start smoking. An indicator of future adult smoking rates.	Static
1.3 Proportion of adults not engaged in regular physical activity, ages 18 or more	An indicator of the proportion of adults at increased risk of illness through following a sedentary lifestyle. An outcome indicator for prevention efforts.	Marginally favourable
1.4 Proportion of adults who are overweight, ages 18 or more	An indicator of the proportion of adults at increased risk of illness through being overweight.	Unfavourable
1.5 Proportion of adults with high blood pressure and/or on antihypertensive treatment, ages 20–69	An indicator of the proportion of the population at increased risk of heart, stroke and vascular disease from high blood pressure.	Favourable
1.6 Mean blood pressure level, ages 20–69	An indicator of the population risk of heart, stroke and vascular disease from high blood pressure.	Favourable
1.7 Proportion of adults with high blood cholesterol, ages 20–69	An indicator of the population risk of heart, stroke and vascular disease from high blood cholesterol levels.	Recent trend data not available
1.8 Contribution of saturated fat as a proportion of total energy intake, ages 25–64	An indicator of the population risk of increased cholesterol levels and being overweight.	Favourable

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**Table 2.2: Indicators for monitoring heart, stroke and vascular disease**

Indicator	Interpretation	Trend	
<i>Coronary heart disease</i>			
2.1	Incidence rates for myocardial infarction, ages 30–79	An indicator of the effectiveness of prevention of coronary heart disease.	Trend data not available
2.2	Median delay between the onset of chest pain and presentation for emergency care at hospital, all ages	An indicator of pre-hospital response time to a cardiac emergency.  An indicator of uptake by the public of education messages.	Data not available
2.3	Time from presentation at emergency department to clinical and electrocardiogram assessment and administration of appropriate reperfusion therapy (thrombolysis or angioplasty), all ages	An indicator of in-hospital response time to a cardiac emergency.	Data not available
2.4	Hospital separation rates for principal diagnosis of unstable angina, ages 0–79	An indicator of the use of hospital resources (caseload, throughput) for unstable angina.	Increasing
2.5	Hospital separation rates for principal diagnosis of congestive heart failure, ages 0–79	An indicator of the use of hospital resources (caseload, throughput) for congestive heart failure.	Static
2.6	Proportion of cardiac patients who enter and complete a rehabilitation program, all ages	An indicator of the net effect of promoting rehabilitation programs and their availability.	Data not available
2.7	Proportion of patients who die, suffer myocardial infarction or undergo further revascularisation procedure (angioplasty or bypass surgery) within 12 months of angioplasty treatment for coronary heart disease, all ages	An outcome indicator for the efficacy of angioplasty for coronary heart disease.	Data not available
2.8	Proportion of patients who die, suffer myocardial infarction or undergo revascularisation at 28 days and 1 year after having undergone surgical treatment for coronary heart disease, all ages	An outcome indicator for the efficacy of surgical treatment for coronary heart disease.	Data not available
2.9	Proportion of people with mild/moderate/severe disability at six months following diagnosis of initial cardiac event, all ages	An indicator of the net effect of prevention on severity of the disease and effectiveness of therapy following a cardiac event.	Data not available
2.10	Death rates for coronary heart disease, ages 0–79	An indicator of the net effect of prevention and management of coronary heart disease.	Favourable
2.11	Death rates for coronary heart disease among rural and remote area residents, ages 0–79	An indicator of the net effect of prevention and management of coronary heart disease among people living in rural and remote areas.	Favourable

*continued*

## Overview of indicators and trends

**Table 2.2: Indicators for monitoring heart, stroke and vascular disease (continued)**

Indicator	Interpretation	Trend	
<i>Stroke</i>			
3.1	Incidence rates for stroke, all ages	An indicator of the effectiveness of prevention of stroke.	Data not available
3.2	Median delay between the onset of stroke symptoms and presentation for emergency care at hospital, all ages	An indicator of pre-hospital response time to a stroke emergency. An indicator of uptake by the public of health education messages.	Data not available
3.3	Proportion of patients admitted to hospital with acute stroke who are managed in specialised stroke units (dedicated multidisciplinary teams), all ages	An indicator of the availability of specialised stroke units.	Data not available
3.4	Proportion of people whose main/underlying disabling condition is stroke, ages 25 or more	An indicator of the burden of stroke in the population.	Trend data not available
3.5	Proportion of people with mild/moderate/severe disability at six months following diagnosis of initial stroke event, all ages	An indicator of the net effect of prevention on severity of the disease and effectiveness of therapy following a cardiovascular event.	Data not available
3.6	Case fatality rate for stroke within 28 days, all ages	An indicator of the severity, emergency response and in-hospital management of stroke.	Data not available
3.7	Death rates for stroke, ages 0–79	An indicator of the net effect of prevention, treatment and management of stroke.	Favourable
3.8	Death rates for stroke among rural and remote area residents, ages 0–79	An indicator of the net effect of prevention, treatment and management of stroke among people living in rural and remote areas.	Favourable
<i>Peripheral vascular disease and abdominal aortic aneurysm</i>			
4.1	Hospital separation rates for major amputation due to peripheral vascular disease, ages 0–79	An indicator of the incidence of major amputation for peripheral vascular disease. An indicator of the incidence of severe cases of peripheral vascular disease.	Increasing
4.2	Hospital separation rates for emergency and elective surgery for abdominal aortic aneurysm, ages 0–79	An indicator of the incidence of major surgery for abdominal aortic aneurysm. An indicator of the incidence of severe cases of abdominal aortic aneurysm.	Static
4.3	Proportion of people with mild/moderate/severe disability at six months following diagnosis of initial vascular event, all ages	An indicator of the net effect of prevention on severity of the disease and effectiveness of therapy following a cardiovascular event.	Data not available

## 2.3 Summary of trends

This section summarises the information given in Appendixes 1 and 2 on those indicators of general and cardiovascular health for which national data are available. A summary of trends for selected indicators is given in Table 2.3.

### Risk factors

#### *Tobacco smoking*

- The prevalence of smoking in the general population has been declining since the early 1980s and this trend has continued into the 1990s, although the rate of decline has slowed recently. About 27 per cent of adult males and 21 per cent of adult females, corresponding to some 3.2 million people, reported tobacco smoking in 1995.
- Among 15-year-old secondary school students, the prevalence of those who 'smoked last week' has remained relatively stable during the past 10 years, at around 24 per cent in males and 29 per cent in females.

#### *Physical inactivity*

- There was no change in physical activity patterns during the 1980s, and little change since then. Between 1989–90 and 1995, the prevalence of physical inactivity in the general population decreased slightly to about 34 per cent for both males and females. The prevalence of self-reported walking for recreation or exercise increased over this period.

#### *Overweight*

- The prevalence of overweight people increased steadily during the 1980s and this trend has continued in the 1990s. About 63 per cent of adult males and 48 per cent of adult females are currently overweight, based on physical measurements taken in the 1995 National Nutrition Survey (ABS & HEALTH 1998).

#### *Hypertension*

- During the 1980s, the prevalence of hypertension declined significantly in both sexes, a trend that has continued into the 1990s. In 1995, about 17 per cent of males aged 20–69 and 10 per cent of females of the same age reported having hypertension.
- Average blood pressure levels among adults decreased significantly in both sexes during the 1980s and this trend has continued into the 1990s.

#### *High blood cholesterol*

- Blood cholesterol levels remained stable during the 1980s. No national data have been collected in the 1990s to enable the examination of trends since 1989.
- In 1989, among those aged 20–69, 47 per cent of males and 39 per cent of females had high blood cholesterol levels, defined as 5.5 mmol/L or greater.

#### *Saturated fat*

- The contribution of saturated fat to total energy intake declined from 16 per cent in 1983 to under 13 per cent in 1995.

## Coronary heart disease

### *Incidence*

- It is estimated that in 1995–96, coronary events (essentially heart attacks and sudden deaths) occurred at a rate of 421 per 100,000 population among males aged 35–69, and 137 per 100,000 population among females of the same age. Reliable data for examining the trend in incidence are not available.
- Non-fatal episodes accounted for about 65 per cent of the total number of coronary events in 1995–96.

### *Hospitalisation*

- During 1996–97, the age-standardised hospital separation rate for unstable angina was 337 per 100,000 males aged 0–79 and 166 per 100,000 females of the same age.
- Although there was an apparent increase in the rate of hospitalisation for unstable angina between 1993 and 1997, this may be partly due to changes in coding practice introduced in 1995.
- The age-standardised rate of hospital separations for congestive heart failure was 98 per 100,000 population in males aged 0–79 and 55 per 100,000 population in females of that age in 1996–97.
- There appears to have been little change in the rate of hospitalisation for congestive heart failure in the period 1993–1997, except for a fall in the last year among females.

### *Deaths*

- There has been a downward trend in coronary heart disease mortality in the past three decades. Between 1985 and 1996, mortality from coronary heart disease declined by about 5 per cent per year among those aged 0–79.
- In 1996, there were 29,637 deaths due to coronary heart disease, with a rate of 195 per 100,000 males and 105 per 100,000 females of all ages.
- Among the Indigenous population, mortality from coronary heart disease is declining at a slower rate among males (1.1 per cent per year) but at a similar rate among females (7.7 per cent per year) compared with their non-Indigenous counterparts. In 1994–1996 Indigenous Australians were 1.6 times more likely to die from coronary heart disease than other Australians.
- Coronary heart disease mortality rates declined across urban, rural and remote areas over 1986–1996, but the fall among males has been less in remote areas. Mortality from this cause tends to be higher among males living in rural and remote areas than in urban areas. This difference is not apparent among females.

## Stroke

### *Disability*

- About 14,500 males and 17,100 females reported having been disabled by stroke in 1993, which is a prevalence rate of about 300 per 100,000 population.
- The Australian Bureau of Statistics (ABS) conducted a survey of disability in Australia during 1998, which will allow examination of the trend for this indicator.

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### Deaths

- Stroke death rates have decreased over the past three decades. The annual fall in death rates in the period 1985–1996 was around 4 per cent among males aged 0–79 and about 5 per cent among females of the same age.
- There were 12,806 deaths due to stroke in 1996, with a rate of 66 per 100,000 males and 58 per 100,000 females.
- Death rates for stroke do not vary markedly across urban, rural and remote areas. Mortality due to stroke has fallen at a similar rate in all areas during the past few decades.
- Australia has one of the lowest rates of stroke-related deaths among OECD countries.

### Vascular disease

#### Hospitalisation

- The rate of hospitalisation for amputation due to peripheral vascular disease has increased over the period 1993–1997.
- In 1996–97, the age-standardised hospital separation rate for major amputation for peripheral vascular disease was 3.6 per 100,000 males aged 0–79 and 1.2 per 100,000 females of that age.
- There was little change in hospital separation rates for surgery for abdominal aortic aneurysm between 1993 and 1997.
- Males and females aged 0–79 were hospitalised for surgery for abdominal aortic aneurysm at an age-standardised rate of 19.5 and 3.7 per 100,000 population, respectively, during 1996–97.

**Table 2.3: Summary of trends of selected indicators**

<b>Favourable trend</b>	Smoking rates in adults Blood pressure levels Contribution of saturated fat to total energy intake Coronary heart disease death rates Stroke death rates
<b>Little or no change</b>	Smoking rates in adolescents Participation in physical activity
<b>Unfavourable trend</b>	Prevalence of overweight or obesity
<b>Insufficient data</b>	Cholesterol levels Incidence of heart attack or stroke Disability rates
<b>No national data</b>	Time to hospital from symptom onset Use of rehabilitation programs Angioplasty or bypass surgery outcomes Case fatality rates