

6 Special populations

This chapter examines the higher mortality and disease burden from heart, stroke and vascular disease among Indigenous Australians, in remote areas of the country and among socio-economically disadvantaged groups, and outlines the kinds of measures that will be required to lessen inequalities in cardiovascular health. There is considerable overlap between these groups, and they share some of the factors that contribute to higher risk, such as higher rates of smoking. Reduced access to prevention programs, and use of treatment services that is not as high as it should be given the level of disease, are other determinants of health. It is particularly important to tackle the underlying causes of inequalities in health, through intersectoral action and changes in public policy.

6.1 Indigenous populations

Mortality

Heart, stroke and vascular disease is the biggest single cause of excess deaths in Indigenous Australians (Ring & Firman 1998). In Australia, mortality from heart, stroke and vascular disease is higher in Indigenous people than in non-Indigenous people (Table 6.1). Mortality from stroke in the Indigenous population is about double that in the non-Indigenous population, with males at greater risk than females. The most striking difference is in mortality from rheumatic heart disease.

Table 6.1: Death rates and rate ratios, by Indigenous status, selected heart, stroke and vascular disease, 1994–1996

Disease	Males			Females		
	Indigenous	Non-Indigenous	Rate ratio	Indigenous	Non-Indigenous	Rate ratio
Coronary heart disease	315.0	196.4	1.6	182.9	112.5	1.6
Stroke	157.2	65.2	2.4	135.4	62.9	2.2
Rheumatic heart disease	15.0	1.2	12.5	17.2	2.1	8.2
Circulatory system diseases	625.0	322.2	1.9	437.4	223.9	1.9

Notes: Rate ratio = Indigenous:non-Indigenous rate.

The rates, given as per 100,000 persons, are based on data from Western Australia, South Australia and the Northern Territory, age standardised to the 1991 population.

Source: Mathur & Gajanayake (1998).

Coronary heart disease is the major cardiovascular cause of death for Indigenous people, representing 55 per cent of deaths among males and 41 per cent among females in 1994–1996. Among Indigenous females, death rates for heart, stroke and vascular diseases have been declining, while among Indigenous males no change in death rates has been noted in the last five years (Mathur & Gajanayake 1998).

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Comparison with other Indigenous populations

Current levels of coronary heart disease and stroke in the Indigenous population in Australia are substantially higher than those for the Indigenous populations of New Zealand and the United States. During 1990–1994 the mortality rate from coronary heart disease among the Australian Indigenous population was 33 per cent higher than the corresponding rate for Maoris. Mortality rates for stroke and hypertension were two to six times higher than those for the other Indigenous populations (Ring & Firman 1998).

In the early 1970s, rates of stroke in Maoris were comparable with those of Indigenous Australians, while their rates of coronary heart disease were higher. In Maoris, both rates fell rapidly over the next 20 years. While it is recognised that the factors having an impact on the health of Indigenous peoples vary between countries, these findings suggest that if suitable preventive and therapeutic measures were taken, mortality from heart, stroke and vascular disease among the Australian Indigenous population could fall rapidly over the next several decades (Ring & Firman 1998).

Prevalence of risk factors in the Indigenous population

Several behavioural risk factors for heart, stroke and vascular disease are known to be more prevalent among Indigenous Australians than among their non-Indigenous counterparts. The risk factors compared here include smoking, alcohol use, obesity, diabetes and physical inactivity among persons aged 18 years or above (Table 6.2). National data are not available for the Indigenous population for high blood pressure or high blood cholesterol.

Table 6.2: Prevalence of risk factors for the Indigenous and non-Indigenous populations, 18+ years

Risk factor	Indigenous (%)	Non-Indigenous (%)	Rate ratio
Current smokers	51	23	2.2
High-risk alcohol use*	21	8	2.6
Obesity**	28	18	1.6
Diabetes	5.1	2.2	2.3
No physical activity#	40	34	1.3

* Proportion among those who reported any recent alcohol use.

** Based on measured height and weight, age standardised to the 1991 Australian population. The comparison is for Indigenous and all Australians.

Rates for current smokers, high-risk alcohol use, diabetes and no physical activity have not been age standardised due to insufficient sample size.

Relates to leisure time physical activity.

Note: Rate ratio = Indigenous:non-Indigenous rate.

Sources: ABS (1999); Cunningham & Mackerras (1998); AIHW analysis of 1994 NATSIS (ABS 1996) and 1995 NHS (ABS 1997c).

Smoking

Among Indigenous Australians, the rate of smoking is twice that in the general population. The National Health Survey has found that among Indigenous people 18 years and over, 56 per cent of males and 46 per cent of females are smokers — this is about twice the proportion found in the non-Indigenous population (ABS 1996). There are consistent reports that, in the Northern Territory, the pattern of tobacco consumption among Indigenous Australians tends to be heavy. According to one study, 30–50 per cent of young males in some Aboriginal communities report smoking over 25 cigarettes per day (Burns et al 1995) compared with 11 per cent of all similarly aged Australian males.

In urban areas, Indigenous people underestimate the risks associated with smoking, and are less likely to give up or reduce their tobacco intake than are non-Indigenous people (DHFS 1996). In a rural community studied by Hogg (1994), Indigenous people were more likely to be current smokers than were the general population living in capital cities. In Western Australia and the Northern Territory, rates of hospital admissions and deaths from tobacco-related conditions have been found to be much higher among Indigenous people than non-Indigenous people (Unwin et al 1994; 1995; Plant et al 1995; Cunningham & Condon 1996).

Alcohol

The proportion of Indigenous Australians who consume alcohol is lower compared with non-Indigenous people. However, it has been found that Indigenous people who drink are more likely to consume harmful quantities of alcohol than the general population (ABS & AIHW 1997; Hunter et al 1991; Hogg 1994).

Obesity

There is little difference in the proportion of overweight or obese people among Indigenous Australians (61 per cent) and all Australians (56 per cent). However, obesity itself is more common among Indigenous Australians (28 per cent) than all Australians (18 per cent) (see Table 6.2). Thirty per cent of Indigenous women are obese compared with 18 per cent of Australian women. Comparable figures for men are 25 per cent and 18 per cent.

Diabetes

According to the 1995 National Health Survey, Indigenous Australians have over twice the prevalence of diabetes of non-Indigenous Australians (Table 6.2). Other studies show similar results. During 1992–1994, mortality from diabetes among Indigenous people was estimated to be 15 times higher than that among their non-Indigenous counterparts (Anderson et al 1996). Available data suggest that the overall prevalence of diabetes among Indigenous adults is between 10 per cent and 30 per cent, at least two to four times that of the non-Indigenous population (de Courten et al 1998). A recent study of Indigenous children and adolescents has documented a high prevalence of Type 2 diabetes (2.7 per cent), and of risk factors for Type 2 diabetes and heart, stroke and vascular disease (Braun et al 1996). Pooled data from south-eastern and central Australian Indigenous people aged 20–49 years showed a 12 per cent prevalence of Type 2 diabetes, compared with 1 per cent in a Victorian country town sample of non-Indigenous people in the same age range (Guest & O'Dea 1992).

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Physical inactivity

Indigenous people are more likely than non-Indigenous to report no physical activity in their leisure time. In 1995, 40 per cent of Indigenous Australians reported no physical activity for sport, recreation or exercise, compared to 34 per cent of the non-Indigenous population. Indigenous women of all ages are more likely than their non-Indigenous counterparts to be physically inactive. For men, this is only true for 18–44 year olds.

High blood pressure

While there are no national data on the prevalence of high blood pressure in Indigenous populations, data from the Kimberley region suggest that high blood pressure is two to three times more prevalent among Indigenous Australians than among non-Indigenous Australians (Smith et al 1992a). In the same group of Indigenous people, drinking and obesity were associated with high blood pressure. There was also a positive association between high blood pressure and cholesterol level, independent of the relationship of cholesterol with age and body mass index (BMI) (Smith et al 1992b).

Admissions to hospital and rates of heart, stroke and vascular disease procedures

Table 6.3 presents hospital separation rates for heart, stroke and vascular disease by Indigenous status in 1996–97, showing that, overall, Indigenous Australians are admitted to hospital at a substantially higher rate than the non-Indigenous population, particularly in rural and remote areas.

Table 6.3: Hospital separation rates for diseases and disorders of the circulatory system, by Indigenous status, 1996–97

Population group	Urban	Rural	Remote	Total
Indigenous	2,000	3,100	2,700	2,600
Non-Indigenous	1,600	1,700	1,400	1,700
Rate ratio	1.2	1.8	2.0	1.5

Notes: Does not include stroke.

Rates, age standardised to the 1991 Australian population, are given per 100,000 population.

Excludes Tasmania.

Rate ratio = Indigenous:non-Indigenous rate.

Source: AIHW National Hospital Morbidity Database (unpublished data).

Data from the AIHW hospital morbidity database⁸ suggest that the rates of surgical and investigative procedures may be lower among the Indigenous than among the non-Indigenous population

National targets

A range of targets and indicators has been approved by AHMAC to monitor the performance of governments in improving the health of Indigenous Australians. The National Health Information Management Group will oversee the collection

⁸ Data from South Australia, Western Australia and the Northern Territory for procedures, separations and uptake of treatment where the principal diagnosis was cardiovascular disease.

and publication of a national report against the indicators. OATSIH, in consultation with the Aboriginal Health Units will produce an analysis of the report which will be used for development of national policy and setting of priorities on Indigenous health.

The following targets are relevant to cardiovascular health:

- reduce mortality from coronary heart disease by 50 per cent by 2008;
- reduce mortality from rheumatic heart disease by 50 per cent by 2008;
- reduce mortality from diabetes by 20 per cent by 2008;
- reduce prevalence of smoking by 25 per cent by 2008; and
- reduce prevalence of overweight and obesity in the 25–64 year age group by 15 per cent by 2008.

Indigenous people — issues for health services

Poverty, lower education levels and cultural and racial barriers are the major issues that affect Indigenous Australians. The standard of facilities in Indigenous communities continues to be unacceptably low.

These conditions make access to mainstream prevention and treatment services difficult for Indigenous people. In remote areas, these difficulties are exacerbated by problems caused by distance. In addition, current models of funding and delivery of services do not reflect the increased needs of Indigenous populations. The principles of self determination in health care, embodied in the WHO Alma Ata declaration of 1978, are critical to improvements in Indigenous health.

Some of the health service issues and strategies to address them are discussed below.

Primary prevention and primary health care

The following issues regarding essential services and primary prevention apply to urban, rural and remote Indigenous populations, and more generally to remote populations. The strategies necessary to achieve goals in Indigenous health comply with those used in the health promotion framework discussed in Section 3.1.

Community activities that aim to deal with the underlying causes of ill health should be developed. Consistent with principles of self determination, communities should determine their own priorities and have opportunities to provide input regarding health care needs and to contribute to the development of policy which affects their health care. Comprehensive primary prevention programs should include the following.

- Assessment of risk factors with appropriate follow-up integrated into primary health care.
- Information and recall systems, including reminder and recall systems for opportunistic screening and interventions, and the generation and maintenance of registers. There should be performance indicators for agreed health service activities, and standard protocols for treatment of sore throat, rheumatic heart disease, coronary heart disease (including emergency management), diabetes and high blood pressure.

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- Sufficient well trained staff — comprehensive staff education should incorporate protocols, including regular updating of skills in cardiopulmonary resuscitation and locally appropriate cultural orientation.
- Adequate infrastructure including housing for staff and clinic facilities.
- Functional transport to allow people access to appropriate health care when needed.

Other issues specific to Indigenous populations include problems of access (discussed below) and the need to ensure that staff have the necessary cross-cultural skills to work effectively with Indigenous people. Another concern is the proliferation of vertical health-related programs from a variety of organisations, with little implementation or integration. There is a need for coordinated primary health care activity, and partnerships with Aboriginal Community Controlled Health Services, the National Aboriginal Community Controlled Health Organisation, and relevant government health services.

Priorities for prevention of coronary heart disease in the Indigenous population include:

- nutrition programs that include improved access to good quality affordable fresh fruit and vegetables in remote communities (Zatonski et al 1998; Leonard et al 1995; Lee et al 1994);
- reducing the prevalence of tobacco smoking, through a strategic multisectoral approach which addresses issues such as heavy patterns of consumption and the social and ceremonial significance of tobacco in traditionally oriented Indigenous communities (DHFS 1996);
- increasing physical activity;
- reducing the prevalence of harmful and hazardous consumption of alcohol; and
- improving maternal and child health.

Access

Health services should be designed to minimise barriers to health care. The employment of Indigenous staff and having an environment that is 'culturally appropriate' and friendly, have been demonstrated to improve attendance (Inala Community Health Service 1997).

The Commonwealth Remote Communities Initiative introduced in 1997–98 aims to improve access to primary health care services in about 35 remote Indigenous communities that currently have little or no access to such services. Joint planning has been undertaken to identify those communities in greatest need.

There should be further research into barriers hindering access to health services by Indigenous people, and the development of orientation programs for staff that include relevant cultural and historical issues as well as health issues. Hospital services need to work closely with primary health care services to ensure that staff practices and systems accommodate and support the needs of Indigenous people and maximise continuity of care. This is particularly important in coordinating specialist visits and ensuring suitable reception, transport and accommodation is available to those in remote areas who need specialist care.

Secondary prevention

As discussed in Chapter 4, secondary prevention in people with established heart, stroke and vascular disease has been shown to significantly reduce the risk of further events. Effective secondary prevention includes treatment with drugs such as aspirin, beta blockers and ACE inhibitors, rehabilitation and continuing attention to reducing levels of risk factors. It is important that Indigenous communities and health services are involved in the development of secondary prevention and rehabilitation programs.

Information issues

The major information issues in Indigenous populations also generally apply to remote areas and include the following:

- community-based primary management of chronic disease (including heart, stroke and vascular disease, rheumatic heart disease, diabetes, renal disease, respiratory disease) is complex and may involve many care providers;
- in remote settings, the turnover of staff is high, and training of staff and levels of clinical competency are variable;
- standard evidence-based treatment protocols improve continuity of management in these settings;
- these protocols can be incorporated into information systems which could be used by all health workers for opportunistic screening, recall and review, including the generation of registers and reports; and
- such systems already exist in some health services, and should be introduced (with adequate training and support) into all primary health care clinics in remote communities.

Funding for health services

Currently, the total per capita health spending for Indigenous people is about 8 per cent higher than that for non-Indigenous people (Deeble et al 1998), with 55 per cent of spending occurring in the hospital sector. Despite the fact that primary prevention and appropriate public health care have the potential for the greatest gains in cardiovascular health in Indigenous people, current prevention and public health care programs are fragmented and under-resourced.

Current health spending would be adequate if the Indigenous population was only 8 per cent sicker than the total population. Most measures, however, show that the Indigenous population has a level of health two to three times worse than that of the total population (ABS & AIHW 1997). Existing funds cannot adequately address the current burden of illness, let alone provide the preventive and other services required to break the cycle.

The National Aboriginal Health Strategy set a target of achieving 'equal access to care appropriate to need'. Nevertheless, current funding mechanisms do not recognise the lack of access to MBS and PBS by a population with such high morbidity and mortality (Burns et al 1998). The situation in remote areas is complicated by the fact that the mechanisms do not take into account the extra expense involved in the delivery of services in a multidisciplinary, cross-cultural, remote situation and the relative lack of infrastructure in these areas (Burns et al 1998). It has been

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suggested that to achieve equity according to need, per capita expenditure for Indigenous primary health care needs to be two to three times higher than the per capita expenditure in the mainstream (McDermott 1995; Burns et al 1998).

OATSIH is currently working with the Health Benefits Division to develop a broader approach to health financing structures for the Indigenous population. The Coordinated Care Model for delivery and funding of services is currently being evaluated through trials in New South Wales, Western Australia and the Northern Territory. These trials represent a unique partnership between Commonwealth Government and State and Territory Governments and local Aboriginal communities in relation to:

- funding issues (eg Medicare block funding in areas where there is little access);
- management of resources and control of the service by the community, including the development of effective health promotion programs (eg Tiwi for Life campaign);
- development of specific care plans drawing on a range of professional expertise; and
- evaluation of the program to include installation of a data collection system to assess the impact of the trial on the quality of the service delivered, on health outcomes and on acceptability.

While Medicare block funding will provide additional support for Indigenous health funding, it is unlikely to be sufficient unless the amounts reflect the health needs of Indigenous people, as discussed above. Nevertheless, the trials are likely to provide important information to improve aspects of continuity of care such as lack of coordination and integration of resources in the community, and the lack of integration of hospital and specialist services with community services. The Coordinated Care Model is a potential structure to address health service issues in a systematic manner. However, it should not be seen as the only effective model for funding or delivery of services, as many Aboriginal health services have been developing exemplary models over many years.

Rheumatic heart disease

Most rheumatic heart valve lesions result from repeated, prolonged episodes of acute rheumatic fever associated with Group A streptococcal infections in childhood and adolescence. Rheumatic heart disease is a disease of disadvantage associated with poverty and overcrowding, lack of education and limited access to medical care to obtain adequate diagnosis and receive secondary prophylaxis with monthly injections of Benzathine penicillin. Rheumatic heart disease represents a significant and entirely preventable cause of morbidity and mortality among Indigenous Australians (Carapetis et al 1996). In Australia, it almost exclusively affects Aboriginal and Torres Strait Islander peoples.

It has been difficult to document the size of the problem of acute rheumatic fever and rheumatic heart disease in the Indigenous population because most studies have been hospital-based or restricted to small communities in diverse remote locations. Aggregated data from Western Australia, South Australia and the Northern Territory for the years 1994–1996 reveal very large differences in mortality rates for rheumatic heart disease between the Indigenous and non-Indigenous populations (see Table 6.1 on page 95). The recent study by Carapetis (1998) in the

Northern Territory was the first regionally based study of the epidemiology, clinical characteristics and control of acute rheumatic fever and rheumatic heart disease in Australia that provides a model for investigating the problem in other regions, and in urban, rural and remote Indigenous populations.

Training in treatment and prevention of acute rheumatic fever and rheumatic heart disease for Indigenous health workers in remote and rural sectors has taken place under the Commonwealth Rural Health Education, Support and Training program.

Primary prevention of rheumatic heart disease

Primary prevention of rheumatic heart disease requires a concerted, ongoing intersectoral effort by all levels of government and researchers to prevent acute rheumatic fever. This should:

- address socio-economic issues including overcrowding, housing and hygiene;
- develop a better understanding of the epidemiology of Group A streptococci;
- develop, organise and evaluate programs of treatment for streptococcal sore throat and scabies and skin sores; and
- work towards the development of a vaccine for acute rheumatic fever.

The control of rheumatic fever is also dependent on sufficient access to treatment for scabies, and chemoprophylactic medication. Population control measures will need a re-evaluation of PBS access schemes as the current system does not recognise public health control needs. The Australian Pharmaceutical Advisory Committee has endorsed a proposal for a Public Health Drugs list.

Secondary prevention of rheumatic heart disease

The WHO recommends best practice that involves implementation of a coordinated, register-based control program including:

- a program coordinator, dedicated budget and expert advisory committee;
- an ultimate goal of national coverage through step-wise coverage of smaller regions (eg using the Northern Territory program to control acute rheumatic fever and rheumatic heart disease as a template); and
- establishment of primary health care service-oriented programs that include: a centralised register of all patients; case finding of those with acute rheumatic fever and rheumatic heart disease and coordination of secondary prophylaxis and clinical follow-up (including surgery); surveillance for new cases of acute rheumatic fever, rheumatic heart disease and group A streptococcal epidemiology; integration of these services into the existing primary care network; and adequate laboratory support.

A Commonwealth funded program, developed by Territory Health Services, researchers and the NHF, has a database with information on those with rheumatic heart disease and acute rheumatic fever, and focuses on secondary prevention, particularly compliance with long-term prophylactic medication, as well as access to the program.

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Key points — Indigenous Australians

- Heart, stroke and vascular disease is the biggest single cause of excess deaths in Indigenous Australians.
- Death rates for coronary heart disease for the Indigenous population are almost twice as high as the non-Indigenous rate and substantially higher than the corresponding rates for the Indigenous populations of New Zealand and the United States.
- The rapid reduction in heart, stroke and vascular disease mortality in New Zealand Maoris in the early 1970s, from rates comparable with those of the Australian Indigenous population, suggest that similar declines ought to be possible in Australia.
- Levels of the major risk factors such as smoking, high-risk alcohol use and diabetes are over twice as high among Indigenous Australians as among their non-Indigenous counterparts.
- Despite the higher levels of mortality and morbidity in the Indigenous population:
 - programs for prevention are fragmented and there are no clearly identified sources of funding for such programs at an appropriate scale; and
 - in total, efforts currently under way are insufficient to allow a real prospect of achieving the nationally agreed 10-year target of a 50 per cent reduction in mortality from coronary heart disease or of achieving the related targets for risk factors.
- While there will be gains from improved access to treatment, there is even greater potential for gain from improved primary and secondary prevention. These services should not be seen as competitive and all need to be adequately funded under a balanced and comprehensive approach.
- Rheumatic heart disease represents a significant and entirely preventable cause of morbidity and mortality among Indigenous Australians. Organised primary health care is essential for the control of rheumatic fever.
- There is a need for a national training program to ensure adequate levels of skilled Indigenous health staff.

6.2 Remote populations

In terms of cardiovascular health, the major issues for remote populations are about access to services rather than health differentials. Mortality from heart, stroke and vascular disease, other than rheumatic heart disease, is marginally higher in remote than in urban areas (Table 6.4). However, in remote areas, mortality from rheumatic heart disease is almost three times that in urban areas. In remote areas where the Indigenous population makes up a higher proportion of the population than in urban or rural areas, high Indigenous mortality contributes significantly to the higher mortality (Figure 6.1).

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Table 6.4: Death rates and rate ratios, by type of area, selected heart, stroke and vascular diseases, 1994–1996

Disease	Males			Females		
	Urban	Remote area	Rate ratio	Urban	Remote area	Rate ratio
Coronary heart disease	198.2	215.2	1.1	109.1	118.2	1.1
Stroke	67.6	70.2	1.0	59.8	62.4	1.0
Rheumatic heart disease	1.4	3.8	2.8	2.0	4.9	2.4
Circulatory system diseases	330.7	359.5	1.1	216.8	236.7	1.1

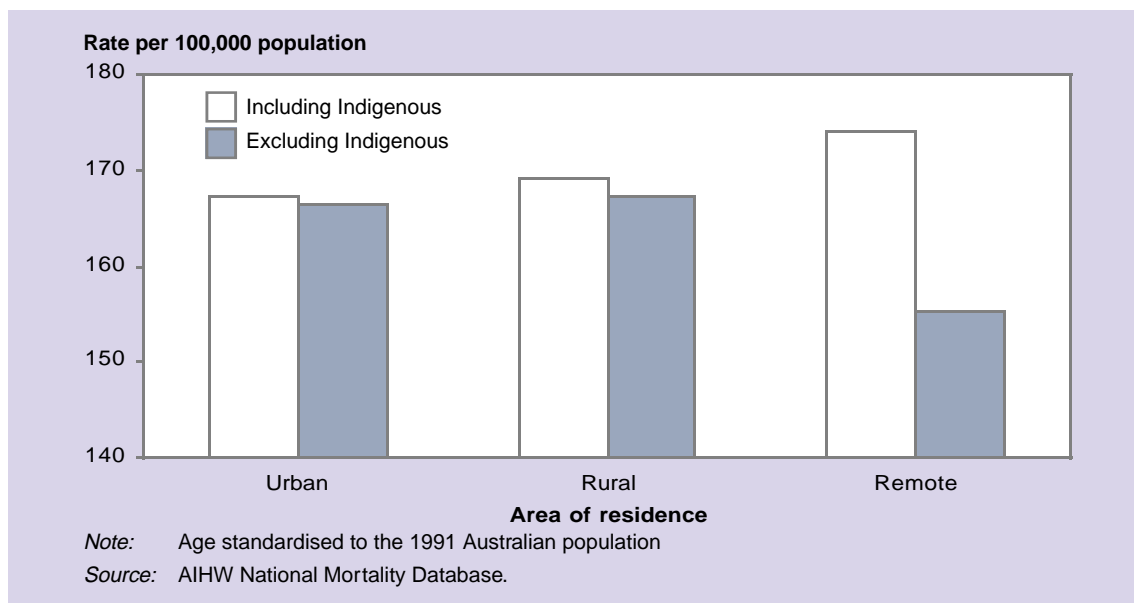
Note: Rate ratio = remote:urban rate.

Rates, given as per 100,000 population, are age standardised to the 1991 Australian population.

Source: Mathur & Gajanayake (1998).

The situation in Queensland is somewhat different from the Australian average. For heart, stroke and vascular disease in total, and for coronary heart disease, stroke and hypertension separately, mortality rates in remote areas are generally substantially above both capital city and rural rates. These differences in Queensland persist, although at a substantially reduced level, even after allowing for the effects of a high Indigenous population (Muller et al 1998).

Figure 6.1: Death rates for coronary heart disease, by area of residence, Western Australia, South Australia and the Northern Territory, 1991–1995



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Prevalence of risk factors in remote populations

There is little difference in the prevalence of risk factors between remote and urban areas, when differences in age profiles are taken into account (Table 6.5).

Table 6.5: Prevalence of risk factors by area of residence,* Australia, 1995

Risk factor	Prevalence rate (%)			Rate ratios	
	Urban	Rural	Remote	Rural:urban	Remote:urban
Smoker	24	26	24	1.1	1.0
Never smoked	50	46	47	0.9	0.9
Overweight or obese	43	44	48	1.0	1.1
No physical activity	34	32	36	0.9	1.1
Diabetes	2	2	2	1.0	1.0
Medium-risk alcohol intake	5	6	5	1.2	1.0
High-risk alcohol intake	3	4	4	1.3	1.3

* The Australian Capital Territory and Brisbane are treated as urban; the Northern Territory is treated as rural; other Queensland metropolitan/rural centres are treated as rural. Based on self reports except for diabetes, which is a derived measure.

Note: Age standardised to the 1991 Australian population.

Source: 1995 National Health Survey (ABS 1997c).

Admissions to hospital and rates for heart, stroke and vascular disease procedures

Hospital separation rates for coronary heart disease and stroke are higher in remote than in urban areas except for coronary heart disease in males (Table 6.6).

Table 6.6: Hospital separation rates and rate ratios, by type of area, coronary heart disease and stroke, 1996–97

Disease	Males			Females		
	Urban	Remote area	Rate ratio	Urban	Remote area	Rate ratio
Coronary heart disease	1,110	1,100	1.0	490	670	1.4
Stroke	300	420	1.4	200	320	1.6

Notes: Rates, age standardised to the 1991 Australian population, are given as per 100,000 population.

Rate ratio = remote:urban rate.

Source: AIHW National Hospital Morbidity Database (unpublished data).

Remote populations — issues for health services

The issues relating to essential services outlined for Indigenous populations are also relevant for remote populations.

Central to the concept of effective health services in remote areas is support for and building of the components of sustainable communities, health service structures and health service providers.

This process must involve close collaboration between providers of health services and providers of other services in remote communities.

Workforce and management

There must be adequate funding and support for:

- sustainable structures for health services such as locally based services and a decentralised model of management;
- providers of health services, including support for relocation and retention of staff and access to ongoing education and locum relief; and
- sustainable access by remote communities to health services, including support for bringing services to communities and allowing community members to travel to services.

Collaborative projects to improve knowledge and skills in emergency treatment and transfer of patients suffering from a cardiovascular event could lead to increases in the survival rates of cardiovascular patients in rural and remote areas. The Flying Doctor remains an integral part of the health care infrastructure available to remote communities.

The Commonwealth Rural Australian Stroke Pilot Study will examine a rural population to determine the incidence, outcome, direct and indirect costs of stroke. The results will be compared with a similar study in a metropolitan population in order to develop both a model for the establishment of sustainable medical research capability in rural areas, and to establish comprehensive regional stroke services for the rural, remote and Indigenous populations of New South Wales.

Primary prevention

Priorities for primary prevention of heart, stroke and vascular disease in remote areas are nutrition, tobacco smoking and physical activity. To address these priority areas:

- it should be recognised that access to affordable fresh fruit and vegetables is central to primary prevention of heart, stroke and vascular disease (Zatonski et al 1998);
- programs on smoking should target both cessation and prevention of uptake, particularly among the young;
- ongoing support for physical activity should be considered a high priority, with support for a coordinated strategy for involvement of the community in sport; and
- primary health care teams in remote areas should be able to devote sufficient resources to both their clinical and public health components.

Management and secondary prevention

All members of communities should have access to appropriate training in recognition of symptoms and management of emergencies, including first aid and community and emergency life support for health workers.

Optimum practice for diagnosis and management of heart, stroke and vascular disease in remote areas involves an emphasis on coordination of treatment of co-existing conditions by primary health care teams.

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The management of chronic heart, stroke and vascular disease requires the appropriate use of health and medical services including pharmaceutical agents. It also requires access either locally by outreach services or by travel to appropriate specialist services.

Rehabilitation services should, as far as possible, be provided locally. This would have the additional benefit of rehabilitation programs becoming a local focus in education for primary prevention. A cardiovascular rehabilitation manual has been developed for rural health workers in Queensland to assist people who cannot access mainstream rehabilitation services.

Funding issues

Many of the issues regarding funding discussed for Indigenous programs also apply generally to remote areas. Costs of delivery of prevention and primary health care programs in remote areas are two to three times those for urban areas (Burns et al 1998; McDermott 1995).

It is important to develop methods of organisation and funding that strengthen the capacity of clinical services to contribute to early identification and intervention in a wide range of health issues. New funding mechanisms should foster collaboration between public health and clinical services and, where appropriate, facilitate the transfer of resources between clinical services or between public health and clinical services in ways that do not disrupt service delivery.

Key points — Populations in remote areas

- Mortality from heart, stroke and vascular disease is marginally higher in remote areas than in urban areas, particularly in Queensland.
- The prevalence of risk factors is not significantly different in remote areas than in urban areas. However, the cost, quality and accessibility of food supply in remote areas is a major issue.
- Access to health services is a problem for all people living in remote areas. Distance is a major factor, with poor roads and unreliable communication systems contributing to the isolation.
- The difficulties of recruitment and retention of health professionals in remote areas are generally appreciated. The problems of professional and geographical isolation, continuing education and overwork, accommodation and transport are all issues that have an impact on staff and ultimately on delivery of services.
- There should be a strategic and coordinated approach to the development and implementation of prevention programs and primary health care in remote areas, with sufficient funds allocated for this purpose. All programs must be appropriate to local needs and conditions.

6.3 Socio-economically disadvantaged people

In Australia, as in other developed countries, socio-economically disadvantaged people are at greater risk of heart, stroke and vascular disease. The relationship has been documented for mortality from coronary heart disease and stroke, and for related illness and risk factors (Dobson et al 1985; National Health Strategy 1992; Mathers 1994; Bennett 1995; 1996). Within developed countries, the pattern of higher rates of illness and death among socio-economically disadvantaged people holds for most diseases, not only heart, stroke and vascular disease (Marmot et al 1987; Feinstein 1993; Kaplan & Keil 1993). As discussed in Chapter 3, the evidence suggests the contribution of structural factors such as people's economic resources, education, living and working conditions, social support and access to health care in addition to behavioural risk factors (National Health Strategy 1992).

Socio-economic disadvantage and mortality from heart, stroke and vascular disease

In Australia, socio-economic inequalities existed at the time mortality from heart, stroke and vascular disease peaked during the late 1960s. There is evidence for males that socio-economic inequalities widened during the 1970s (Gibberd et al 1984; Dobson et al 1985; Hardes et al 1985), continued to widen during the early 1980s, stabilised thereafter and persisted into the 1990s (Bennett 1996).

Mortality rates for coronary heart disease and stroke are especially high among people of working age living in the most socio-economically disadvantaged areas (lowest quintile). Their cardiovascular death rates are around double those among people living in the least socio-economically disadvantaged areas (highest quintile) (Table 6.7). There is a clear and consistent gradient of increasing standardised death rates with increasing socio-economic disadvantage.

Table 6.7: Death rates for heart, stroke and vascular diseases, by socio-economic status of area of residence, ages 25–64, 1991

Disease	Males			Females		
	Low SES	High SES	Rate ratio	Low SES	High SES	Rate ratio
Coronary heart disease	107.5	60.9	1.8	31.3	14.0	2.2
Stroke	22.0	8.5	2.6	13.8	7.3	1.9
Heart, stroke and vascular disease	155.7	84.9	1.8	56.7	27.7	2.1

Notes: Estimates, given as per 100,000 population, are age standardised to the 1991 Australian population and are defined by quintiles of socio-economic disadvantage according to the Index of Relative Socio-economic Disadvantage for the area of their usual residence.

Rate ratio = Low SES:high SES rate.

Source: AIHW National Mortality Database.

Socio-economic disadvantage and risk factors

Risk factors which are known to increase the risk of developing heart, stroke and vascular disease are far more prevalent in people of low socio-economic status than those of high socio-economic status (Mathers 1994; Bennett 1995; 1996).

Special populations

Smoking is strongly influenced by the social circumstances in which people live, and is more common among people in unskilled occupations, unemployed people, Indigenous people, young adults with children and lone parents. Smoking is almost twice as common among people in disadvantaged circumstances (Table 6.8). Excessive drinking, physical inactivity, obesity and high blood pressure are also more prevalent in low than in high socio-economic groups (Table 6.8).

Table 6.8: Prevalence of risk factors for heart, stroke and vascular disease, by socio-economic status (SES), 1995

Risk factor	Males			Females		
	Low SES (%)	High SES (%)	Rate ratio	Low SES (%)	High SES (%)	Rate ratio
Hypertension	19.0	14.4	1.3	14.5	7.2	2.0
High cholesterol	20.4	19.2	1.1	18.9	13.9	1.4
Overweight (BMI > 25)	49.8	50.3	1.0	40.2	31.4	1.3
Obese (BMI > 30)	14.2	9.5	1.5	15.5	8.5	1.8
Smoking	35.9	18.5	1.9	27.5	15.1	1.8
At-risk alcohol intake	6.3	3.7	1.7	1.5	1.3	1.2
Physical inactivity	37.0	27.0	1.4	39.3	29.1	1.4

Notes: Estimates for high blood pressure and high cholesterol relate to people aged 25–64, living in State capital cities, 1989, with SES based on highest level of education completed. Estimates for other risk factors are national estimates based on self-reported data from people aged 18 or more, 1995, with SES based on socio-economic disadvantage of area of residence.

Rate ratio = Low SES:high SES rate.

BMI = body mass index.

Sources: National Health Survey 1995 and NHF Risk factor Prevalence Survey 1989, derived data.

Socio-economic inequalities in risk factors vary by age group as well as by sex, and also vary over time. During the 1980s, people who were socio-economically disadvantaged improved their cardiovascular risk factor profile overall but their relatively worse position compared with people of higher socio-economic status persists (Bennett 1996).

Tackling socio-economic inequalities in health

Socio-economic inequalities in the health of Australians have been demonstrated repeatedly over recent decades for most diseases. The international evidence for socio-economic inequalities in health status and health outcomes is also substantial.

Although the causes of inequalities in health are complex and not fully understood, it is clear that a combination of factors is at work (National Health Strategy 1992). Differences in risk behaviours make an important contribution to socio-economic inequalities in health, but they are not believed to be a complete explanation (Blaxter 1990). For future interventions to be fully effective in improving the nation's health, it will be important to recognise that risk factors themselves are strongly influenced by the circumstances in which people live and work (Link & Phelan 1995).

Socio-economically disadvantaged people

Factors that are increasingly recognised to be of importance include:

- the physical environment, such as the adequacy of housing, working conditions and pollution;
- social and economic influences such as income and wealth, levels of unemployment, and the quality of social relationships and social support;
- barriers to adopting a healthier personal lifestyle; and
- access to appropriate, effective health and social services (Benzeval et al 1995).

Clearly, tackling the underlying socio-economic causes of inequalities in health involves changes through public policy and intersectoral action, as discussed in the health promotion framework in Section 3.1. Health inequality considerations need to be integrated into all policy decisions, regardless of sector.

The last major review of health inequalities in Australia concluded that 'reducing inequalities is a daunting task', and saw that the way forward was to 'develop and implement policies to reform the health system and the broader social and economic environment in which we live' (National Health Strategy 1992).

The Commonwealth is funding a National Collaboration on Health and Socio-economic Status which will address many of these issues.

Key points — Socio-economically disadvantaged people

- There is a strong relationship between socio-economic disadvantage and death, sickness and disability from coronary heart disease, stroke and many other diseases.
- The poor in society shoulder a greater burden of illness, disability, distress and death from heart, stroke and vascular disease, and many other diseases, than those who are more affluent.
- The magnitude of health inequalities varies over time and between countries, suggesting that they are not inevitable or unchangeable.
- Health inequalities are caused by the interplay of risk factors and social and economic circumstances.
- Policy initiatives to address health inequalities will require coordination across sectors of government, and the health sector has an important advocacy role.
- Policy initiatives are needed that:
 - improve living and working conditions;
 - reduce poverty and unemployment;
 - change peoples attitudes and behaviours, through sensitive interventions that combine education and support with action at other policy levels; and
 - facilitate access to health and social services according to need.
- A key aim of public policy in the next millennium should be to design cross-sectoral interventions that improve the health of the socio-economically disadvantaged and reduce the socio-economic gap in health status.
- Government policy initiatives at all levels need to be examined for their likely impact on the health of the socio-economically disadvantaged.

