Population groups living in rural and remote zones have unique health concerns that relate directly to their living conditions, social isolation and distance from health services. In particular, Indigenous Australians and aged people have special health concerns. Issues that concern these groups include adequate provision of health services, occupational health and injury prevention, and access to health care information.

Chapters 2 to 5 illustrate some of the health disadvantages experienced by people living in rural and remote zones. This chapter will review some of the issues identified in these chapters. Some of these issues are well recognised and are the focus of established public health activity. Others are not currently the focus of public health activity but are emerging as targets for future intervention in rural and remote zones.

Men's health

On average, males in developed countries do not live as long as females and have higher mortality rates for most causes of death (Mathers 1994). However, many studies in developed countries report that males use health services at a lower rate and report less illness than females. This apparent contradiction may be explained by the finding that females have higher rates of acute illnesses and of many non-fatal chronic conditions but males have higher prevalence rates of the leading fatal conditions (i.e. coronary heart disease) (Mathers 1994). Males have poorer health-related behaviours than females and engage in risk-taking behaviours to a greater extent. Reckless driving, smoking and high alcohol consumption are risk-taking behaviours that are more prevalent among males.

The health of males living in rural and remote Australia is comparatively worse than for those living in metropolitan Australia. This health differential is notable for several causes of death and hospitalisation, specifically injury, homicide and interpersonal violence, and diabetes. Several different factors may contribute to this lower health status. Males in rural and remote zones have fewer positive health-related behaviours than their female counterparts. For example, the GP consultation rate among males declines almost linearly from 'capital cities' to 'other remote areas' with males in the remote zone visiting their GPs 35% less often than females in the remote zone. Lower access to health services in rural and remote zones may influence the use of these services. Also, many rural residents accept injury and illness as part of normal life and this attitude can lead many not to seek help for chronic conditions (Humphreys et al. 1996). Injury, in particular transport-related accidents, impacts disproportionately upon the health of males. In 1995 alone, there were 5,130 male injury deaths in Australia in comparison to 2,227 female deaths. The male death rate for injury remains at 2.7 times the female death rate despite significant overall decline in injury death rates over the past two-and-a-half decades (AIHW & DHFS 1997). This ratio rises to 3:1 in parts of rural and remote Australia. Despite reductions to road transport-related fatalities in recent years, mortality and hospitalisation rates for males remain at substantially higher levels than for females. This pattern applies to all parts of Australia, but rates in rural and remote zones are much higher than in the metropolitan zone. Suicide is the other main cause of injury-related deaths in Australia where males have much higher rates than females. Some of this differential may be due to under-reporting in the female population and the propensity for males to use more reliable methods, such as firearms. However, the differential in suicide rates between males from the metropolitan zone and those living in rural and remote zones is striking. The highest suicide rates are noted among males from 'large rural centres' and 'other remote areas'. In contrast to this pattern, the highest suicide

rates in the female population are found in the metropolitan zone. Many factors including high unemployment and less access to or use of mental health facilities in rural and remote zones may lead to increased male suicide in these zones. Males in rural and remote zones may also have better access to firearms as a means of suicide.

Mortality data also reveal that homicide is a major cause of premature mortality among males in rural and remote zones. The male homicide rate in 'other remote areas' is four times the rate of 'capital cities'. Although there may be reporting biases for violence, it is clear that interpersonal violence results in deaths significantly more often among males in the remote zone. Indigenous males suffer the highest homicide rates in these zones and the rates in the Indigenous population influence the overall higher rates for males in the remote zone population. The hospital separation rates for interpersonal violence are also five times higher in 'other remote areas' than in 'capital cities', reflecting the pattern in homicide rates.

Diabetes is another source of premature mortality that effects males from rural and remote zones more than males from metropolitan areas. Males from the remote zone experience twice the death rates from diabetes than do their metropolitan counterparts. Diabetes is a chronic condition and patients need to follow a management plan involving a healthy diet and exercise program to control their disease. Management of diabetes also involves access to health services and allied health services such as nutritionists. People in rural and remote zones may not have sufficient access to a reasonably priced supply of fresh fruit and vegetables to help them control their diets appropriately. Other specialist health services important to people with diabetes such as opthamologists and podiatrists may be in short supply in rural and remote zones.

Males, in general, engage in fewer health-related actions than do females. However, those living in rural and remote zones appear to be taking those actions much less often than males in the metropolitan zone. Indications that males in rural and remote zones are paying less attention to health-related behaviours are found in the results of health surveys such as the ABS 1995 National Health Survey. A higher proportion of males in rural and remote zones report smoking, being overweight, consuming excessive amounts of alcohol, and having high levels of serum cholesterol compared with females in the same zones. Much of the high mortality and morbidity of males in rural and remote zones could be prevented with improved health behaviours and better access to health services.

Women's health

As discussed above, the health of females is generally better than the health of males from the same zones. This is reflected in overall lower mortality and morbidity for females. Females also show better health-related behaviours with fewer females reporting high alcohol consumption, high serum cholesterol, tobacco smoking, or being overweight. On the other hand, females have higher rates of acute illness and non-fatal chronic conditions than males (Mathers 1994). As a result, they use health services more than males do. However, many females in rural and remote zones do not attend support groups for dealing with chronic conditions or stress-related illness because they are too far away (Healthsharing Women 1994).

Domestic violence is a serious problem for females in rural communities. Statistics on interpersonal violence clearly reveal that females from the remote zone have 7 to 25 times higher rates of hospitalisation due to interpersonal violence than do females from other areas. Females from rural and remote zones are reluctant to involve the police if they suffer from domestic violence for several reasons. They often know the police socially and may be embarrassed about their situation becoming known to others in the community (Healthsharing Women 1994). In small rural towns where employment opportunities for women are few, females may not have financial independence (Healthsharing Women 1994). Females in rural communities list concern for economic survival as one of the top reasons for not leaving a violent domestic situation. Other reasons include fear of partner's threats, no means to leave, no place to go, no help to get away, family and community pressures to stay and little or no assistance from police (Healthsharing Women 1994).

Females in rural and remote communities often take on the responsibility for caring for the ill or disabled (Thomas 1994). Females with these commitments in rural communities are often carrying most of the burden of care that would be handled by an outside agency in urban communities. The stresses imposed by providing this care may translate into poorer health for the carers, especially if respite care is not usually available. Females in these roles have identified mental health as a high priority on their list of needs (Thomas 1994). Counselling services offering information on stress management, conflict resolution and communication skills are needed for rural females who provide support to families, communities, the aged or the disabled.

Indigenous females in rural and remote zones have special health needs that may not be met even though a medical practitioner may be available to the community. Gynaecological examinations can be a particular problem for Indigenous females who may find it impossible to discuss women's business with a male GP (Healthsharing Women 1994). This means that these females may not have equal access to disease-preventing practices such as Pap smear testing, breast examination by a doctor, or ante and postnatal check-ups. This in turn may be one explanation why Indigenous females suffer a higher burden of illness compared with other Australian females.

The distribution of health information can also be a problem for females in rural and remote zones (Healthsharing Women 1994). Females in these areas often lack basic information about health. A survey of rural women's health needs has identified short courses on health care topics, first-aid, reproductive health and menopause, educating children about reproduction, family planning, safety in the workplace and home, and accident prevention as important needs of females in rural communities (Thomas 1994). The positive aspects of good health education are evident in the statistics relating to breast and cervical cancer screening in Australia. In recent years, there has been widespread health education campaigns targeting these screening programs. As a result, over 70% of females from all localities report having a Pap smear test once every 2 years and approximately 60% of females from all localities report recently having either a mammograph or breast examination by a doctor. These statistics indicate that females, regardless of rural, remote or metropolitan status, recognise the importance of these screening techniques to reducing mortality from breast and cervical cancer.

Health services

In much of rural Australia, medical care is provided through lower average numbers of consultations with GPs in private practice and increased use of other services. These include hospital in-patient and out-patient services, salaried community medical services (especially Aboriginal health services), and substitute primary care providers (Aboriginal health workers and registered nurses). However, the interaction between the make-up of the health labour force and the health status of the population in rural and remote zones is not a simple one. Models of medical care in rural and remote zones are different from those for large urban centres because of travel distances for doctor, community care nurse or patient. This distance factor greatly increases rates of hospital admission and length of stay. Registered nurses and Aboriginal health workers are, for a significant number of isolated rural communities, the first avenue of a limited range of primary care functions, which in the metropolitan zone would be provided by GPs and alternative health professionals including chiropractors, naturopaths and osteopaths. Innovative methods are used in rural and remote zones to provide health services, including emergency medical care, to those in need. Telehealth in Australia has been practised in a variety

emergency medical care, to those in need. Telehealth in Australia has been practised in a variety of ways for more than 100 years (Parliament of the Commonwealth of Australia 1997). The telegraph was the first technology to be used to deliver health services to the remote zone. It provided a link to health care in the remote zone where the telephone was not available. The Royal Flying Doctor Service was established in 1929 in north-west Queensland to provide a much-needed health service to rural and remote zones that were difficult to cover with the telephone technology of the time. Today, modern technology has a role to play in solving some of the problems of access to health care in rural and remote zones. For example,

telecommunication centres have been set up specifically for the delivery of health care services in the remote zone and are termed 'telemedicine'. Telemedicine can provide diagnosis, treatment and some health services without the need for patients to travel for the treatment (Humphreys et al. 1996). However, the costs of the telecommunications infrastructure is substantial for rural and remote populations. Communities in rural and remote zones may not be able to afford the infrastructure costs of telemedicine. As a result, people living in these zones of Australia do not have access to a beneficial health service (Parliament of the Commonwealth of Australia 1997). Indigenous settlements are among the most disadvantaged by the high costs of telecommunications. In fact, because of the high cost of current telecommunications services, at least one Indigenous community finds it cheaper to fly three health workers in from Alice Springs than pay for 20 hours of tuition via teleconferencing links (Parliament of the Commonwealth of Australia 1997). Improvement in telecommunications facilities to remote areas is needed before telemedicine can be a cost-effective way of providing an equitable distribution of health resources throughout Australia.

In contrast to the situation in rural and remote zones, the metropolitan zone has the highest use of health services across all RRMA categories. The metropolitan zone has 24 hour access to health services with relatively short waiting times for GP services. Most of the metropolitan zone has high levels of doctor supply, and increasing subspecialisation of medical primary care. People in the metropolitan zone may be more aware of preventive health campaigns, and attend GPs for general check-ups and routine preventive tests.

The level of health in the rural zone does not rely solely on the supply of medical practitioners. Though the scope for improving health in the rural zone is greater than in the metropolitan zone, this does not imply that simply increasing the overall supply of health education or supply of GPs will automatically flow through to improvements in the rural zone. For example, there are many areas in Australia that already have an apparent oversupply of doctors. Local communities need to be consulted directly about their specific health service needs and how to make those services accessible to people in their geographic area. If consultation does not take place, the health services provided may not be used by people in the community. As international comparisons show, single-factor solutions are not always appropriate. For example, the supply of doctors in Japan is far less than in Australia, yet life expectancy in Japan is greater than in Australia. Programs that target promoting healthy lifestyles and better recognition of disease prevention may do more to improve the health of all Australians.

The health of Indigenous Australians

Indigenous Australians living in rural and remote zones face the same problems of poor access to health services and health care information that are faced by non-Indigenous people in these areas. However, the low socioeconomic status of Indigenous Australians adds to the problems of health care access as many people cannot afford to travel the distances necessary to participate in the health care system. As a result, Australia's Indigenous populations have well-documented health problems (Jeuken 1995; Humphreys et al. 1997) and face the hazards of a harsh physical environment compounded by poverty. Mortality data from South Australia, Western Australia and the Northern Territory show that the death rates for all causes of death are more than double that of the non-Indigenous population for both males and females. The major causes of ill health in the Indigenous population are injury, coronary heart disease, diabetes and homicide. Road transport-related accidents, homicide and suicide account for 70% of all injury-related Indigenous deaths. In fact, almost 20% of the deaths from injury in the Indigenous population are due to homicide, compared with only 4% in the non-Indigenous population. Regardless of cause, male death rates from injury are twice as high in the Indigenous population in the remote zone than in the non-Indigenous population. However, the gap narrows in rural and metropolitan zones, where Indigenous and non-Indigenous males have similar injury-related death rates. Males in general suffer from premature mortality due to injury, but this problem has more impact in the Indigenous population in rural and remote zones.

The picture for coronary heart disease and diabetes in Indigenous populations is just as grim. Diabetes death rates are substantially higher for Indigenous males and females than for their non-Indigenous counterparts in the same RRMA category. Indigenous males have 4 to 8 times higher mortality rates from diabetes compared with non-Indigenous males, and Indigenous females suffer 7 to 15 times higher mortality from diabetes than non-Indigenous females. This suggests that the problem may not simply be lack of access to health services in rural and remote zones, but also lack of access to culturally appropriate management plans and treatments for this population group across all areas of Australia. This point is further illustrated by examining the mortality data for coronary heart disease. Over the past 25 years, the non-Indigenous population has shown continuing improvement in decreasing mortality from coronary heart disease. However, the Indigenous population has not followed this trend. In fact, Indigenous people have death rates from coronary heart disease 50% higher than the non-Indigenous population. Risk factors such as low socioeconomic status resulting in poor diet and living conditions may be the cause of some of this differential. However, the differential occurs across all RRMA categories, suggesting that economic factors are not the only factors involved.

Aged care

The aged and those with chronic diseases are often over-represented in rural areas, especially in country towns (Humphreys et al. 1997). The health needs of these people may be difficult to meet because they may be unable to travel great distances to seek the care that they need. The rural zone often does not have facilities nearby to care for the frail, aged person. Physically isolated patients may also be socially isolated from their friends and family and this could affect the course of their disease as well as their quality of life.

Specific health-related issues for the aged population include mortality and hospitalisation due to injury, specifically burns and falls. Mortality resulting from burns makes up only 2% of deaths from external causes, but it disproportionately affects those over 55 years of age. The death rate due to burns increases with increasing distance from the metropolitan zone and is highest in remote RRMA categories. Aged Indigenous people are at particular risk of death from burns. The numbers dying from burns are small compared with the numbers of aged people who die from the after-effects of falls. Most deaths from injury in the over 65 years age group are related to the after-effects of falls. Females are particularly at risk because osteoporosis is often a cause of falls and their related fractures. Females living in 'remote centres' have twice the death rate from falls compared with their metropolitan counterparts. The higher mortality rates from falls and burns in the rural and remote aged compared with the metropolitan aged suggests that the health needs of aged people in rural and remote communities are not being met. Preventing falls and burns in this population in rural and remote zones will involve making sure that aged people have access not only to health care services but also to friends and family.

Up to 20% of acute hospital beds in rural and remote zones are occupied by nursing-home-type patients (Reid & Solomon 1992). The types of services provided to these patients are often not as good as the services they would have in a metropolitan nursing home. Federal government outcome standards for nursing home or residential care for the aged do not apply to nursing-home-type patients in acute care hospitals (Reid & Solomon 1992). Federal government nursing home outcome standards include optimal health care, social independence, freedom of choice, home-like environment, privacy and dignity, variety of experience, and safety of residents, visitors and staff (AIHW 1997d). For an acute care hospital facility to meet all of these standards would be difficult. These difficulties have led to pressure from State governments to close some acute care facilities because the majority of their patients were nursing-home-type patients. Another problem presented by the use of acute hospital beds by nursing-home-type patients is the perceived inefficient use of acute care beds, which can lead to the belief that people are being incorrectly placed in hospitals for long periods of time.

Conclusion

There are many positive aspects of the health of people in rural and remote zones of Australia. The ABS 1995 National Health Survey data suggest that Australians, regardless of geographic location, understand the need for disease-preventive measures such as sun protection, Pap smear tests and light exercise. However, the health of rural and remote Australians is worse than their metropolitan counterparts on many measures. These include injury mortality, specifically road-transport, homicide and suicide, as well as mortality from diabetes and coronary heart disease. The Indigenous population contributes substantially to the health differentials for mortality between urban and remote populations with regards to diabetes, homicide, suicide and coronary heart disease. The distribution of Indigenous people throughout Australia is such that they contribute the most to health differentials in 'remote centres' and 'other remote areas', but not to the rural zone. However, the Indigenous population across RRMA categories still has higher mortality rates from all causes of death compared with the non-Indigenous population.