1 Introduction

Background

Australians have long regarded life in the country as healthier than life in the city. Australian city-dwellers move to rural areas for health benefits such as clean air and reduced traffic congestion (Humphreys & Rolley 1991). However, people living in rural and remote Australia have many health disadvantages compared with their urban counterparts. These are demonstrated by higher mortality and morbidity rates for some diseases in rural and remote communities. Many factors can contribute to the rural health disadvantage, including:

- geographic isolation and problems of access to care;
- shortage of health care providers and health services;
- socioeconomic disparities;
- greater exposure to injury, in particular for persons employed in farming and mining;
- lower road quality;
- small, sparsely distributed populations; and
- Indigenous health needs.

Not all rural Australians have inequity of access to health services. They may benefit from having immediate access to 'nursing home type' beds, proximity to hospital, and the capacity to have their own general practitioner (GP) as case manager, before, during and after hospitalisation (Reid & Solomon 1992). However, most rural Australians recognise the need to travel further for access to services, especially for specialist consultations (Reid & Solomon 1992). Some people are compensated for their cost through the Isolated Patients Travel Assistance Scheme. However, this scheme does not fully pay for the financial and social costs incurred by the need to travel to seek medical assistance (Reid & Solomon 1992). Requirements for travel of patients and health care providers result in higher use in some areas of health care and lower use in others. For example, they may lead to lower rates of GP consultations and higher rates of hospital in-patient care in rural and remote areas because travel to a GP may be further than the nearest hospital. Models of patient care may also differ between urban and rural areas because of distance to health services. Patients with chronic conditions that require follow-up treatment are more likely to be hospitalised for that treatment in rural and remote areas, especially if they have to travel long distances to seek care.

As well as the differences in the models of care, there are clear differences in the health status of people living in rural and remote Australia. These are demonstrated by the consistently higher levels of mortality, disease incidence and hospitalisation, and health risk factors experienced in rural and remote areas.

A number of theoretical frameworks aid our understanding of the data and indicate that rurality is not the causative factor in poorer rural health. Rather, factors associated with rurality, such as poverty and less access to health services, are causes of the rural health disadvantage. By analysing the data for rural and remote populations, we hope to identify both the health problems and the reasons for these problems.

Indicators of rural health

An indicator-based approach has been adopted for the presentation of rural health information in this report, because it provides easily understood information on a broad range of health issues to an audience of varying levels of knowledge of health and statistics.

Introduction

Health indicators inform the general public, medical professionals and policy makers about the state of health in different population groups. They also help to identify differences between population groups and can lead to public health interventions that are targeted at specific groups. However, no single indicator is able to provide complete insight into the state of a population's health. Therefore, a collection of indicators has been selected from an array of data sources to present comparative statistics in an easy-to-understand format. We report on indicators of rural health in four major areas:

- sociodemographics
- health status
- health risk factors
- expenditure and utilisation of health services.

Age structure, growth and size of the population as well as summary indicators of wellbeing such as life expectancy, total death rate and total fertility rate are the sociodemographic characteristics of interest. Understanding the underlying demographics of the population is necessary for interpretation of the reported health indicators. For example, Australia's Indigenous population makes up only 2% of Australia's total population. Only 1% of the population in metropolitan areas and 2% of the population in rural areas are Indigenous people. However, 13% of the population in 'remote centres' and 26% of the population in 'other remote areas' are Indigenous Australians. Consequently, health differentials in metropolitan and rural areas will not be markedly influenced by the relatively poorer health of the Indigenous population but this population will have an effect on the health differentials of remote areas. Analysis of the demographic structure of these populations provides a better understanding of health differentials between the population groups.

Health status indicators focus on differential mortality and hospital separation rates for important causes of ill health. Health risk factors include individual behaviours that influence the development of disease and their impact on morbidity and mortality. Availability and use of health services determines whether or not individuals receive effective treatment for their medical conditions. The cost of these health services to each of the communities involved in providing the services is also an important component of the analysis.

This analysis uses indicators derived from various types of health-related statistics. Emphasis was placed on indicators that report on the National Health Priority Areas (AIHW & DHFS 1997).

Mortality statistics are one of the most comprehensively collected national data sets. Indicators based on these statistics constitute useful measures of the health status and wellbeing of a population (Mathers 1996). Death rates may also be used as markers for the level of socio-economic development or to identify health needs. Death rates by cause put this information into an epidemiological context, and can even provide an environmental perspective (Trickett et al. 1997).

Hospital separation statistics are often cited as measures of community morbidity. Event-based hospital statistics may also be used as indicators of availability of and access to health services. Cause-specific hospital separation rates are helpful in plotting spatio-temporal variation of illness. They may also be used for identifying population needs.

Statistics distinguishing hospital separation rates for surgical procedures and medical diagnoses are useful indicators of differential health service use. They can be used to measure accessibility and availability of health services. Whereas medical diagnoses are more likely to reflect the distribution of illness, 'surgical' and 'other' categories provide additional insight into available medical facilities and technology.

However, hospital separation statistics do not provide comprehensive indicators of disease incidence for many conditions because they relate mostly to the acute end of the spectrum of illness (AIHW 1997a). Indicators based on primary health care statistics, in particular consultations by GPs, community nurses and pharmacists, can augment this information.

GP and community nurse consultations usually represent the less acute end of the illness spectrum. They are much more discretionary than hospitalisation, and may include consultations for a variety of purposes. Nonetheless, physical illness is the strongest predictor of these consultations (Jacomb et al. 1997). The rate for GP consultation is known to decrease with geographical distance, although factors such as acceptability and continuity of care also play an important role (Humphreys et al. 1997).

Most of the above indicators look at the use of health services in the context of health care needs. However, it is also important to look at the availability of, and access to, health services. In rural and remote zones where the supply of services is restricted by difficulties in attracting health service personnel and the cost of service provision, indicators derived from health resource statistics, such as the health labour force and overall health expenditure, may be useful in targeting specific needs for health services. However, community input into the need for health services will be necessary to ensure that the services provided are not confined to those based on urban requirements.

Indicators based on self-reported health status, risk factors, risk-taking behaviours and health-related action statistics, such as those collected through the National Health Surveys (NHS), provide useful insights into aspects of health from the perspective of lifestyle. Some of these indicators may be interpreted in two different ways. The prevalence of self-reported high cholesterol levels, for example, is a guide to the level of a risk factor (or condition) in the population. However, it may also reflect the degree of awareness of the risk factor (or condition) in the population, or the willingness of the individual to report the condition. Viewed together with mortality and hospital separation statistics, these indicators help generate valuable profiles of a population's health.

The mortality of the Indigenous population is compared with that of the non-Indigenous population to show the extent to which the poorer health of the Indigenous population affects metropolitan/rural/remote health differentials. These indicators demonstrate that the Indigenous population in metropolitan and rural zones is not large enough to affect the health differentials between these zones. However, in the remote zone the Indigenous population forms a larger proportion of the total population, and does influence the lower health status of remote regions. These indicators also show that the health status of the Indigenous population becomes worse with increasing distance from urban centres.

The RRMA classification

The Rural, Remote and Metropolitan Areas (RRMA) classification, developed in 1994 by the Department of Primary Industries and Energy, and the then Department of Human Services and Health, was used as the framework by which the various data sources could be analysed for metropolitan, rural and remote zones. Seven categories are included in this classification—2 metropolitan, 3 rural and 2 remote zones (Table 1).

The classification is based on Statistical Local Areas (SLA) and allocates each SLA in Australia to a category based primarily on population numbers and an index of remoteness (DPIE & DHSH 1994). The index of remoteness was used to allocate non-metropolitan SLAs to either the rural or remote zone. This index of remoteness was constructed for each non-metropolitan SLA using 'distance factors' related to urban centres containing a population of 10,000 persons or more, plus a factor called 'personal distance' (Arundell 1991). Personal distance relates to population density and indicates the 'remoteness' or average distance of residents from one another (DPIE & DHSH 1994). It is important to note that this method of allocating an SLA to a rural or remote zone is not perfect. Both the size of SLAs and the distribution of the population within SLAs vary enormously. This can mean, for example, that within a remote SLA there can be pockets that are rural rather than remote, and vice versa.

Table 1: Structure of the Rural, Remote and Metropolitan Areas (RRMA) classification

Zone	Category
Metropolitan zone	Capital cities
	Other metropolitan centres (urban centre population ≥ 100,000)
Rural zone	Large rural centres (urban centre population 25,000–99,000)
	Small rural centres (urban centre population 10,000–24,999)
	Other rural areas (urban centre population < 10,000)
Remote zone	Remote centres (urban centre population ≥ 5,000)
	Other remote areas (urban centre population < 5,000)

The RRMA groupings are classified according to Statistical Local Areas (SLAs) based on the Australian Standard Geographical Classification (ASGC) version 2.1 (ABS 1995). However, much of the data analysed had been geographically coded to SLAs based on earlier and subsequent ASGC versions, or had been coded to postcodes rather than SLAs (see Chapter 7 for more details). Concordance algorithms were developed to convert postcode information and the various versions of SLA boundaries into RRMA groupings.

Data sources

Relevant information was extracted from the following data sources:

- mortality statistics from the Australian Institute of Health and Welfare (AIHW) Mortality Database
- hospital separation statistics from the AIHW National Hospital Morbidity Database
- cancer incidence data from the AIHW National Cancer Statistics Clearing House
- health care statistics provided by the Medicare Estimates and Statistics Section of the Commonwealth Department of Health and Family Services (DHFS), based on Health Insurance Commission (HIC) datasets
- perinatal statistics from the AIHW National Perinatal Statistics Unit
- National Health Surveys (NHS) 1989–90 and 1995
- health labour force statistics compiled by AIHW from registration data
- AIHW Hospital Utilisation and Costs Study, 1996
- Medicare data provided by the Health Insurance Commission
- 1995 ABS Child Immunisation Survey
- ABS population estimates by SLA for the 1992–96 period aggregated into RRMA categories, taking into account SLA boundary changes over this period
- Aboriginal and Torres Strait Islander population estimates, compiled by scaling the 1996 Census counts (by RRMA and State/Territory) to the State/Territory experimental estimates of the Indigenous population (ABS 1998c).