

Determinants of health (Tier 2)

The five dimensions of this tier are:

- 2.1 Environmental factors
- 2.2 Socioeconomic factors
- 2.3 Community capacity
- 2.4 Health behaviours
- 2.5 Person-related factors

2.1 Environmental factors

Environmental factors such as air, water, food and soil quality and access to clean water and fresh fruit and vegetables directly influence the health of Australians. Longer-term environmental impacts include the depletion of the ozone layer, increases in UV levels and increased salinity of our water systems.

Possible measures to monitor environmental factors include:

- *air quality – levels of pollution, dust and pollen counts, Legionella reports;*
- *stratospheric ozone levels;*
- *smoke-free homes and workplaces;*
- *water – pollutants, bacterial readings, blue green algae; and*
- *food quality – salmonella reports etc.*

Source: *National Health Performance Framework Report, August 2001.*

The physical environment in which people live plays an pivotal role in population health. Adequate air, water, food and shelter are basic necessities of life. Protection from pathogens, the extremes of temperature and ultraviolet radiation are other examples of environmental factors that affect health. Ultimately, issues such as soil depth and quality, climate, biodiversity and sustainable utilisation of resources such as fisheries and forests are of critical importance to rural communities now, and indeed to the health of future populations generally, and are currently under threat (McMichael 1993).

Most nationally reported or suggested indicators (e.g. stratospheric ozone, etc.) may not be appropriate rural health indicators because variation across remoteness classes does not occur or its variation is unrelated to remoteness (e.g. stratospheric ozone). Instead, environmental indicators that relate to the following factors may be more appropriate in this framework:

Access to and/or quality of:

- water;
- sewerage;
- food;
- housing;
- recreational and cultural facilities or spaces;
- the workplace; and
- the levels of pollutants.

It is currently difficult to report against many of these factors, due to limited availability of national data. Some states have data and some factors have been investigated in one-off surveys.

Water

Adequate quantities of clean water are essential for the maintenance of health. The availability of biologically safe 'tap water' (or water which is otherwise the immediate source of household water), particularly regarding the degree of faecal contamination, is a basic necessity for the maintenance of health. In addition, the chemical quality of water (including the presence of salts and pollutants such as agricultural chemicals and heavy metals) may also be of relevance. Fluoridation of reticulated domestic water supplies has clear public dental health benefits.

Suggested indicator:

2.1.1: Fluoridated water – the percentage of 'localities' in which reticulated water supplies have a fluoride concentration within the NHMRC guidelines. See page 88.

Sewerage

Decent sewage disposal is another basic requirement for health. Adequate sewage disposal is essential to prevent the spread of disease through direct human contact or through contamination of water supplies.

What constitutes effective sewage disposal may differ from place to place. Typically, it may consist of a sewerage system with primary, secondary and tertiary treatment of effluent, maintained by local government. However, it may also consist of a well maintained and sited septic system. It may be impractical for small isolated communities or farm houses to be connected to the sewer: septic systems are a reasonable alternative. However, at sites, or in communities, where the system is not well maintained, any sewerage system, but particularly a septic system, can fail and become a health hazard.

Food availability

The price of food is examined under the dimension 'Community capacity' in this tier. However, irrespective of the price of food, the availability of certain foods can be restricted in more remote areas. For example, fresh fruit and vegetables, or their variety, may simply not be available. Availability of fresh fruit and vegetables is important for the maintenance of health.

A national data source has not been identified and this indicator requires development. A possible proxy is to report the results of individual state surveys (e.g. Public Health Services 2001).

Housing

Housing provides the most basic of the environments in which people live. Important issues include the degree of crowding (covered under the dimension 'Community capacity'), security aspects, the building's effectiveness in maintaining a comfortable internal temperature, appointment with furniture (e.g. appropriate numbers of beds), the functioning of household fixtures and appliances (does the toilet work, is there a functioning fridge, shower, kitchen sink?). Additionally, is there appropriate personal space for people and a place for children to play, study or have privacy? Does the house have access to electricity and is the telephone connected?

Suggested indicator:

2.3.8: Overcrowding in households – as described on page 28.

Recreational and cultural facilities or spaces

Recreational and cultural facilities or open space provide people with the space or facilities for activity and learning that make life interesting or pleasant. Football grounds, bowling alleys, pubs, churches, libraries and museums, beaches, national parks, walking tracks, rivers and swimming pools are examples of some of these. Their importance lies in providing people with an opportunity for activity, enjoyment and learning, and as such, they also provide people with an opportunity to develop and interact with other people.

A data source has yet to be identified.

The workplace

Farming, mining and fishing are potentially dangerous occupations. Additionally, an under-supply of work may encourage workers to accept workplace standards that are less safe. A measure of the level of safety within workplaces and/or the rate of workplace accidents would be useful in identifying areas for improvement.

An indicator is not currently possible because the National Occupational Health & Safety Commission does not collect details of geographic location (other than state). Measures of mortality or hospital morbidity may be an alternative, but there are some concerns about the accuracy and completeness of details of occupation recorded in National Mortality databases and the ABS Census.

An indicator requires development.

Pollutants

It is likely that both the concentration of, and human exposure to, pollutants would be lower in non-urban environments. However, it is possible that exposure to small particulates may be greater in non-metropolitan areas because of the presence of dusts, smoke and pollens. Exposure to some hazardous materials may occur as a result of poorer living conditions through material or equipment no longer thought to be safe (e.g. asbestos sheeting, lead-lined equipment, etc.) and the consequence of 'making do' or of affordability.

Exposure to a number of agricultural chemicals is frequently raised as a potential health hazard, but the effects of this exposure are either so subtle or the identification of cases of ill health linked to exposure so inadequate as to make a causal link difficult to establish.

A data source has yet to be identified.

2.2 Socioeconomic factors

Research has shown clear associations between socioeconomic factors such as education, employment and income and the health status of Australians. Generally, population groups with lower socioeconomic status have poorer health than those with higher socioeconomic status. Reporting the socioeconomic factors affecting health will help to inform public policy. This could encourage greater intersectoral collaboration to help address health inequalities and improve health status and health outcomes.

Suitable indicators may include health outcomes or health determinants broken down by:

- *education level (primary/secondary/tertiary);*
- *employment status; and*
- *income.*

Source: *National Health Performance Framework Report, August 2001.*

Under this dimension in the framework, the following issues were considered:

- education;
- employment;
- income; and
- a combined measure of these three (SEIFA).

Education

Education provides opportunities for employment and income as well as a foundation for the development of life skills and awareness of the relationship between lifestyle, outlook on life and health outcomes. The educational background of the adult population will influence their health and that of their family, while educational opportunities for children influence their future life choices, and hence health. The lower prevalence in more remote areas of employment requiring higher education is likely to reduce the motivation of students to complete secondary or tertiary education. For those who do complete secondary education, the need to migrate to a metropolitan area so as to complete tertiary studies will act to maintain the lower average educational level of non-metropolitan communities, unless they return after completion. Additionally, reduced higher level employment opportunities in non-metropolitan areas for the general adult population (as for school leavers), can only help to maintain the lower average level of educational attainment within rural/remote communities.

There are two substantial aspects of this issue which need to be considered:

- the educational level of the rural and remote population compared with the metropolitan population; and
- the educational opportunities for children and young people living in rural and remote areas.

Educational level of the population relates to the population's socioeconomic status and hence predisposition to disease (e.g. through personal risk factors), as well as people's ability to take advantage of available services. An understanding of educational level may also be important in relation to targeting health information and in explaining disparities in health status and health service utilisation.

Educational opportunity for children and young people relates to future educational level, life opportunities, health status and health service utilisation. It is important to be aware of educational opportunities and barriers for young people from rural areas; understanding these may help resolve future potential inequity.

Suggested indicators:

2.2.1: Educational status of the adult population – as expressed by the percentage of persons aged 20–39, 40–59 and 60+ who have completed high school or who have tertiary qualifications. Data pertaining to the level at which schooling was finished is unlikely to be possible; the proposed proxy is the age by which school was left (namely, before 12, 17 and 19 years). This provides a measure of educational status of the adult population. See page 89.

2.2.2: High school retention rates – the percentage of 17 year olds enrolled in secondary school as inferred by the ratio of 17 year olds who are currently enrolled in secondary education to the average number of children aged 10–14, five years previously. This provides a measure of the educational opportunity for young people.

Actual high school completion rates would be preferable to current enrolments, but this information is not available by geographic location. Enrolments are known and so the closest proxy is to calculate an enrolment rate for 17 years olds. See page 90.

2.2.3: Progression from school to university – the percentage of people aged 17–20 years who have commenced their first year of tertiary study. Commencements were chosen rather than completions because a geographic identifier is not included in the data set describing completion of university study (i.e. it is not possible to describe the rate of completion of university studies by students from rural and remote areas). Additionally, at the end of their studies, home address is more likely to be the location where students are studying or are working, rather than where they are ‘from’. See page 91.

Employment

Employment gives people a sense of function, of integration with the community, and of self-worth as well as the financial resources to provide for necessities. Information about those participating in the labour force and those employed (including those engaged in Community Development Employment Programs) is relevant. Employment opportunities and types of job are typically more restricted in non-metropolitan areas, limiting the opportunities for people to find employment in rural communities and consequently forcing them to move to less remote centres or accept less favourable employment options.

Information about the both the quantity and type of employment would be useful, particularly:

- the proportion of the population who want to be employed (and of those, the proportion who actually are and are not); and
- the type of work available or performed (type of industry, part-time/full-time).

Desirable measures of employment include:

- the percentage of the adult population who want to be employed;
- the percentage of these who are not employed;
- the percentage (relative to both points above) who are employed under Community Development Employment Programs (CDEP); and
- the percentage of the adult population who are employed.

Desirable measures of the type of employment include:

- the type of industry in which people are engaged (farming, other business, public sector, and so on). This information is dealt with by indicator 2.2.7 ('Sources of income');
- whether work is full-time, part-time, or seasonal (not currently possible); and
- whether people are self-employed or employees (not currently possible).

Employment (or unemployment) rates and type of work can be estimated from the ABS Census, once every 5 years. Although this allows quite some time between reporting periods, it does allow comparison of rates between regions (which are unlikely to change rapidly without a radical change in the rural/remote economy relative to that of the metropolitan economy).

While it is currently possible to identify people who are registered with CDEP, it is not possible to describe the number who are working.

Suggested indicator:

2.2.4: Workforce and employment – proportions of males and females aged 15–64 and 15–54 years:

- (a) in the labour force (participation rate);
- (b) unemployed as a proportion of the labour force (unemployment rate);
- (c) employed as a proportion of the population (employment/population ratio).

See page 92.

Income

Income from employment (or other personal income such as investments or superannuation) or via social security provides for necessities such as food, clothing, shelter, security, education, transport, and health care. It also provides people with choice and power (self-determination) within their own lives. The 'less skilled' nature of work opportunities in more remote settings and the higher level of competition for jobs, as well as lower prevalence of employment, act to keep income at lower levels. Higher levels of fertility and larger families, along with greater prevalence of Indigenous people, who tend to have larger households, may require income to be assessed more cautiously than measures based merely on average 'household income'.

Income is relative; relative to the income of others and relative to the cost of goods and services. Indicators of income need to be interpreted in the light of information about the costs of goods and services across geographic areas.

There are several aspects of income that are important:

- the relative size of family incomes adjusted for family size (i.e. are the incomes of similar sized families the same in metropolitan and rural Australia?);
- a measure of the gap between the rich and poor (as there is some evidence that health relates to this gap as well as to absolute levels of poverty);
- the percentage of each region's income derived from each type of industry (farming, other business, public sector, social security, etc.). This measure allows an understanding of the weaknesses and strengths in the economy of each area, an important determinant of the opportunity for employment and to earn income; and

- the percentage of each region's income derived from the source of that income (i.e. from wages and salary, business income (sole proprietor, partnership), investments and government benefits). These measures give an insight into the income self-reliance and earning capacity of regions (an issue expanded further on page 29).

These details of income can be derived from ABS Census data and the ABS Survey of Income and Housing Costs (SIHC).

In recent years the Rural and Regional Statistics National Centre (RRSNC) of the ABS has been utilising data from the Australian Taxation Office (ATO) and the Department of Family and Community Services (FaCS) to provide a range of income-related statistics. These data provide valuable information about relative advantage and disadvantage in regions and can also indicate the level of financial resources, including from different sources, available to the total population in a region. While these data are available at the statistical local area (SLA) level, estimation techniques can be used to provide statistics for broader geographic areas such as the ABS Remoteness Classification. The statistics are available annually.

To date, using ATO Individual Income Tax Return data, the ABS RRSNC has produced estimates of the number of wage and salary earners, their average and median wage and salary income and their average and median total income from 1995-96 onwards. Other characteristics of wage and salary earners also available from this series are various cross-tabulations of age, sex, occupation and wage and salary income (in ranges). The main focus of these data are on employment and earned income. (See ABS Cat. Nos 5673.0, 5673.0.55.001, 5673.0.55.003 and 6261.0.55.001.)

Using a combination of both ATO and FaCS data, the ABS RRSNC has released experimental estimates about the sources and total amount of personal income people receive. The sources of income cover wage and salary, own unincorporated business, investment, superannuation and annuity, government cash benefit, and other income and are available at the SLA level for 1995-96 onwards. The data items available also include net tax paid so simple measures of average disposable income at the regional level can be derived by deducting net tax from total income. More detailed information for government cash benefit income is also available providing a breakdown by five main payment types: age pension, disability support pension, Newstart allowance, parenting payment and youth allowance. (See ABS Cat. Nos 6524.0 and 6524.0.55.001.)

Suggested indicators:

2.2.5: Household income – average equivalised 'after-tax' household income, adjusted for the number and age of those in the household. See page 93.

2.2.6: Gap between rich and poor – the ratio of the income earned by high income earners to the income earned by low income earners. See page 95.

2.2.7: Sources of income – the percentage of people reliant on each industry sector for their main source of income. See page 97.

Measures of the number of people reliant on social security and the total dollar amounts paid in each area, have been developed by ABS RRSNC.

A combined measure of education, income and employment

SEIFA (Socioeconomic Index for Areas) provides a summary measure of the socioeconomic conditions in an area.

Suggested indicator:

2.2.8: *Socioeconomic Indicators for Areas (SEIFA)* – the percentage of the population in each area who live in census collectors districts (CDs) in each of four SEIFA quartiles. The SEIFA index of disadvantage, economic resources and of education and occupation could be reported. See page 99.

2.3 Community capacity

Community capacity incorporates information on characteristics of communities that can influence health, such as health literacy, quality housing, community support services, transport, community safety and social support. It also includes measures of local health services. Concepts and measures of community capacity are currently the focus of considerable research and development. Appropriate national performance indicators that relate health to community capacity will be developed.

Indicators could include:

- *health services in the locality;*
- *trust in health professionals;*
- *health literacy; and*
- *community support services.*

Source: National Health Performance Framework Report, August 2001.

Under this dimension in the framework, the following issues were considered:

- demographic characteristics;
- social issues and social capital;
- services (including recreational and cultural activities/venues);
- health literacy;
- individuals' perceptions of risk;
- housing;
- transport;
- cost of living; and
- health of the business/commercial sector.

Demographic characteristics

The age and sex of the population as well as the proportion who are Indigenous are important issues, both in their own right and also for the interpretation of many of the other indicators.

Suggested indicator:

2.3.1: Demography—demographic characteristics of the population, including population size, growth rate, age and sex structure, and proportion of the population who are Indigenous. See page 100.

It is possible that mobility (i.e. migration to another area) masks important health differentials. The opportunity for, and pressure to, change residence so as to access education, a job or health services will see people move between areas. Mobility of the population between areas may affect the interpretation of other indicators. For example, migration of older people in poorer health to less remote areas, leaving those who are in good health to continue residing in remote areas, may hide poor health outcomes in remote areas and overstate them in other areas.

Suggested indicators:

2.3.2: *Dependency ratio* – the ratio of people older than 65 years and of people 14 years or younger to people of working age (15–64 years). See page 102.

2.3.3: *Internal migration* – of the number and proportion of the population in each age group migrating between ASGC remoteness areas, and the direction of that migration. See page 103.

Teenage pregnancy and larger numbers of children per family increase personal risk and financial stress, and reduce educational and employment opportunities for women and their families.

Suggested indicator:

2.3.4: *Fertility* – birth rates in each area for females overall and for females in each age group. See page 104.

Social issues and social capital

‘Social capital’ refers to the institutions, relationships and norms that shape the quality and frequency of a society’s social interactions. Increasing evidence shows that social cohesion is important for societies to prosper economically and for development to be sustainable (World Bank 2002). Measuring social capital is difficult; however, a range of proxies such as measures of trust in government, voting trends, memberships in civic organisations, and hours spent volunteering has been used previously (World Bank 2002).

Social issues that would appear to be important indicators of the health of rural and remote populations include hours spent volunteering or engaged in community projects, levels of violence in the community and within the family, rates of property crime, membership of clubs, some measure of community empowerment, sole parenting, truancy rates, and so on.

Community and family harmony provide a safe and nurturing environment in which people can enjoy living. Community violence and child abuse or neglect can turn an otherwise healthy community environment into one where fear and aggression reduce the opportunities for health, education and mental wellbeing.

Suggested indicator:

2.3.5: *Community safety* – mortality due to interpersonal violence and mortality of children under 5 years due to interpersonal violence. See page 105.

Services

Services such as post offices, banks, health services, community services (e.g. police, social workers, and so on), telephones, mobile phone coverage, Internet and emergency support services are important basic services for which there may be inequities in access across the spectrum of remote to metropolitan Australia.

These services are important for a number of reasons: either to provide health services or other infrastructure to contribute to a safe and convenient environment; as a means of

enhancing communication and access to information; or to provide emergency services in times of crisis.

During periods of crisis, people (frequently women and their children, but including homeless men of all ages and families in difficult circumstances) require emergency assistance. Assistance can be provided through a number of channels including friends, family, government agencies and non-government organisations.

In addition, recreational and cultural activities/venues are important on the basis of the beneficial effect they can have on people's lifestyle. Apart from their impact on mental outlook and physical activity, these factors are likely to play an important part in the retention of health professionals. Activities/venues can be facilities (e.g. football fields, parks, libraries), natural features (e.g. accessible beaches and rivers) or groups of people (e.g. choral groups, churches, football clubs). There is some overlap here with social capital and also with the environmental dimension.

An indicator has not yet been developed.

Health literacy

Health literacy is the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions (US Health Department 2002).

Health literacy means more than being able to read pamphlets and successfully make appointments. It represents the cognitive and social skills that determine the motivation and ability of individuals to gain access to, understand and use information in ways that promote and maintain good health. By improving people's access to health information and their capacity to use it effectively, health literacy is critical to empowerment.

As such, knowledge and understanding of health issues, services and opportunities provide people with greater power to influence their own level of health. For example, knowledge about the effects of tobacco smoking, excessive alcohol consumption, nutritional intake, cervical screening and so on, are important so that individuals can make informed choices about healthy lifestyles. Additionally, people's knowledge, understanding and attitude about accessing services, about programs aimed at improving access to services and about their rights generally are likely to have an impact on people's use of services.

Indicators could assess issues such as ability to speak and read English (correlated to ability to access services and level of education), women's health screening issues (e.g. whether had a mammogram or Pap test), understanding of health risk factors (e.g. that smoking, excessive alcohol consumption, illicit drugs, lack of exercise, poor diet, etc., is bad for you), and level of private health insurance.

A suitable indicator requires further development and an appropriate data source has not yet been identified.

Individuals' perceptions of risk

Are individuals' perceptions of risk to their own personal health or safety different in rural areas to those in metropolitan areas? The perception of risk relates to a range of practices and behaviours, from speeding, drink driving, smoking, sexual practices and seeking medical advice, to income and perhaps, to some extent, a measure of stoicism. Understanding whether perceptions of risk differ with geography could be an important element in altering the prevalence of risky behaviour in particular areas.

An appropriate indicator has yet to be developed; however, a possible proxy is suggested below.

Suggested indicator:

2.3.6: Perception of risk – the percentage of the population who self-report engaging in risky behaviour (e.g. having driven, worked, swum, verbally or physically abused someone, etc.) while intoxicated with alcohol or an illicit drug. See page 107.

Housing

Housing provides people with personal security and protection against the elements. Its quality relates directly or indirectly to health through the effects of crowding and state of repair on education, personal hygiene, stress, depression, injury, and so on. Valuable comparisons would include:

- the quality of housing (including state of repair and function);
- levels of home ownership as opposed to tenancy;
- levels of crowding; and
- how well the housing suits the lifestyle of households.

Of these, the second and third issues can be described. Although some information is available for the other two, the data sources do not provide national coverage.

Suggested indicators:

2.3.7: Housing tenure – the proportion of households that are renting, purchasing, or who own their dwelling. See page 108.

2.3.8: Overcrowding in households – the percentage of dwellings that are considered overcrowded, based on the number of bedrooms, household size and composition. See page 109.

Transport

Information about transport should consider both access to local goods and services as well as access (when required) to health-related goods and services available only in metropolitan areas. Public transport is either limited or not available in rural and especially remote areas, so access to a car is important for accessing goods and services (including health services, education and work). Measures such as rates of car ownership are obvious, but other important issues include:

- whether a bus or train service operates locally and to major centres (including metropolitan centres);
- how frequently services run;
- the financial costs of using these services; and
- whether some form of government financial assistance for transport may be required to access health services, etc.

This level of information is not available nationally.

Suggested indicator:

2.3.9: Transport – the average number of registered motor vehicles garaged per household per adult and the percentage of households with at least one vehicle. See page 110.

Cost of living

The capacity to be able to live a healthy life not only depends on income, but also on the cost of living. Clearly, if food is more expensive, there is less to spend on access to health services (and other goods and services directly and indirectly linked with health outcomes).

There is no available overall measure of cost of living in rural and remote areas (consumer price index (CPI) is calculated only on the basis of costs in metropolitan areas). Reporting the cost of food, petrol and housing prices (weekly expenditure of mortgage or rent) is currently possible.

Suggested indicator:

2.3.10: *Cost of living* – in lieu of an overall cost of living statistic, prices of three fundamental groups of commodities (food, housing and petrol) are compared across areas.

Cost of housing as expressed by the weekly cost of rents and mortgages recorded at each Census can be used to describe the cost of housing to residents in each geographic area. The cost of petrol is collected regularly by Informed Sources P/L for the Australian Competition and Consumer Commission (ACCC), but the cost of food is currently collected only by 'one-off' state surveys. See page 111.

Health of businesses

The opportunity for deriving a livelihood through paid employment, with its inherent health benefits, depends on the health of the business sector and opportunities for employment in the public sector. This presupposes a buoyant regional economy. Contraction of the economy is likely to restrict employment opportunities and engender despondency; a healthy or expanding economy is likely to create job opportunities, attendant optimism and better health outcomes. Access to employment and goods and services is important for the maintenance of health and also assists in the retention of a health workforce in regional areas. Potentially valuable information could include the number or rate of business closure and openings, the types of businesses opening and closing, and the relative contribution of these to local employment (number of people employed) and income (dollars earned by people locally).

At the regional level ABS can provide data based on the ATO's Australian Business Register (see ABS 2001a). These data, available by postcode, relate to counts of single location business entities that are actively registered for GST. Counts by industry and annual turnover size are also available (some restrictions apply to these data.)

Suggested indicator:

2.3.11: *Business activity* – the economic health of a region measured by business growth or decline. See page 113. This indicator cannot currently be reported by ABS Remoteness structure (or similar geographic classification).

2.4 Health behaviours

Poor health is strongly associated with, or caused by, certain health behaviours. Poor diet, insufficient physical activity, excess alcohol consumption and smoking are common risk factors for many diseases and conditions including cancers, diabetes, heart disease and stroke.

Possible indicators to monitor may include:

- *tobacco use;*
- *excessive consumption of alcohol;*
- *illicit drug use;*
- *levels of physical activity; and*
- *nutritional intake.*

Source: *National Health Performance Framework Report, August 2001.*

Under this dimension in the framework, the following issues were considered:

- smoking;
- hazardous and harmful alcohol consumption;
- illicit drug use;
- physical activity/inactivity;
- nutrition;
- sexual practices; and
- driving practices.

Smoking

Smoking is the personal risk factor associated with the greatest burden of disease. It would be desirable to compare smoking rates in each area and for Indigenous and non-Indigenous people (including an assessment of the prevalence of children smoking). Comparison of individual and community attitudes to smoking as well as availability of cigarettes to young people would be more appropriately covered under the 'Community capacity' dimension.

Suggested indicator:

2.4.1: Tobacco – the percentage of persons living in each area who are regular smokers. See page 114.

Hazardous and harmful alcohol consumption

Moderate alcohol consumption appears likely to provide some health benefits; but consumption of larger amounts can have substantial harmful health and social effects. Useful information would include comparisons across areas of both rates and patterns of hazardous and harmful alcohol consumption.

Suggested indicator:

2.4.2: Alcohol – the prevalence of alcohol consumption capable of resulting in harm in the short and long-term as defined by the NHMRC Australian alcohol guidelines 2001. See page 116.

Illicit drug use

Illicit drug use can constitute a significant health risk and can feed property and personal crime rates (reducing opportunities for others). The rate of illicit drug use (including cannabis, injecting drugs, non-prescription use of prescribed drugs, petrol and so on) may vary with remoteness. The relatively small sample sizes of the relevant data sources may restrict the opportunities for reporting in the more remote areas.

Suggested indicator:

2.4.3: *Illicit drugs* – the proportion of people who had recently used an illicit drug (all illicit drugs, cannabis and all illicit drugs other than cannabis). See page 118.

Physical activity/inactivity

A certain level of physical activity is required to reduce the risk of cardiovascular disease, the leading cause of death. It would be useful to report on comparisons of rates of physical inactivity across areas, with consideration given to the contribution of physical activity sustained both at work and during leisure time.

Suggested indicator:

2.4.4: *Physical inactivity* – from the National Health Survey, the percentage of people aged 18 years and over not engaging in sufficient leisure-time physical activity. See page 119.

Nutrition

Food availability and price have been considered in the 'Environmental' and 'Community capacity' dimensions. Good nutrition with sufficient quantities of fruit and vegetables, appropriate quantities of dairy products and meat and lower quantities of fat, salt and refined sugars reduces the risk of a range of serious diseases and conditions. It would be useful to be able to report against all of these. From available data sources it is difficult to distinguish refined from unrefined sugars, and so sugars will not be reported.

Suggested indicator:

2.4.5: *Nutrition* – estimated dietary energy intake, and intake of saturated fat, fresh fruit and vegetables, and dietary fibre. See page 121.

Sexual practices

The prevalence of sexually transmitted infections (STIs) in some communities in rural and remote communities is high. The effect on individuals, their sexual partners and their children is substantial from both a health and also a social perspective. An understanding of sexual practices, particularly the prevalence of unprotected sexual intercourse outside of a monogamous relationship, may assist in enhancing efforts to protect individuals from STIs in these areas.

Suggested indicator:

2.4.6: *Sexual practices* – the age-standardised percentage of males and females who self-report non-safe sexual practices in each area. See page 123.

Driving practices

Motor vehicle accidents contribute substantially to the 'excess' mortality in non-metropolitan areas. Comparison of driving practices such as speeding, drink driving and seat belt use across geographical areas may assist in targeting public health action.

A data source for this indicator has not been identified.

2.5 Person-related factors

Person-related factors include age, genetic and biomedical characteristics. These are factors outside those normally influenced by individual behaviours or by the environment. Genetic factors determine predisposition to certain conditions.

Possible indicators for this dimension could include:

- *rates of specific genetically determined diseases, e.g. Down syndrome, muscular dystrophy, cystic fibrosis and haemophilia; and*
- *rates of specific birth defects, e.g. congenital anomalies of the heart.*

Source: National Health Performance Framework Report, August 2001.

Under this dimension in the framework, the following issues were considered:

- genetically determined diseases;
- specific birth defects caused by environmental factors;
- blood pressure;
- cholesterol; and
- overweight and obesity.

Genetically determined diseases

Particular anomalies at birth sometimes occur as a result of genetic inheritance from parents (e.g. Down syndrome, cystic fibrosis). The prevalence of these conditions can be reduced by a number of strategies. Higher prevalence for population groups in particular geographic zones may initiate greater efforts to further reduce the future prevalence or to assist in the care of those already affected.

Suggested indicator:

2.5.1: Genetically determined diseases—report both the number and rate of births with genetically determined diseases, including:

- inherited genetic disease (cystic fibrosis, muscular dystrophy) caused by abnormal genes and inherited generation to generation;
- somatic genetic disease (cancer) caused by sudden appearance of a defective gene in a part of the body. Disposition to cancer is inherited through abnormal genes.
- chromosomal aberrations (Down syndrome) due to deviations in chromosomal structures or numbers. They are either inherited or perhaps associated with mother's age at conception. See page 124.

Specific birth defects caused by environmental factors

Anomalies at birth (e.g. neural tube defect, including spina bifida) are influenced by environmental factors (e.g. pollution, radiation, drugs, sickness during pregnancy), and are not a result of genetic inheritance from parents. The prevalence of some of these conditions can be reduced (e.g. through folic acid supplementation for pregnant women in order to reduce prevalence of spina bifida). Understanding of geographic variation for these conditions may help targeting of public health programs to reduce their prevalence.

Suggested indicator:

2.5.2: *Specific birth defects* – the number and rate of births with specific birth defects caused by environmental factors (all defects and also neural tube defects).

See page 125.

Blood pressure

High blood pressure is a major risk factor for coronary heart disease, stroke, peripheral vascular disease and renal failure. The likelihood of high blood pressure can be lowered by reducing excess body weight, exercising, and limiting alcohol and salt intake, while existing high blood pressure can be lowered through the use of medication. Information about variation in the prevalence of high blood pressure across geographic zones could be of use in either targeting public health action to reduce prevalence or in encouraging the greater use of medication.

Results of blood pressure measurements are not available nationally by geographic area. The AusDiab study measured (among other things) blood pressure from a national perspective, but the data are not capable of being used to describe blood pressure at a finer level.

Self-reported data from the National Health Survey may be of some use, but this self-reported data suffers because people who have not been tested are (de facto) not aware that they may have blood pressure outside the normal range. The subsequent statistic can reflect either the prevalence of high (or low) blood pressure, or the likelihood of being tested.

Cholesterol

High blood cholesterol is a major risk factor for coronary heart disease and peripheral vascular disease. Lifestyle changes that prevent or reduce high blood cholesterol include a diet low in saturated fat, physical exercise and losing weight. Identification of greater prevalence of high blood cholesterol levels in some geographic zones may suggest public health action.

Results of biochemistry tests are not available nationally by geographic area. The AusDiab study measured (among other things) cholesterol levels from a national perspective, but the data are not capable of being used to describe cholesterol levels at a finer level. Self-reported data (e.g. from the National Health Survey) underestimates prevalence because people who have not been tested are (de facto) unaware that they may have elevated cholesterol levels.

Overweight and obesity

People who are overweight or obese have a higher risk of ill health including coronary heart disease, stroke, congestive heart failure and Type 2 diabetes. Lifestyle changes at the population level can reduce the prevalence of people who are overweight, and consequently there is value in attempting to identify geographic zones with higher prevalence of overweight for intervention.

Suggested indicator:

2.5.3: *Overweight/obesity* – proportion of persons aged 18 years and over with a body mass index (BMI) in the overweight and obese ranges. See page 126.