Chapter Three
Young People
Chapter 3. YOUNG PEOPLE

PUBLIC HEALTH SERVICES AND
HEALTH INFORMATION CENTRE
YOUNG PEOPLE

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Foreword

The health of the people of Queensland is very good overall and continues to improve. However, recent declines in the amount of physical activity undertaken, poor nutrition, an increase in overweight and obesity, as well as high levels of smoking and alcohol misuse, tell us that this is not a time for complacency. In addition, the increasing inequalities in health and the poor health of Indigenous peoples require specific attention.

In order for us to address these issues, Queensland Health and others whose work impacts on health and wellbeing, need to focus on the areas that will have the greatest gains for all Queenslanders. Information is critical to enable us to make decisions about where to focus and invest.

Health Determinants Queensland 2004 is a key resource in this regard. It provides a summary of the most important factors influencing the health status of Queenslanders today and the areas of potential gain, and highlights the key responses needed to address them. This report brings together indicators of the major behavioural, social, economic and environmental determinants of health and their recent trends in Queensland. In doing so, it provides valuable guidance to government, non-government agencies and the community for improving health and reducing the burden of disease tomorrow and into the future.

It is absolutely clear that the influences on the health of Queenslanders go well beyond the scope of health agencies. All parts of society are and need to be engaged in the effort. Promoting and sustaining the health of the public is one of the most important functions of government and Queensland Health’s new strategic intention highlights this.

Our mission is to promote a healthier Queensland. Our vision is to be leaders in health and partners for life. We will be successful in promoting a healthier Queensland through acting on the following five strategic intents:

- **Healthier staff** – optimise staffing levels, provide staff with the right knowledge and skills, and provide an environment that values their experience and which supports positive ideas to drive innovation, creativity and health enhancements

- **Healthier partnerships** – work with others to harmonise programs and activities that impact on health

- **Healthier people and communities** – promote healthier lifestyles and environments for individuals, families and communities and improve community-based chronic disease management

- **Healthier hospitals** – provide high quality and equitable acute emergency care, integrated with enhanced community-based services

- **Healthier resources** – use finite resources to maximum advantage.

Health Determinants Queensland 2004 provides an information basis from which we can make informed decisions about how to best action each of these intents – what initiatives need to be implemented in which areas to achieve the greatest possible gains in health.

I encourage everyone with an interest in health – which is all of us – to familiarise yourself with the information in this report and to use this information in planning priority setting, and decisions about resource allocation.

Dr Steve Buckland
Director-General
Queensland Health
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**Health Determinants Queensland 2004**

- Chapter 1 Whole of population
- Chapter 2 Children
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- Chapter 4 Older people
- Chapter 5 Indigenous peoples
- Chapter 6 Health service district profiles

**Companion document:**

_Health Determinants Queensland 2004 at a glance._

_Health Determinants Queensland 2004: Statistical report._
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3.1 Young people summary

The health of children and young people has been identified as a target health improvement area in the *Smart State: Health 2020 Directions statement* strategic vision for Queensland Health. Young people aged 15-24 years represent 14% of the Queensland population.

The health of young people is the result of a complex interplay of genetic, social, environmental, economic and cultural factors. The impact of these factors in adolescence affects health in adult life. There is growing evidence that effective nurturing throughout childhood, and the psychosocial transitions to young adulthood, have significant effects on health and wellbeing throughout the life course.

The health status of young people in Queensland is relatively high compared with other age groups and by international comparison. However, some key issues remain:

- poorer health of Indigenous young people
- mental health problems and disorders
- alcohol, tobacco and other drug misuse
- injury
- suicide and self-harm
- inappropriate nutrition
- overweight and obesity
- physical inactivity.

For the first time in Queensland, *Health Determinants Queensland 2004* combines indicators of the major behavioural, social, economic and environmental determinants of health for young people. This report describes the relationship between health determinants and health outcomes. In doing so, it provides: evidence for investment in population health, both in the health sector and across government; priority areas for investment; and interventions which can most improve the health of young people in Queensland.

What is the health status of young people in Queensland?

- In general, Queensland young people are satisfied with the quality of their lives and health. In 2002, young people aged 18-29 years report better quality of life and health status than older age groups. Most young people report satisfaction with their health.
- Two thirds of Queensland’s total Indigenous population is under 25 years of age. Hence, the health of Indigenous children and young people is critical to overall Indigenous health in this state.
- In Australia in 1996, mental health disorders accounted for 55% of the burden of disease and injury in young people. Substance use disorders account for the majority of this burden. In Queensland over the last ten years, hospitalisations for intentional self-harm have increased for both young males and young females.
- Injury is responsible for more deaths of young people in Australia than all other causes combined.
- In Queensland over the past ten years, hospitalisations for diabetes have increased for young people.
- About three quarters of the cases of invasive meningococcal disease are aged less than 25 years; young people aged 15-19 (19% of cases) and 20-24 (11% of cases) years were more likely to contract this disease than all other age groups except children 0-4 years.
- In 1997-2001 in Queensland, rates for hepatitis C notifications in young people aged 20-24 years were consistently higher than rates for the total Queensland population.
- In 1997-2001 in Queensland, nearly two thirds of all diagnosed cases of chlamydia were aged 15-24 years. The highest rate occurred in 15-19 year old females.
Key population groups

Young men

- Road traffic accidents, alcohol dependence and harmful use, anxiety disorders, suicide and self-inflicted injuries, and heroin dependence and harmful use, are the top five causes of burden of disease and injury in young Australian males.
- In Queensland over the past ten years, young men are more likely to die or be hospitalised as a result of an injury, and specifically for road traffic accidents and intentional harm by another, than young women.
- Young males are more likely to commit suicide than young females. However, females were much more likely to be hospitalised for intentional self-harm.
- Young men aged 18-24 years are more likely than young women to have substance abuse disorders. Males have more deaths and hospitalisations due to hazardous and harmful consumption of alcohol and illicit drug use.

Young women

- Depression, anxiety disorders, bipolar affective disorder, alcohol dependence and harmful use, and eating disorders are the top five causes of burden of disease and injury in young Australian females.
- Young women aged 18-24 years are more likely than young men to have affective and anxiety disorders.
- In Queensland over the past 10 years, young females were more likely to be hospitalised for asthma than young males. In Australia, prevalence of asthma is highest in young females aged 15-24 years.
- Young females were much more likely to be hospitalised for intentional self-harm than young males, however males were more likely to commit suicide.
- In Queensland, young females aged 15-19 years were more likely to be diagnosed with Chlamydia than any other male or female age group.

What are the health determinants impacting on young people in Queensland?

Health determinants can be broadly divided into:
- ‘upstream’ (education, employment, income, living and working conditions);
- ‘midstream’ (health behaviours and psychosocial factors); and
- ‘downstream’ (physiological and biological factors).

In this report, the upstream determinants of health for young people are addressed in sections on environmental factors and socioeconomic factors, and midstream determinants in sections on community capacity and health behaviours. The downstream effects are addressed in the health behaviour section.

Socioeconomic factors

- In Queensland in 2002, 85.5% of female students and 77.4% of male students continued from Year 8 to Year 12, which was higher than the national average. In 2002, 55.9% of Indigenous students continued from Year 8 to Year 12, which was also higher than the national average.
- In Queensland in 2001, the weekly income of a quarter of Queensland families was less than $500 per week. The majority (over 80%) of young people aged 15-24 years have an income of less than $500 per week.
Community capacity

- Over 90% of young people in Queensland rated their families as of great importance in their lives. The majority of young people aged 15-29 years reported they were satisfied with their life overall, their personal safety, and their health and home. Young people were least satisfied with their financial situation and connection to their community.
- Young people aged 18-29 years reported higher informal social networks than older people and higher feelings of civic trust than people aged 30-64 years. Young people reported lower community identity and community involvement than other age groups.
- In Queensland in 2002/03, young people aged 15-19 years were the most common victims of crimes. Young males aged 15-19 years were the most common offenders against another person and against property, followed by young males aged 20-24 years.
- In Australia in 2001, 36% of homeless people were estimated to be in the age group 12-24 years.

Health behaviours

- In Queensland in 2001, 13.5% of young people aged 14-17 years smoked daily. Nearly 30% of young males and about 25% of young females aged 18-29 years smoked daily.
- In the state in 2001, about 25% of young males and about 45% of young females aged 14-17 years drank alcohol at hazardous or harmful levels. For young people aged 18-24 years, 52% of males and 65% of females drank alcohol at these levels. In 1999-2001 for young people, there were 61 deaths and 2,955 hospitalisations due to hazardous and harmful alcohol consumption each year. Suicide and road transport accidents were the leading causes of such deaths.
- Young people aged 18-24 years are more likely to report use of illicit drugs than the population as a whole. One quarter of all deaths due to illicit drug use in Queensland was for young people aged 15-24 years. In 1999-2001 for young people, there were 24 deaths and 1,317 hospitalisations due to illicit drug use.
- In Queensland in 2001, about one third of young people were overweight or obese. Almost one in five young people were underweight, with levels three times higher in young females than young males.
- Young people are much less likely than other adult age groups to eat the recommended quantities of fruit and vegetables.
- In Queensland in 2001, just over one half of young people aged 18-29 years undertook sufficient physical activity for a health benefit. Over the past few years, the proportion of young people achieving sufficient physical activity has decreased. There are no current reliable physical activity data for adolescents.
- Young women aged 18-24 years are much less likely than older adult women to have had a Pap smear.
- The level of knowledge and awareness of sun protection issues in Queensland secondary schools is high.

Evidence based strategies which address the determinants of health have the potential to reduce the burden of ill health and premature death in the lives of all Queenslanders, particularly those who are most disadvantaged.
3.2 Introduction

Young people living in Queensland enjoy a quality of life and health that is comparable to, or exceeds that found almost anywhere in the world. Good health is one of Queensland’s greatest assets. The health of Queenslanders generally continues to improve. Despite this overall high standard, it is important to ensure that health is shared equally among all populations in Queensland and that the rate of improvement equals that of other states.

For the purposes of this report, young people are defined as aged 15 to 24 years. In Queensland in 2001, there were 510,031 young people, comprising 14% of the population. The health status of young people in Queensland is relatively high compared with other age groups and by international comparison. However, some key issues remain, such as mental health problems, asthma, alcohol, tobacco and other drugs, injury, suicide, attempted suicide and self-harm, inappropriate nutrition and obesity, physical inactivity, diabetes, and the poorer health status of Indigenous young people.

The factors that lead to someone developing disease are likely to have had their beginnings years earlier, through a complex chain of events fashioned by interactions of the individual, the environment, and broader social and economic factors. Determinants of health is the term used for those factors that have either a positive or negative influence on health at the individual or population level. Health determinants can be broadly divided into ‘upstream’ determinants (education, employment, income, living and working conditions), ‘midstream’ (health behaviours and psychosocial factors) and ‘downstream’ (physiological and biological factors).

Health Determinants Queensland 2004 is the second in a series of Health Indicator reports produced by Queensland Health. This report compiles a consolidated set of indicators of the major behavioural, social, economic and environmental determinants of health and their recent trends in Queensland. Selected health outcome indicators are also reported. This report describes the relationship between the determinants and health outcomes, and recommends some evidence based interventions to improve the health of Queenslanders. More detailed statistics and information are provided in Health Determinants Queensland 2004: Statistical report.

The sequence and scope of indicators in this report are structured following the National Health Performance Framework. This framework has three tiers: Health status and outcomes; Determinants of health; and Health system performance. This framework was chosen for consistency with national and state directions; to help readers access and reference their particular areas of interest; and to better identify challenges and points of intervention. As the focus of this report is determinants of health, limited health outcome indicators are presented. Extensive health outcomes indicators were previously reported for Queensland in the first Health Indicators report, Health Indicators for Queensland. The third tier of the framework, measurement of health system performance, is beyond the scope of this publication. The National Health Performance Framework is included in section 3.6 of this report. An explanation of the terms used in this report, as well as the data sources and limitations are also described in section 3.6.

Health Determinants Queensland 2004 is comprised of five population based chapters, reflecting the life course approach and the age specific nature of health determinants and outcomes. This Young people chapter reports the determinants of health which affect the age group 15-24 years, key health outcomes and interventions to address these determinants. The Whole of population, Children, Older people and Indigenous peoples chapters reflect the health determinants of specific relevance to those populations.

This report provides the burden of disease and injury data for Queensland to allow assessment of the relative impact of conditions and health behaviours on the health of the population. Populations within Queensland with excess mortality, morbidity and prevalence associated with conditions and determinants are also identified. This information is then related to the sociodemographic profile of each health service district to estimate those conditions and health determinants which warrant specific attention. Interventions to address these determinants in each population group are also included in each chapter.

Health Determinants Queensland 2004 provides epidemiological evidence for investment in population health both in the health sector and across government. This evidence will assist policy development...
and decision making on balanced investment in line with national and state priorities. At a health service district level, these reports will complement District population and health status profiles to support decision makers at the local level to identify priority areas for primary prevention and practical interventions where investments can be made.

3.2.1 Life course approach

Health outcomes reflect the accumulation of exposures to both advantageous and disadvantageous experiences and environments over varying stages of life. In recent years, a life course approach to the study of health and illness has helped to explain the existence of wide socioeconomic differentials in adult mortality and morbidity. Evidence suggests that such exposures accumulate throughout life and increase the risk of illness and premature death. Exposure to disadvantageous experiences and environments do not equally impact on all people, or all stages through the life cycle. Some determinants have an immediate impact on health, while other early life or continuous physical and psychosocial exposures have a lag time and manifest in compromised health status later in life.

The Strategic Policy Framework for Children’s and Young People’s Health 2002-2007 reports there is growing evidence that maternal health and wellbeing in the antenatal period, effective nurturing in the early years, early brain development in infancy and early childhood, and the psychosocial transitions to young adulthood, have significant and lasting effects on health and wellbeing in later life. Associations between environmental and social exposures and health status are bi-directional, with a stronger influence of social disadvantage on poor health. The underlying nature of these associations and interactions is not yet fully understood. Some hypotheses indicate that the duration and intensity of exposure to adverse social and environmental determinants and subsequent risk factors are important in selected health outcomes. For example, the risk of adverse effects of smoking is believed to proportionally increase if exposure commences early in life and if duration of exposure reaches older age. Similarly, longer exposures to poor diet, poverty, alcohol and/or a lack of physical activity are all seen to be more strongly predictive of negative health outcomes than shorter exposures. However, removal of some exposures can dramatically alter the course of health outcomes. For example, the adverse health effects of smoking are reduced following cessation of smoking at any age.

The association between intrauterine and neonatal exposures and adverse health outcomes in adults, has been extensively explored. The Barker hypothesis attempts to explain these associations. Some risks for adult health are predetermined at birth. Deficient maternal nutrition can impact on foetal growth and development, and lead to organ impairment and chronic disease later in life. Likewise, low birth weight babies, adjusted for gestational age, have an increased risk of early death and, if they survive, an increased risk of disability and chronic disease during childhood and adult life. Air pollution, urbanisation, residential proximity to mines and factories, occupational exposure to fumes, exposure to cigarette smoking, and inadequate nutrition during childhood and early adulthood have been identified as having potential for lifetime damaging effects and for generating and/or maintaining social class differentials in health.

Chronic illness in childhood, more common in socially disadvantaged groups, can have long term consequences both for health and socioeconomic circumstances in later life. Exclusive breastfeeding to around six months has been identified as a protective factor for emotional wellbeing and chronic diseases such as diabetes and asthma. Slow growth and short adult stature may be a reflection of nutritional status and adverse socioeconomic and psychosocial conditions in childhood. Lifestyle factors such as a high fat diet and lack of physical activity are associated with the development of obesity and pathological cardiovascular lesions as early as four years of age, and certainly by young adulthood. The presence of chronic disease in early life, such as infectious diseases or respiratory illness, can lead to both long term ill health and possible socioeconomic disadvantage later in life as a consequence of disability or unemployment.

The health status of young people in Queensland is relatively high compared with other age groups and when compared with young people internationally. However this age group is particularly vulnerable to the stressors of modern society because they are in transition from childhood to adulthood. Young people are especially vulnerable to homelessness, placing them at risk of physical and mental health problems.
High risk behaviour can also increase the risk of mental health problems such as alcohol, tobacco and drug misuse, and physical health problems such as injury.\textsuperscript{19}

\subsection*{3.2.2 Social determinants of health}

Most of the burden of disease affecting young people and resulting in health problems in later life is the result of complex interactions between individuals and socioeconomic and environmental determinants of their health.\textsuperscript{4} Current epidemiological trends in the health of young people (such as mental health problems, asthma, drug misuse, injuries, suicide and self-harm, inappropriate nutrition, and diabetes) reflect the impact of extensive socio-cultural shifts experienced over recent decades. Issues around economic disadvantage, cultural diversity and tolerance, the changing nature of work and family structures, family violence and homelessness challenge the health system to meet increasingly complex health needs for young people in collaboration with other sectors.\textsuperscript{4}

The greatest burden of ill health is borne by those most disadvantaged in Australia. One of the dominant features affecting the health situation of all industrialised countries is the social gradient in health and disease.\textsuperscript{20} This gradient in health and disease is prevalent in all socioeconomic strata of society. On every rung up the socioeconomic disadvantage ladder from least to most disadvantaged, people experience more sickness, shorter life expectancy and poorer health. People of greater socioeconomic disadvantage experience worse health than those of higher socioeconomic status for almost every major cause of mortality and morbidity.\textsuperscript{21} Moreover, socioeconomic differences in health are evident for both females and males at every stage of the life course. Socioeconomic inequalities in health have been extensively reported for Queensland.\textsuperscript{3} Social and economic disparities are one of the major public health challenges confronting Queensland.\textsuperscript{5}

A safe environment, adequate income, meaningful social roles, secure housing, higher levels of education and social support are all associated with better health and wellbeing\textsuperscript{22-25} In addition to health behaviours, these social, cultural, economic and environmental factors comprise what we call population health determinants and are the focus of this report. While each of these influences is dealt with in a separate section of this report, the interaction of all these factors ultimately determines the health of individuals, families and communities.\textsuperscript{26}

A wealth of evidence supports the strong association between poverty and ill health.\textsuperscript{5,10,19} In Australia, children living in single-parent households and without both biological parents, or with parents with lower formal education and income, are more likely to experience behavioural and emotional problems as well as physical limitations, than their less disadvantaged counterparts.\textsuperscript{27} Socioeconomically disadvantaged adults who are less formally educated or poorly educated experience the highest rates of illness such as cardiovascular disease and diabetes.\textsuperscript{28} They also have the highest prevalence of risky behaviours such as smoking and hazardous use of alcohol.\textsuperscript{28} In addition, income inequality has a significant impact on population health.\textsuperscript{29} Specifically, these inequalities have been correlated with increased all-cause mortality.\textsuperscript{30-32}

While our socioeconomic position connects us to the physical and social resources which can make our life better, the feelings of empowerment and status that go with the connection to these resources are also important. This second dimension is important because people who feel in control of their lives are also more likely to take control of their health.\textsuperscript{33} A lack of control over work and home life has powerful effects on our health.\textsuperscript{20} Like continuing anxiety, feelings of insecurity and social isolation, the psychosocial impact of a lack of control at home or at work accumulate during life and increase the chances of poor mental health, physiological wear and tear and premature death.

Psychosocial factors affect physical health through the stress response. Although the stresses of modern life rarely demand strenuous or even moderate physical responses, turning on the stress response diverts energy and resources away from many physiological processes important to long term health maintenance.\textsuperscript{20} For brief periods, this stress response has minimal impact, however, if people feel tense too often or the tension goes on for too long, they become more vulnerable to a wide range of conditions including infections, diabetes, high blood pressure, heart attack, stroke, depression and aggression. The lower people are in the social hierarchy of industrialised countries such as Australia, the more common these problems become.\textsuperscript{20}
While many population health interventions target lifestyle factors where health gains can be made, the social influences on health behaviours must be considered in both the design and implementation of these interventions. The World Health Organisation identifies with the need to understand the interaction between material disadvantage and social meanings. “It is not simply that poor material circumstances are harmful to health; the social meaning of being poor, unemployed, socially excluded, or otherwise stigmatised also matters.”

As well as income and education, other social factors are also known to affect the health of populations. For example, unmarried and divorced people, and men, have consistently higher age adjusted death rates than married people and women. Additionally, social trends such as the increase in one-parent families, the ageing population and an increase in the age of people starting families are already influencing the economic environment and the health status of the population.

Ethnicity can also influence health outcomes. This may be due to limited service knowledge of services, poor language skills, employment discrimination, an associated low socioeconomic living environment, and the absence of social networks within minority migrant communities and refugees. Genetic determinants may also play a role. For example, racial minorities in Britain experience interpersonal violence, institutional discrimination, or socioeconomic disadvantage, all of which have independent detrimental effects on health, regardless of the health indicator used.

Social determinants of health are often beyond the control of the individual. Addressing them through multidisciplinary efforts at the population level can assist in preventing illness and improving the overall health of the community. While universal access to healthcare is one of the social determinants of health, more important to the health of the population are the social and economic conditions that make people ill and in need of healthcare in the first place.
3.3 Health status and health outcomes

“Although the health status of children and young people in Queensland is relatively high, some key issues remain: significant health differentials, such as the poorer health status of Indigenous children and young people, mental health problems and disorders, abuse and neglect, alcohol, tobacco and other drugs, injuries, suicide, attempted suicide and self-harm, inappropriate nutrition, physical inactivity and obesity.”

Determinants of health are the principal focus of this report. However, an initial overview of the health status and health outcomes for all Queenslanders provides the context for the importance of the health determinants that follow.

The aim of this section is to answer the following questions:

– How healthy are young people in Queensland?
– Is it the same for everyone?
– Where is the most opportunity for improvement from a population health perspective?

These questions are addressed by reporting on indicators of burden of disease, life expectancy, quality of life and wellbeing, disability and deaths, hospital separations and incidence and prevalence of diseases and conditions in National Health Priority Areas.

Actions to address these health needs are described in section 3.5.

3.3.1 Burden of disease

“The leading causes of disease burden for young Australians aged 15 to 24 years are alcohol dependence and misuse, transport related injury, depression, drug dependence and misuse, bipolar affective disorder, suicide and self-harm. Mental health disorders account for more than half of the total disease and injury burden for young people.”

The burden of disease and injury is the sum of the impact to the community of premature mortality, non-fatal outcomes and disability. Aggregating these health status and outcomes measures leads to a more complete understanding of the risks to health than by using mortality and hospital separation statistics alone. The combined burden of fatal and non-fatal health outcomes is represented in a single measure, the Disability-Adjusted Life Year or DALY. The DALY adds together the years of life lost due to premature mortality (YLL) and years of life lost due to disability (YLD). The burden of disease techniques enable us to put health priorities in perspective. Data derived from them can be used to make cost-effectiveness evaluations, rethink service orientation, project infrastructure needs, and guide investment decisions.

In 1996, road traffic accidents, alcohol dependence and harmful use, and anxiety disorders, followed by suicide and self-inflicted injuries, were the main causes of burden of disease among young Australian males aged 15-24 years. Road traffic accidents and suicide involve high mortality, while alcohol dependence and harmful use, and anxiety disorders, involve high disability (Figure 3.1). Young females generally had greater burden of disease related to non-fatal health problems such as depression and anxiety disorders (Figure 3.1).
**3.3.2 Quality of life and wellbeing**

The majority of Queenslanders rate highly their quality of life, health status and satisfaction with health. For more information on quality of life and wellbeing indicators, see *Whole of population* chapter.

**Quality of life**

In 2002, 95.9% of young males aged 18-29 years rated their quality of life as good or very good (Table 3.1). This was significantly higher than males aged 30-64 years (89.7%) and males aged 65 years and older (82.7%). Similarly, 95.3% of young females aged 18-29 years rated their quality of life as good or very good (Table 3.1). This was higher than for females aged 30-64 years (92.2%) and significantly higher than for females aged 65 years and older (87.3%), (Table 3.1).
Self reported health status

In 2002, 86.4% of Queensland adults reported their health as either excellent or good (Table 3.1). Young males aged 18-29 years generally reported better health than older age groups, and reported significantly better health than males aged 65 years and older (Table 3.1). Young females aged 18-29 years reported better health than females aged 65 years and older, although the difference was not significant (Table 3.1). Young males (87.5%) generally reported better health than young females (85.7%), (Table 3.1). People’s perception of their own health has been shown to be a powerful, independent predictor of their survival in several population groups.39-41 This association of self rated health and objective health stands even after controlling for demographic factors, a range of illnesses, disability, personality and social supports.

Table 3.1: Self reported quality of life and self rated health (proportion; 95%CI) by sex and age, Queensland 2002

<table>
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<tr>
<th></th>
<th>Quality of life</th>
<th>Self reported health</th>
<th>Satisfaction with health</th>
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<tbody>
<tr>
<td></td>
<td>Very good or good</td>
<td>Excellent, very good or good</td>
<td>Very satisfied, satisfied</td>
</tr>
<tr>
<td>Persons 18+ years</td>
<td>91.5 (90.3 - 92.6)</td>
<td>86.4 (85.0 - 87.8)</td>
<td>78.7 (77.0 - 80.4)</td>
</tr>
<tr>
<td>Male 18+ years</td>
<td>90.4 (88.7 - 92.1)</td>
<td>85.6 (83.6 - 87.7)</td>
<td>79.5 (77.1 - 81.9)</td>
</tr>
<tr>
<td>Female 18+ years</td>
<td>92.6 (91.0 - 94.7)</td>
<td>87.2 (85.1 - 89.1)</td>
<td>78.0 (75.5 - 80.4)</td>
</tr>
<tr>
<td>Male 18-29 years</td>
<td>95.9 (93.6 - 98.2)</td>
<td>87.5 (83.7 - 91.4)</td>
<td>79.9 (75.3 - 84.6)</td>
</tr>
<tr>
<td>Male 30-64 years</td>
<td>89.7 (87.0 - 91.3)</td>
<td>86.2 (84.0 - 88.8)</td>
<td>79.0 (76.2 - 81.9)</td>
</tr>
<tr>
<td>Male 65+ years</td>
<td>82.7 (77.1 - 88.2)</td>
<td>71.4 (64.8 - 78.1)</td>
<td>77.0 (70.8 - 80.0)</td>
</tr>
</tbody>
</table>

Source: QH Social capital survey 2002

Health and life satisfaction

In 2002, the majority of Queenslanders (78.7%) were satisfied with their health (Table 3.1). Young males aged 18-29 years generally were more satisfied with their health than older age groups, however, the differences were not significant. Young females aged 18-29 years were more likely to be satisfied with their health than females aged 65 years and older, however less likely to be satisfied than females aged 30-64 years (Table 3.1).

In Queensland in 2001, the majority of young people aged 15-29 years reported satisfaction with their health, home, neighbourhood, feelings of safety, and life overall (Table 3.2). However, young people were significantly less likely to report overall life satisfaction (64.6%) than adults aged 30-64 years (67.6%) and adults aged 65 years and older (94.4%), (Table 3.2). Young people were significantly less likely than older age groups to be satisfied with their employment opportunities, financial situation, free time, and feeling part of their community (Table 3.2).
Table 3.2: Satisfaction with life by domain (proportion; 95% CI) by age, persons aged 15 years and older, Queensland 2001

<table>
<thead>
<tr>
<th></th>
<th>15-29 years</th>
<th>30-64 years</th>
<th>65+ years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>64.9 (64.8-65)</td>
<td>60.8 (60.8-60.9)</td>
<td>63.7 (63.3-64.1)</td>
</tr>
<tr>
<td>Home</td>
<td>61.3 (61.2-61.4)</td>
<td>67.1 (67-67.2)</td>
<td>92.3 (92.1-92.5)</td>
</tr>
<tr>
<td>Employment opportunities</td>
<td>46.6 (46.5-46.7)</td>
<td>51.1 (51-51.2)</td>
<td>75.9 (75.6-76.3)</td>
</tr>
<tr>
<td>Financial situation</td>
<td>27.1 (27-27.2)</td>
<td>30.8 (30.7-30.9)</td>
<td>45.9 (45.5-46.3)</td>
</tr>
<tr>
<td>Feelings of safety</td>
<td>72.3 (72.2-72.4)</td>
<td>68.6 (68.5-68.6)</td>
<td>74.2 (73.9-74.6)</td>
</tr>
<tr>
<td>Feeling part of community</td>
<td>32.1 (32-32.2)</td>
<td>41.2 (41.2-41.3)</td>
<td>55 (54.6-55.4)</td>
</tr>
<tr>
<td>Neighbourhood</td>
<td>63 (62.9-63.1)</td>
<td>72.3 (72.2-72.4)</td>
<td>82.8 (82.5-83.1)</td>
</tr>
<tr>
<td>Free time</td>
<td>37.2 (37-37.3)</td>
<td>38.2 (38.1-38.2)</td>
<td>80.2 (79.8-80.5)</td>
</tr>
<tr>
<td>Overall life satisfaction</td>
<td>64.6 (64.5-64.8)</td>
<td>67.6 (67.5-67.7)</td>
<td>94.4 (94.2-94.6)</td>
</tr>
<tr>
<td><strong>Low satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>4.7 (4.7-4.8)</td>
<td>3.7 (3.7-3.7)</td>
<td>2.3 (2.2-2.5)</td>
</tr>
<tr>
<td>Home</td>
<td>5.3 (5.3-5.4)</td>
<td>5.3 (5.3-5.3)</td>
<td>0</td>
</tr>
<tr>
<td>Employment opportunities</td>
<td>9.2 (9.1-9.2)</td>
<td>12.5 (12.4-12.5)</td>
<td>10.6 (10.3-10.8)</td>
</tr>
<tr>
<td>Financial situation</td>
<td>20.2 (20-20.3)</td>
<td>14.6 (14.6-14.7)</td>
<td>16.4 (16-16.7)</td>
</tr>
<tr>
<td>Feelings of safety</td>
<td>1.2 (1.1-1.2)</td>
<td>3.4 (3.3-3.4)</td>
<td>2.4 (2.3-2.6)</td>
</tr>
<tr>
<td>Feeling part of community</td>
<td>12.2 (12-1-12.2)</td>
<td>9.3 (9.3-9.4)</td>
<td>7.2 (7-7.4)</td>
</tr>
<tr>
<td>Neighbourhood</td>
<td>5.1 (5.1-5.2)</td>
<td>3.6 (3.6-3.6)</td>
<td>0</td>
</tr>
<tr>
<td>Free time</td>
<td>16.5 (16.4-16.5)</td>
<td>16.8 (16.7-16.8)</td>
<td>4.6 (4.4-4.7)</td>
</tr>
<tr>
<td>Overall life satisfaction</td>
<td>0.4 (0.4-0.4)</td>
<td>1.1 (1-1.1)</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: HILDA 2001

3.3.3 Activity limitation

In Queensland in 1998, one in ten (10.0%) young people aged 15-24 years reported they had a disability, while one in five (19.9%) Queenslanders overall reported a similar condition. This included people with profound/severe, moderate or mild core activity restrictions, or schooling or employment restrictions. Considering profound or severe core activity limitations alone, the prevalence in young people was 2.3% (females 1.4%, males 3.1%), compared with 6.6% for the total population (females 6.5%, males 6.8%).

Core activities comprise communication, mobility, self care, and tasks relating to school or employment. Considering profound or severe core activity limitations alone, the prevalence in young people was 2.3% (females 1.4%, males 3.1%), compared with 6.6% for the total population (females 6.5%, males 6.8%).

The prevalence of disability increases markedly with advancing age (Figure 3.2).

Figure 3.2: Percentage of population reporting a disability and severe or profound core activity limitation by age, Queensland 1998

In 1998, intellectual and other mental disorders were the most commonly reported main disabling condition for young Australians with a disability aged 15-24 years, accounting for 24.8% of all disabling conditions. Young people are regarded as having activity limitations if they have difficulty doing a particular activity, need help from another person or use an aid. The most commonly reported activity restriction in this age group was limitations in the ability to undertake schooling or employment. Young people with a severe disability may have good health, but their disability may cause limitations on family...
and social activities. Severe disability can impact on the young person’s ability to take on employment, and hence can impact on their socioeconomic status. A disability can affect a young person’s wellbeing, and can impact on the overall wellbeing of parents and siblings.43

Hearing and sight impairment
In Australia in 1998, of all young people aged 15-24 years, just over 0.6% reported having some form of hearing impairment, with 0.09% having a total loss of hearing. Partial loss of vision was reported by 0.5% of young people.43

3.3.4 National health priority area conditions
The seven National Health Priority Areas (NHPA) are asthma, cancer control, cardiovascular health, diabetes mellitus, injury prevention and control, mental health, and arthritis and musculoskeletal conditions. The NHPAs were chosen as priorities for Australia because of the:

– importance of the ‘area’ to the community
– high overall burden of disease in terms of mortality, morbidity and disability
– potential for health gain through prevention or lessening of the impact
– measurability of the impact of interventions undertaken in relation to the ‘area’.

Indicators for key NHPPA conditions are reported in the Whole of population chapter. Further information on NHPA conditions was reported in Health Indicators Queensland 2001.7-9 This Young people chapter reports on those NHPA conditions of particular importance to young people, and identifies potential significant health gains through modification of the determinants of health.

Injury and poisoning
For the purposes of this report, injury and poisoning excludes suicide or self-inflicted harm and complications of medical and surgical care. Suicide and self-inflicted harm are considered under mental health. In 1996, injury and poisoning accounted for 16.6% of the total burden of disease and injury for young people aged 15-24 years in Australia, as measured by DALYs.44

For young males road traffic accidents accounted for 13.0% of burden of disease, while homicide and violence accounted for 1.7%, and other transport accidents and falls each accounted for 1.4%. Sports injuries accounted for only 0.8% of the burden of disease and injury in young males. For young females, road traffic accidents accounted for 4.5% of the total burden of disease and injury.44

In Queensland in 2001, there were 164 deaths due to injury and poisoning among young people aged 15-24 years, of which 79% were male. From 1992 to 2001, mortality rates for males were significantly higher than rates for females (Figure 3.3).

In Queensland in 2001/02, there were 14,774 hospital separations due to injury and poisoning in young people, of which 75% were male. From 1992/93 to 2001/02, the rates of hospital separations were significantly higher for males than females (Figure 3.4).

Figure 3.3: Injury and poisoning in persons aged 15-24 years, age standardised mortality rate by sex, Queensland 1992-2001

![Graph showing injury and poisoning rates by sex in Queensland 1992-2001]
In young people, injury is responsible for more deaths in Australia than all other causes combined. Injury is also a leading cause of hospitalisation of young people. Some groups of young people are more at risk of injuries than others, i.e. young males, young people who live in rural and remote areas, those who are socioeconomically disadvantaged, and Indigenous young people. Risk-taking behaviours often lead to injury and are more common in adolescence and early adulthood than in childhood or adulthood. Such behaviours include driving under the influence of drugs or alcohol, not wearing seatbelts or motorbike helmets, and being involved in physical fights.

**Road transport injury**

In 1996, road transport accidents accounted for 9.1% of the total burden of disease and injury for young people aged 15-24 years in Australia, as measured by DALYs. Road traffic accidents accounted for 13.0% of the total burden for young males and 4.5% of the burden in young females.

In Queensland in 2001, there were 93 deaths due to road transport accidents among young people aged 15-24 years, of which 79.6% were male. From 1992 to 2001, mortality rates for males were significantly higher than rates for females (Figure 3.5). Between 1992 and 2001, mortality rates for road transport accidents significantly decreased for both males and females in Queensland (-4.1% and -7.2% per year respectively; Figure 3.5).

In Queensland in 2001/02, there were 2,565 hospital separations due to road transport accidents in young people, of which 71.7% were male. From 1992/93 to 2001/02, the rates of hospital separations were significantly higher for males than females (Figure 3.6). Between 1992/93 and 2001/02, hospital separation rates for road transport accidents significantly decreased for both males and females in Queensland (-2.4% and -2.9% per year respectively; Figure 3.6).
Homicide and intentional injury by another

In 1996, homicide and intentional injury accounted for 1.2% of the total burden of disease and injury for young people aged 15-24 years in Australia, as measured by DALYs. The burden in males (1.7%) was about three times the burden in females (0.6%).

Between 1992 and 2001, there were 10.7 deaths per year on average due to homicide in young people in Queensland, where the majority were males. During this time, about two thirds (68.2%) of homicides occurred in the 20-24 age group, compared to the 15-19 age group.

In Queensland in 2001/02, there were 1,755 hospital separations due to intentional injury by another in young people, of which 75.1% were male. Between 1992/93 and 2001/02, the rates of hospital separations were significantly higher for males than females.

Figure 3.7: Intentional injury by another in persons aged 15-24 years, age standardised hospital separations rates by sex, Queensland 1992/93-2001/02

Drowning
Between 1992 and 2001, there were 5.1 deaths per year on average due to drowning in young people aged 15-24 years in Queensland. Between 1993 and 2001, no female deaths due to drowning in this age group were recorded in the state.

Mental health
In 1996, mental disorders accounted for 55.2% of the total burden of disease and injury for young people aged 15-24 years in Australia, as measured by DALYs. Almost the entire burden of disease due to mental disorders relates to years of life lost due to disability, rather than mortality. Of all mental disorders attributed to young people, substance use disorders accounted for 31.6%, affective disorders 28.0%, anxiety disorders 20.6%, and schizophrenia accounted for 8.2% of the burden.44

Mental health is the embodiment of social, emotional and spiritual wellbeing. Mental health provides individuals with the vitality necessary to achieve goals and to interact with one another in ways that are respectful and just.47 There is evidence that having strong social support, being free from discrimination and violence, and having a satisfying job provides protection for mental health and wellbeing.48 Unemployed and socially isolated people have higher prevalence of mental health disorders than do people who are employed and socially connected.46

It is acknowledged that mental illness results from complex causal interactions and is influenced by a number of risk and protective factors, as discussed in Community Capacity section 3.4.3. However, there is not an established standard set of indicators with which to measure and monitor these factors. Work is currently underway at national and state levels to define indicative data, integrate data collection tools and coordinate information systems. This section reports on available indicators of incidence and prevalence of mental disorders and illnesses in Queensland.

Mental disorders have defined diagnostic criteria that must be met for a disorder to be diagnosed, including symptoms that cause clinically significant impairment in ability to function. Mental health problems also affect the individual’s ability to function, but are defined at a lower threshold of symptoms than mental disorders.43

Relatively few people die of mental disorders. However, in Queensland in 2001/02, there were 6,982 hospital separations due to mental disorders in young people. From 1992/93 and 2001/02, hospital separation rates were similar for males and females (Figure 3.8).

The age profile of specific mental conditions varies considerably and is reported in the companion document Health Determinants Queensland 2004: Statistical report. Age standardised mental disorders mortality and hospital separation rates for Queensland and 16 smaller geographic areas for 1986-1998 have previously been reported.7-9 Hospital separation rates for mental disorders must be interpreted with caution as variable admission practices and access to services, re-admissions and coding methods substantially affect rates. In addition, hospital separations due to mental disorders represent a very small proportion of the burden of mental disorders in the community.

Figure 3.8: Mental disorders in persons aged 15-24 years, age standardised hospital separations rate by sex, Queensland 1992/93-2001/02

In Australia in 2000, the prevalence of total mental health problems in adolescents aged 13-17 years was about 13% (13.4% in males and 12.8% in females).49 Prevalence was generally higher among adolescents living in low income households or living with parents who were not in paid employment,
step/blended and sole-parent families. The prevalence of depressive disorders was similar in males (4.8%) and females (4.9%). However, the prevalence of conduct disorder was higher in males (3.8%) than females (1.0%), as was the prevalence of Attention-Deficit/Hyperactivity Disorder, (10.0% in males compared to 3.8% in females). The high prevalence of ADHD should be viewed with caution due to methodological issues, however the authors of the study state that it is unlikely that the young people identified with ADHD in the survey were free from problems, and recommend further studies to more accurately address the issue.

In Australia in 1997, 27.1% of young males and 25.9% of young females aged 18-24 years were assessed as having a mental disorder. The subset of mental disorders considered was anxiety disorders, affective disorders, and substance use disorders. Substance use disorders were the most prevalent, affecting about 20% of males and 10% of females. This was followed by anxiety disorders, which affected about 8% of males and 14% of females.

In Australia in 2000/01, the most frequent mental health diagnosis group for young males aged 12-24 years was schizophrenia, accounting for 19% of all hospitalisations for mental and behavioural disorders in this age group. The next most frequent group was depressive episode accounting for 11%. For young females, the most frequent diagnosis group was depressive episode accounting for 17% of all hospitalisations for mental and behavioural disorders in this age group. The next most frequent diagnosis group was eating disorders, accounting for 16% of hospitalisations for all mental and behavioural disorders.

In the context of mental health, risk factors increase the likelihood that a disorder will develop or exacerbate an existing problem. Protective factors reduce the likelihood that a disorder will develop. Risk factors may include those associated with the individual (low birth weight, physical and intellectual disability, chronic illness, low self-esteem); family or social factors (having a teenage mother, absence of father in childhood, family disharmony and violence, neglect in childhood); school context (bullying, inadequate behaviour management); life events (child abuse, family break ups, poverty); and community factors (socioeconomic disadvantage, isolation, neighbourhood violence and crime). Protective factors include supportive caring parents, positive school environment, economic security and a sense of connectedness within the community.

**Suicide and intentional self-harm**

In 1996, suicide and self-inflicted injury accounted for 5.7% of the total burden of disease and injury for young people aged 15-24 years in Australia, as measured by DALYs. The burden in males (9.0%) was about five times the burden in females (1.9%).

In Queensland in 2001, there were 83 deaths due to suicide among young people aged 15-24 years, of which 84.3% were male. From 1992 to 2001, mortality rates for males were significantly higher than rates for females.

In Queensland in 2001/02, there were 1,499 hospital separations due to intentional self-harm in young people, of which 65.5% were female. From 1992/93 to 2001/02, hospital separation rates were significantly higher for females than males. Between 1992/93 and 2001/02, hospital separation rates for intentional self-harm significantly increased for both males and females in Queensland (5.8% and 8.7% per year respectively; Figure 3.9).

**Figure 3.9: Self-harm injury in persons aged 15-24 years, age standardised hospital separation rate by sex, Queensland 1992/93-2001/02**

![Graph showing self-harm injury rates for males and females in Queensland 1992/93-2001/02](Image)
Suicide rates are significantly higher in males than females predominantly due to the means chosen. Because male-completed suicides account for the majority of all suicides, the methods chosen by males have a greater influence on the overall pattern than females, with males traditionally using more lethal means. However, females are more likely to intentionally self-harm than males. Risk factors for suicide and intentional self-harm are similar to those for mental health problems, although one of the best predictors of completed suicide is a previous attempt. Certain biological, family, community or societal characteristics have been shown to be associated with suicidal behaviours, and have a unique ‘attributable’ risk. Male youth suicide rates have been positively correlated with several measures of individualism, including lack of personal freedom and control. Protective factors for young men and women include easy temperament; positive attitude; problem solving; trusting care giver-child relationship; supportive parenting; wider supportive network; and a range of educational and leisure opportunities.

**Asthma**

In 1996, asthma accounted for 2.9% of the total burden of disease and injury for young people aged 15-24 years in Australia, as measured by DALYs. Between 1992 and 2001, there were 2.6 deaths per year on average due to asthma in young people in Queensland. In Queensland in 2001/02, there were 717 hospital separations due to asthma in young people, of which 61.5% were female. From 1992/93 to 2001/02, rates for females were significantly higher than rates for males (Figure 3.10).

**Figure 3.10: Asthma in persons aged 15-24 years, age standardised hospital separations rate by sex, Queensland 1992/93-2001/03**


In 2000, 10.9% of Queenslanders aged 18 years and older reported a diagnosis of asthma that remained a current problem, as determined by symptoms or treatment for asthma in the previous 12 months. The prevalence of self reported asthma in young females aged 18-29 years was 21.6%, compared to young males (7.6%). For more information on asthma in Queensland, please refer to Whole of population chapter.

In Australia in 2003, the prevalence of current asthma was highest between the ages of 5 and 24 years. During childhood, prevalence was consistently higher in boys, however from the age of 15 years, females had higher prevalence. In females, prevalence was highest in the age group 15-24 years, whereas prevalence in males was highest in the age group 5-9 years. Overall, prevalence in children aged 0-14 years was 13.3% and in adults 15 years and older 11.5%.

**Diabetes**

In 1996, diabetes accounted for 0.9% of the total burden of disease and injury for young people aged 15-24 years in Australia, as measured by DALYs.

In Queensland in 2001/02, there were 498 hospital separations due to diabetes (principle cause) in young people, of which 62.1% were female. From 1992/93 to 1999/00, hospital separation rates for females were significantly higher than for males (Figure 3.11).
The prevalence of type 2 diabetes among young people aged 15 to 24 years is historically low, but currently unknown in Queensland. Given the recent increases in childhood and adolescent obesity (a major risk factor for type 2 diabetes), it is highly likely that type 2 diabetes will emerge as a significant health concern in this age group.

Three quarters of Queensland’s young people aged 18-29 years (79.0%) reported a reasonable or good understanding of the basic symptoms and clinical causes of diabetes. For further information on diabetes please refer to Whole of population chapter.

### 3.3.5 Oral health

In 1996, oral health problems accounted for 1.3% of the total burden of disease and injury for young people aged 15-24 years in Australia, as measured by DALYs. For further information on oral health please refer to Whole of population chapter.

### 3.3.6 Health behaviour outcomes

The effect of a health determinant on mortality and hospital separation rates is estimated using aetiological (attributable) fractions. An aetiological fraction is the estimated proportion of cases of the disease that would be eliminated in the absence of the risk factor. Aetiological fractions are available only for four health behaviours, that is, risky alcohol consumption, tobacco smoking, illicit drug use and physical inactivity. Due to small numbers in this younger age group, data for physical activity in young people have not been reported. Mortality rates and hospital separation rates for physical inactivity and insufficient physical activity rise with increasing age after 40 years. For further information on health behaviour outcomes please refer to Whole of population chapter.

### Alcohol

In 1999-2001, there were on average 61 deaths per year attributed to hazardous and harmful alcohol consumption in Queenslanders aged 15-24 years, of which 85% were male. Deaths in the age group 15-24 years represented 7.5% of the 812 deaths attributed to hazardous and harmful alcohol consumption in the total population. Of the deaths attributed to risky alcohol consumption in young people aged 15-24 years (Figure 3.12), suicide was the leading cause (43.2%), followed by driver related incidents (driving 34.0%, pedestrian 9.5%) and assault (5.4%). In each of these conditions, male deaths predominated.

In 1999/00-2001/02, there were on average 2,955 hospital separations per year attributed to hazardous and harmful alcohol consumption in Queenslanders aged 15-24 years, of which 69.1% were male. This represented 14.3% of the 20,912 hospitalisations attributed to hazardous and harmful alcohol consumption in the total population. Young males aged 15-24 years were generally more likely than young females to be hospitalised for each alcohol-related condition (Figure 3.13). The exception was attempted suicide, where young females were more likely to be hospitalised.
Tobacco smoking
In 1999-2001, there were on average 3 deaths per year attributed to tobacco smoking among Queenslanders aged 15-24 years, of which 51.5% were male. In 1999/00-2001/02, there were on average 615 hospital separations per year attributed to tobacco smoking in young Queenslanders aged 15-24 years, 77.3% of which were female, largely related to complications of pregnancy. While smoking is an important risk factor for a number of diseases, the effect of smoking on the health of the individual is accumulated over many years with relatively few immediate impacts in youth.

Illicit drugs
In 1999-2001, there were on average 24 deaths per year attributed to illicit drug use among Queenslanders aged 15-24 years, of which 81.1% were male. Deaths due to illicit drug use in young people represented 25.5% of the 94 illicit drug related deaths in Queensland. Of the deaths attributed to illicit drugs in young people aged 15-24 years, accidental poisoning by narcotics and hallucinogens was the leading cause (42.1%), followed by suicide (30.2%). In 1999/00-2001/02, there were on average 1,317 hospital separations per year attributed to illicit drugs among Queenslanders aged 15-24 years, of which 58.6% were male. Of the hospital separations attributed to illicit drugs in young people, mental and behavioural disorders due to drug use was the leading cause (68.2%), followed by intentional self-harm (9.5%).
3.3.7 Communicable diseases

During 1997-2001 in Queensland, 115,014 notifications of more than 50 different communicable diseases were received. This was an average of 23,003 notifications per year (range: 21,201-24,846). Although notified cases do not represent the total cases in the community, they provide an estimate of the burden of disease. The Notifiable Disease Report 1997-2001 contains detailed analysis of notifiable conditions in Queensland and national comparisons.

Care needs to be exercised in drawing conclusions from trends in the numbers of notifications. With some conditions, the figures can be highly indicative of temporary or long term changes in incidence but this cannot be applied to all conditions. Factors influencing numbers of notifications differ from condition to condition. Such factors include: the symptomatic to asymptomatic ratio; the proportion of those becoming ill seeking medical advice; the physician’s diagnostic skill; and the seriousness of the condition and its public health implications. The selection and timing of tests, the pathology laboratories’ success in establishing the diagnosis, and even the lack of successful transport media from remote communities in north Queensland can also play a role. Awareness programs directed at the public or physicians, and the development of new and better tests may also have an influence on notification rates.

More information on communicable diseases is available in the Whole of population, Children and Indigenous peoples chapters of this report.

Invasive meningococcal disease

About 100 cases per year of invasive meningococcal disease (IMD) are notified in Queensland, similar to the national rate. Year to year fluctuations in case numbers and deaths are typical of this disease. About three quarters of cases are in people aged less than 25 years, with young children aged less than five years (36%), teenagers (15-19 years, 19%) and young adults (20-24 years, 11%) comprising the largest groups. The rates of IMD in young people are consistently higher than rates in the total population (Table 3.3). Cases occur throughout the year, although winter to early spring is the peak season. Cases are mostly sporadic, as outbreaks or related cases occur infrequently.

Table 3.3: Notification rates invasive meningococcal disease by age and sex, Queensland 1997-2001

<table>
<thead>
<tr>
<th>Age group</th>
<th>Sex</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19 years</td>
<td>Male</td>
<td>4.7</td>
<td>10.8</td>
<td>3.8</td>
<td>5.2</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>5.8</td>
<td>5.7</td>
<td>9.5</td>
<td>5.5</td>
<td>9.4</td>
</tr>
<tr>
<td>20-24 years</td>
<td>Male</td>
<td>3</td>
<td>0.8</td>
<td>5.4</td>
<td>5.4</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>0.8</td>
<td>4.7</td>
<td>3.2</td>
<td>1.6</td>
<td>5.6</td>
</tr>
<tr>
<td>Total (all ages)</td>
<td></td>
<td>2.1</td>
<td>3.1</td>
<td>2.6</td>
<td>1.9</td>
<td>3.6</td>
</tr>
</tbody>
</table>


In Queensland, the two most common types of the bacterium isolates of IMD are serogroup B (about 50% of cases annually) and serogroup C (about 36% of cases annually). Serogroup C is more common in southern states of Australia. In recent years, serogroup C has been more common in late teen and young adult age groups. The case fatality rate averages about 9%, but varies from year to year. Serogroup C cases have a higher risk of death, as do cases presenting with septicaemia. The risk of death generally increases with the delay in presenting to hospital for treatment.

The risk of infection is higher in individuals exposed to cigarette smoke, both active and passive smoking. Close contacts, in particular household contacts of cases, have a small but significant increased risk of infection.

In 2004, the National Meningococcal C Vaccination Program was commenced in Queensland. The aim is of the program to protect Australian children and adolescents against meningococcal C disease. All children, adolescents and young adults born on or after January 1984 are being progressively offered free vaccine. With good vaccination coverage, this program could be expected to prevent 10 to 15 cases of IMD per year in Queensland.
Blood-borne conditions

Between 1997 and 2001, blood-borne conditions such as hepatitis B, C, D and E (not hepatitis A) comprised more than 15% of all notifications in Queensland, with hepatitis C the third most commonly notified condition (12%).

Between 1997 and 2001, hepatitis C notification rates for young people aged 20-24 years were consistently higher than the rates for the total population (Table 3.4). During 1997-2001, notification rates for hepatitis C in the Queensland total population ranged between 80-94 cases per 100,000 people, with Queensland rates generally below the national rates (which ranged between 84-112 cases per 100,000 people). Fluctuations in rates relate more to changes in screening and detection patterns than a change in the burden of disease. Hepatitis C was more commonly reported in males than females (1.8:1), and 81% of cases in the total population were reported in the age group 20-44 years.

Annual notification rates should not be used to estimate year of acquisition, as it is not possible to differentiate between chronic and acute infections. Within Queensland, rates were highest in the Southern Zone, with rates generally increasing over time. Annual notification rates should not be used to estimate trends in incident cases, as information on recency of infection is not collected.

Between 1997 and 2001, hepatitis B notification rates in young people aged 15-24 years were consistently higher than the rates for the total population (Table 3.4). There were 800-930 cases of hepatitis B in the total Queensland population notified annually (3.4% of all notifications) in the reporting period. Males outnumbered females 1.3:1. People aged 15-39 years comprised 63% of all cases. Between 1997 and 2001, annual rates in Queensland varied between 23 and 27 cases per 100,000, lower than the national rates (38-45 cases per 100,000). Over the same period, notification rates for acute cases ranged between 1.2 and 1.6 cases per 100,000 people in Queensland, slightly less than national rates of 1.4 to 2.2 cases per 100,000 people. Rates in north Queensland were more than twice the Queensland rate, although there were small numbers overall.

In 2003, a range of 24% to 59% of Queensland adults could correctly identify potential risk factors for hepatitis C. There remains considerable ignorance and confusion regarding risk factors for acquiring blood-borne hepatitis C and hepatitis A (not blood-borne), which is of concern for health policy makers and service providers.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Age group</th>
<th>Sex</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B (incl Hep C)</td>
<td>15-19 years</td>
<td>Male</td>
<td>44.8</td>
<td>51.5</td>
<td>63.2</td>
<td>67.5</td>
<td>65.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>63.2</td>
<td>63.4</td>
<td>84.3</td>
<td>88.5</td>
<td>77.5</td>
</tr>
<tr>
<td></td>
<td>20-24 years</td>
<td>Male</td>
<td>172.4</td>
<td>167.4</td>
<td>253.3</td>
<td>268.7</td>
<td>244</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>105.8</td>
<td>115.5</td>
<td>134.6</td>
<td>154.1</td>
<td>149.3</td>
</tr>
<tr>
<td>Total (all ages)</td>
<td></td>
<td>Male</td>
<td>84.5</td>
<td>80.5</td>
<td>87.4</td>
<td>93.7</td>
<td>87.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>41.7</td>
<td>49.9</td>
<td>54.2</td>
<td>36.3</td>
<td>31.1</td>
</tr>
<tr>
<td></td>
<td>20-24 years</td>
<td>Male</td>
<td>46.7</td>
<td>44.5</td>
<td>48.7</td>
<td>52.5</td>
<td>40.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>41.2</td>
<td>45.1</td>
<td>51</td>
<td>45.5</td>
<td>35.9</td>
</tr>
<tr>
<td>Total (all ages)</td>
<td></td>
<td>Male</td>
<td>26.1</td>
<td>27.3</td>
<td>25.3</td>
<td>26.4</td>
<td>22.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>34.1</td>
<td>43.1</td>
<td>43.8</td>
<td>36</td>
<td>25.1</td>
</tr>
</tbody>
</table>


Note: Rates per 100,000 population

Sexually transmitted conditions

Between 1997 and 2001, chlamydia infections were the most commonly notified sexually transmitted infection (STI) in Queensland (nearly a quarter of all notifications). It is recognised that notifications significantly underestimate burden of disease, as 70% or more of infections in women, and at least 50% of infections in men, are asymptomatic. Notifications increased significantly each year during this period in Queensland and throughout Australia. The increases are largely due to improved case ascertainment, resulting from improved testing methods, increased awareness of the disease, and screening programs (particularly the Indigenous Urinary PCR Screening Program).

From 1997-2001, 64% of notified cases of chlamydia in Queensland were aged 15-24 years. Highest rates were among 15-19 year old females (Table 3.5), and those living in north Queensland (2.5-3 times higher than the state). Notification rates were highest in areas of higher Indigenous population (up to 25 times more), reflecting at least in part, active screening programs. Safer sex practices (particularly among young people) are required to reduce the incidence of chlamydial infections. Early detection and treatment of cases and their contacts is vital to control this STI.
In 2001, gonococcal infections were the seventh most commonly notified condition accounting for 4.6% of all notifications in Queensland. From 1997-2001, 54% of notified cases of gonorrhoea in Queensland were aged 15-24 years. During this time, notification rates ranged between 27.5 and 32.4 per 100,000 people. National rates were similar at 25.3-33.4 per 100,000. As with chlamydial infections, highest rates were reported in north Queensland, but unlike chlamydia, male to female ratio for gonorrhoea was reversed (1.5:1). Highest rates in males were in the 20-24 age group; while highest rates in females were in the 15-19 age group (Table 3.5). Notification rates were highest in areas of higher Indigenous population (up to 35 times more). Limited enhanced surveillance of gonococcal infections indicates that one risk group for gonococcal infections are men who have sex with men.

In 2002, there were 117 new HIV notifications. The number of cases of people living with HIV/AIDS in Queensland is increasing each year due to better treatment and outcomes for cases. The peak year for notifications of new AIDS diagnoses in Queensland was 1995, with 102 new cases, the highest number since was in 1997 (119 cases). By 2002, new diagnoses had declined to less than half the cases from 1995. Males have predominated in each year comprising more than 90% of new HIV/AIDS diagnoses. More than 40% of new male AIDS cases were aged 30-39 years, and more than 30% aged 40-49 years. Since 1993, there has been a slow but continuous increase in the proportion of AIDS cases who are late presenters. There was an increase in sero-converters in 2002, and this has been most marked in the 20-29 age group. In 2002, the number of cases living with HIV/AIDS that were receiving treatment declined from 42% in 2001 to 30%, most likely reflecting a desire to delay starting treatment as long as possible. In 2002, there was also an increase in the number of people never on treatment.

### Table 3.5: Notification rates of selected sexually transmitted infections by age and sex, Queensland 1997-2001

<table>
<thead>
<tr>
<th>Disease</th>
<th>Age group</th>
<th>Sex</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydia - all forms</td>
<td>15-19 years</td>
<td>Male</td>
<td>157.3</td>
<td>208.2</td>
<td>227.2</td>
<td>261.7</td>
<td>287</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>705.5</td>
<td>694.7</td>
<td>793.1</td>
<td>848.8</td>
<td>1,071.2</td>
</tr>
<tr>
<td></td>
<td>20-24 years</td>
<td>Male</td>
<td>304.2</td>
<td>357</td>
<td>386.2</td>
<td>444</td>
<td>444</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>694.7</td>
<td>747.5</td>
<td>781.1</td>
<td>817.6</td>
<td>985.2</td>
</tr>
<tr>
<td></td>
<td>Total (all ages)</td>
<td></td>
<td>103.1</td>
<td>117.9</td>
<td>127.4</td>
<td>138.3</td>
<td>157.9</td>
</tr>
<tr>
<td>Gonorrhoea - all forms</td>
<td>15-19 years</td>
<td>Male</td>
<td>91.2</td>
<td>119.9</td>
<td>132.4</td>
<td>139.4</td>
<td>97.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>121.5</td>
<td>121.1</td>
<td>149.6</td>
<td>96.4</td>
<td>132.3</td>
</tr>
<tr>
<td></td>
<td>20-24 years</td>
<td>Male</td>
<td>117.5</td>
<td>125.1</td>
<td>134.4</td>
<td>138.2</td>
<td>139</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>81.7</td>
<td>84.6</td>
<td>92.4</td>
<td>92.6</td>
<td>78.2</td>
</tr>
<tr>
<td></td>
<td>Total (all ages)</td>
<td></td>
<td>27.5</td>
<td>32.4</td>
<td>33.7</td>
<td>31.9</td>
<td>30.9</td>
</tr>
</tbody>
</table>

Note: Rates per 100,000 population

### Vaccine preventable conditions

Over the five year period 1997-2001, notifications of measles, mumps, rubella and pertussis in Queensland have decreased, although pertussis peaks were observed in 1997 and 2001 (Table 3.6). These decreases can be attributed to successful vaccination programs, which have resulted in high coverage rates among Queensland children and young people.

### Table 3.6: Notification rates of selected vaccine preventable diseases by age and sex, Queensland 1997-2001

<table>
<thead>
<tr>
<th>Disease</th>
<th>Age group</th>
<th>Sex</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measles</td>
<td>15-19 years</td>
<td>Male</td>
<td>11.8</td>
<td>0.8</td>
<td>0</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>19.1</td>
<td>0</td>
<td>2.4</td>
<td>1.6</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>20-24 years</td>
<td>Male</td>
<td>6</td>
<td>0.8</td>
<td>1.5</td>
<td>3.1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>12.4</td>
<td>2.4</td>
<td>2.4</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>Total (all ages)</td>
<td></td>
<td>7.9</td>
<td>1.0</td>
<td>0.9</td>
<td>0.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Rubella</td>
<td>15-19 years</td>
<td>Male</td>
<td>77.1</td>
<td>59.9</td>
<td>25.6</td>
<td>1.5</td>
<td>16.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>28.9</td>
<td>25.2</td>
<td>6.4</td>
<td>3.1</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>20-24 years</td>
<td>Male</td>
<td>49.7</td>
<td>41.5</td>
<td>24.7</td>
<td>3.1</td>
<td>34.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>27.2</td>
<td>15.8</td>
<td>8.0</td>
<td>3.2</td>
<td>8.8</td>
</tr>
<tr>
<td></td>
<td>Total (all ages)</td>
<td></td>
<td>15.8</td>
<td>10.8</td>
<td>4.5</td>
<td>1.3</td>
<td>3.8</td>
</tr>
<tr>
<td>Pertussis</td>
<td>15-19 years</td>
<td>Male</td>
<td>62.1</td>
<td>44.6</td>
<td>36.9</td>
<td>9.6</td>
<td>73.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>69.1</td>
<td>64.2</td>
<td>30.2</td>
<td>25.1</td>
<td>79.9</td>
</tr>
<tr>
<td></td>
<td>20-24 years</td>
<td>Male</td>
<td>21.1</td>
<td>25.3</td>
<td>13.1</td>
<td>6.2</td>
<td>19.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>23.3</td>
<td>22.9</td>
<td>19.9</td>
<td>8.0</td>
<td>26.3</td>
</tr>
<tr>
<td></td>
<td>Total (all ages)</td>
<td></td>
<td>55.9</td>
<td>40.3</td>
<td>27.4</td>
<td>15.0</td>
<td>45.8</td>
</tr>
</tbody>
</table>

Note: Rates per 100,000 population
In the past, rates for measles were highest in the age group 0-4 years. However, rates for all groups have fallen dramatically between 1997 and 2001. A national Measles Control Campaign was implemented in 1998 targeting primary school age children in Australia. During the campaign, about 96% of Australian primary school children were immunised. These children will now be entering adolescence and are at much lower risk of contracting measles. In 2002, young adults aged 18-30 years were also offered free measles/mumps/rubella vaccine.

In the five year reporting period 1997-2001, almost half (49%) of rubella notifications in Queensland occurred in 15-24 year olds. The highest notification rates in 2001 occurred in males aged between 20 and 24 years. Improved immunisation in children and lower rates overall have led to an increase in the median age of rubella infection.

Rubella is more common in males than females because selective vaccination for females preceded universal vaccination. In 1971, a schoolgirl rubella vaccination program was commenced in Australia in order to protect young women entering the childbearing years. Although rubella is generally a mild disease, its effect in pregnant women is not. Maternal rubella infection in the first 8-10 weeks of pregnancy results in fetal damage in up to 90% of affected pregnancies. Combined measles/mumps/rubella vaccination for both sexes replaced the schoolgirl rubella program in 1993.

Vaccination has led to a considerable reduction in rubella and congenital rubella syndrome (CRS) in Australia. In 2002, national notification rates for rubella were the lowest on record and there were no notified cases of CRS between 1997 and 2002. However, two infants with CRS were reported in Queensland in 2003. These cases occurred in young mothers, one who had missed rubella vaccination because of illness and one whose vaccination status was unknown.

The notification of two cases of CRS in Queensland serves as a warning that high coverage with the first dose of MMR vaccine needs to be maintained and improved uptake of the second dose is needed. As rubella transmission is still occurring in young adults, maintenance of programs to detect and vaccinate non-immune females of child-bearing age is critical, through screening of females planning pregnancy and through antenatal/postnatal programs. High quality surveillance data are also required to determine whether immunity is sufficient to prevent further cases of rubella and CRS. If rubella continues to circulate in young adults, consideration may need to be given to adult vaccination programs.

Epidemics of pertussis (whooping cough) occur every three to four years. In recent years among highly immunised populations, many cases of pertussis have occurred in adolescents and young adults whose immunity has waned. These individuals (particularly young parents) then become a reservoir of infection for infants and young children. Immunisation of adolescents, who have a high risk of pertussis infection, and adults in contact with very young infants, would be expected to result in the greatest health benefits. In Queensland, a school based pertussis vaccination program was commenced in early 2004 targeting Year 10 students, and 15-year-olds within general practice.
3.4 Health determinants

“Most of the burden of disease affecting children and young people and culminating in health problems in later life is the result of complex interactions between individuals and socioeconomic and environmental determinants of their health. Health policy, programs and services which address the determinants of health are necessary to prevent the occurrence, and reduce the burden of illhealth.”

Strategic Policy Framework for Children’s and Young People’s Health 2002-2007

The factors that lead to someone developing disease or a mental disorder are likely to have their beginnings years earlier, through a complex chain of events and interactions among the individual, the environment and broader social and economic factors. Determinants of health is the term used for those factors that have either a positive or negative influence on physical and mental health at the individual or population level.

The aim of this section is to answer the following questions:

– Are the factors that determine good health for young Queenslanders changing for the better?
– Is it the same for everyone?
– Where and for whom are these factors changing?

Health determinants can be broadly divided into ‘upstream’ determinants (education, employment, income, living and working conditions), ‘midstream’ (health behaviours and psychosocial factors) and ‘downstream’ (physiological and biological factors). In this section, the upstream determinants are addressed in sections on environmental factors and socioeconomic factors, and midstream determinants in community capacity and health behaviour sections. Environmental, socioeconomic and community capacity dimensions impact on physical and mental health within the spheres of societal or community, household and individual determinants of health.

As this report focuses on modifiable determinants of health, the person-related factors dimension of the National Health Performance Framework is not included. All determinants of health indicators are reported in the domain where there is the greatest opportunity for health gains. Thus, physiological and biological factors which may be partially addressed through behaviour change have been included in the health behaviour section of this report.

Actions to address these health determinants are described in section 3.5.
3.4.1 Environmental factors

Queenslanders enjoy a relatively healthy physical environment. We have one of the safest food supplies in the world, the overall quality of our air and drinking water is good, and the built environment is generally clean and healthy. The quality of the physical environment cannot be taken for granted however, because there are regional differences.

Population health status is influenced by the interaction of social, economic and environmental health determinants.\(^7\) The biological, physical and chemical environments have the potential to impact on health. The extent of this impact is modified by the scale and nature of human activities. Human activities include agricultural, industrial and energy production; the use and management of water and wastes; urbanisation; the quality of health services; and the extent of the protection of the living, working, and natural environment.

The impact of environmental factors on population health outcomes is difficult to assess due to the multifactorial nature of many of the outcomes of importance. Thus, indicators relating exposure to environmental determinants and processes to manage such exposures are commonly used to measure the influence of the environment on health, rather than health outcomes indicators. The need for environmental health indicators was highlighted by the National Environmental Health Strategy (1999).\(^7\) Development of a national set of environmental health indicators is occurring. In future, indicators to monitor environmental health and quality data to support these indicators should be more readily available and more clearly defined.

For information on some key environmental factors that influence health, such as air quality, water quality, water fluoridation, food safety and security, healthy food access, physical activity environment, housing, household safety devices and homelessness, please refer to Whole of population chapter. Specific environmental factors relating to Indigenous health are described in the Indigenous peoples chapter.

There are other less well characterised environmental factors that have the potential to impact on health. Many of these factors have evolved from changes in our society and present new potential health risks. These include the changes in the way we manage our waste, changes in construction materials for our housing, issues relating to securing adequate and safe water supplies, increased urbanisation and urban densities, and global climate change resulting from increased greenhouse gas emissions. The extent to which these emerging issues impact on the environment and population health is not well characterised.
3.4.2 Socioeconomic factors

“Social and economic status is a significant determinant of health and well-being at the population level. There are striking health and developmental disparities associated with socioeconomic disadvantage, and the lower placed individuals are on the socioeconomic gradient, the more likely they are to suffer from physical and mental ill-health.”

Evidence shows that health is linked to socioeconomic position, with the socioeconomically disadvantaged having higher mortality rates for most major causes of death. Their morbidity pattern indicates they experience more ill health and their use of healthcare services suggests they are less likely to act to prevent disease or to detect it at an asymptomatic stage. Socioeconomic indicators for young people are reported in this section and build on those reported in section 1.4.2 in Whole of population chapter.

Income

In 2001, more Queensland males (52.3%) than females (27.0%) were in the higher income categories (greater than $500 per week: Table 3.7). The income of the majority of young people aged 15-24 years (males 81.3% and females 86.8%) had an income of less than $500 per week. Considering the lowest income bracket, young females (66.5%) were more likely than young males (61.9%) to earn less than $300 per week (Table 3.7).

Table 3.7: Percentage individual income ($ weekly) received by age group and sex, Queensland 2001

<table>
<thead>
<tr>
<th>Weekly income ($)</th>
<th>15-24 years</th>
<th>15+ years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>&lt;300</td>
<td>61.9</td>
<td>66.5</td>
</tr>
<tr>
<td>300-499</td>
<td>19.4</td>
<td>20.3</td>
</tr>
<tr>
<td>500-999</td>
<td>17.1</td>
<td>12.8</td>
</tr>
<tr>
<td>1000-1499</td>
<td>1.1</td>
<td>0.4</td>
</tr>
<tr>
<td>1500+</td>
<td>0.4</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Source: ABS Census of population and housing 2001

Table 3.8: Percentage of people who reported running out of food and being unable to afford to buy more, in past 12 months, by age and sex, Queensland 2001

<table>
<thead>
<tr>
<th>Age group</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>18+ years</td>
<td>5.5</td>
<td>6.6</td>
</tr>
<tr>
<td>18-24 years</td>
<td>13.9</td>
<td>8.1*</td>
</tr>
</tbody>
</table>

Source: ABS Census of population and housing 2001

*Relative SE of the estimate = 25-50% of the estimate
**Education**

“They will be able to participate in and shape community, economic and political life in Queensland and the nation. They will be able to engage confidently with other cultures at home and abroad.”

In Queensland in 2002, the Year 8 to Year 12 apparent retention rate for young females was 85.5%, which is 4.8% higher than the national average. The rate for young males was 77.4%, which is 7.6% higher than the national average. The Year 8 to Year 12 apparent retention rate for Indigenous students increased from 52.1% in 2001 to 55.9% in 2002. Although these rates are low compared with non-Indigenous students, the apparent retention rate for Queensland Indigenous students continues to exceed the Australian Indigenous retention rate by about 20%.

Education is an important indicator for young people aged 15-24 years because they are at an age when compulsory education finishes and further education and training for the workforce commences. Completion of secondary education is increasingly seen as a prerequisite for full participation in many aspects of adult life, including the workforce. Young people without appropriate education are considerably disadvantaged.

Generally people with low education levels have poorer health status, and are more vulnerable in terms of employment and managing change. Young people who experience a safe and supportive school environment have an increased sense of connectedness to their school and community. This sense of belonging is protective against a range of health issues including depression, violence, unsafe sexual activity, and alcohol, tobacco and substance misuse.

**Employment**

In Queensland in 2001, 47.6% of young males aged 15-24 years and 35.5% of young females were employed full-time. Conversely, 47.4% of young females and 31.9% of young males were employed part-time. Similar proportions of males and females were unemployed and seeking work.

| Table 3.9: Labour force status by age and sex, Queensland 2001 |
|-----------------|-----------------|-----------------|-----------------|
|                  | 15-24 years     |                  | 15+ years       |
|                  | Male | Female | Male | Female |
| Total labour force (% of total population, aged 15+ years) | 69.7 | 66.4 | 70.9 | 55.6 |
| Not in labour force (% of total population, aged 15+ years) | 30.3 | 33.6 | 29.1 | 44.4 |
| Employed: working full-time (% of labour force) | 47.6 | 35.5 | 69.4 | 45.5 |
| Employed: working part-time (% of labour force) | 31.9 | 47.4 | 18.9 | 44.3 |
| Total employed (% of labour force) | 83.3 | 86.1 | 91.2 | 92.5 |
| Total unemployed (% of labour force) | 16.7 | 13.9 | 8.8 | 7.5 |

Source: ABS Census of population and housing 2001

Over recent years, substantial changes have occurred in the youth labour market, in particular an increased participation in education and hence a later entry into the full-time labour market. Participation in part-time work has been increasing. In Australia in 2002, the proportion of young people aged 15-19 years who were unemployed and not in full-time education was 4.4%, and the proportion of young people aged 20-24 years who were unemployed and not in full-time education was 6.0%. In 2002, about 60% of employed young people aged 15-19 years were employed in elementary clerical, sales, service provision and labouring jobs. About 66% of young people aged 20-24 years were employed as intermediate and elementary clerical, sales and service workers, tradespersons and labourers.

Employment is an important socioeconomic indicator of health and wellbeing. Youth suicide and mental health have been associated with unemployment. Unemployed young people have higher behavioural risk factors (such as tobacco smoking, alcohol consumption and cannabis use) than employed young people.
3.4.3 Community capacity

"Social cohesion in communities and families is an important determinant of health status, with factors such as poor access to social support and networks, marginalisation and isolation having lasting negative effects on physical and emotional wellbeing."

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The health and wellbeing of Queenslanders is generally enhanced by social participation and community life. Current evidence indicates that active, participant directed communities are healthy places to live. Furthermore, health outcomes are more likely to be maximised when government and communities work together in partnership. This requires support for communities to develop the capacity to become active partners in the process. This includes involvement in identifying relevant health determinant issues, and planning, implementing and evaluating activities to address these issues.

While the impact of community factors on population health is generally accepted, a standard set of indicators to measure and monitor community capacity is yet to be established. This section reports on available indicators of social capital, safety and crime, homelessness, family relationships and community participation, and computer and Internet access. Because there is considerable interaction and overlap among determinants, some community capacity indicators are reported in other sections of this document. For example, socioeconomic indicators such as income, education and employment are reported in section 3.4.2, and demographic indicators in the Health service district profiles chapters. This suite of community capacity indicators is incomplete due to lack of data or limited quality data, such as some community support services. It is envisaged that in future, indicators to monitor community capacity and quality data to support these indicators will be more clearly defined and more readily available. For more information on community capacity refer to Whole of population chapter.

Adolescence is a period of physical, emotional and social development. Young people are forming their own identity, and relationships with a network of friends and acquaintances become progressively more important. The transition from childhood to adulthood is also a vulnerable time, when the risk of poverty, unemployment and homelessness can predispose young people to social isolation and marginalisation.

Social capital

In Queensland in 2002, the majority of people aged 18 years and older (83.1%) felt people in their neighbourhood were willing to help one another (Table 3.10). Young people aged 18-29 years were less likely to feel they belonged in their neighbourhood compared to people 40 years and older. They also were less likely to feel that people in their neighbourhood could be trusted, compared to people 50 years and older. Young people were less likely to have worked on something to improve their neighbourhood than people aged 40 years and older, and compared to people in the age range 30-49 years, they were less likely to have volunteered. However, young people were significantly more likely than older people (50 years and older) to report participating in informal social networks. The social capital survey conducted by Queensland Health in 2002, included the questions listed in Table 3.10 and is more fully described in Whole of population chapter. Based on the Social Capital Index© used in this survey, there was an age gradient across a number of domains.

Table 3.10: Selected variables reflecting social capital concepts (95% CI), proportion of population aged 18 years and older, by sex, Queensland 2002

<table>
<thead>
<tr>
<th>Variable</th>
<th>18+ years (95% CI)</th>
<th>18-29 years (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>People in my neighbourhood are willing to help one another*</td>
<td>79.2 (76.4-82.1)</td>
<td>73.3 (67.1-79.5)</td>
</tr>
<tr>
<td>I feel like I belong in this neighbourhood*</td>
<td>83.8 (81.2-86.4)</td>
<td>74.0 (67.9-80.1)</td>
</tr>
<tr>
<td>Most people in my neighbourhood can be trusted*</td>
<td>71.9 (68.7-75.1)</td>
<td>63.0 (56.3-69.7)</td>
</tr>
<tr>
<td>I enjoy living among people of different lifestyles*</td>
<td>85.4 (82.9-87.9)</td>
<td>88.7 (84.2-93.1)</td>
</tr>
<tr>
<td>I have worked with others on something to improve my neighbourhood**</td>
<td>40.2 (36.7-43.7)</td>
<td>28.2 (22.0-34.5)</td>
</tr>
<tr>
<td>I have been actively involved in volunteer activities intended to benefit my community**</td>
<td>52.4 (48.9-56.0)</td>
<td>42.1 (35.3-49.0)</td>
</tr>
<tr>
<td>How often do you actively participate in any social activities with friends or neighbours in your own community**</td>
<td>71.4 (68.6-74.7)</td>
<td>81.2 (75.9-86.5)</td>
</tr>
</tbody>
</table>

Source: ABS Census of population and housing 2001

*agree / strongly agree  **often or sometimes  ***monthly or more frequently
Family relationships and community involvement

In Queensland in 2001, 77% of the population was living in a family household. Of these, 59% were living in couple family households with children, 25% were living in couple family households without children, 14% were in one-parent family households and the remaining 1% were described as living in 'other' family households. There were a total of 73,566 male dependent students aged 15-24 years living in private households. Similarly there was a total of 75,049 female students aged 15-24 years living in private households.\(^7\)

In Queensland in 2001, over 90% of young people aged 15-29 years rated their families as of great importance in their lives.\(^8\) This rating was similar to national figures for young people and for other age groups in Queensland. Young people also rated their health and leisure activities as of great importance. Health was similarly rated in other age groups, while in adults and older people, home was third most frequently rated as of great importance. The majority of young people aged 15-29 years reported they were satisfied with their lives overall (64.6%) and with their personal safety (72.3%). Young people were least satisfied with their financial situation (27.1%) and community connectedness.\(^9\)

In Australia in 2001, most young people expressed satisfaction with their relationships with partners and parents.\(^4\) Less than 5% reported they were dissatisfied with their relationship with parents. However, about 20% were dissatisfied with their relationship with a step-parent.\(^4\)

Connectedness to community is enhanced by community involvement. In Australia in 2002, 28.1% of young people aged 18-24 years reported undertaking voluntary work in the previous 12 months. The most popular voluntary work was connected to sport and hobby groups (11.2%).\(^5\) Young people aged 18-24 years were more likely (69.3%) than older age groups to have participated in or attended sport or physical activities in the three months prior to the survey. The majority of young people (88.9%) had visited a café, restaurant or bar in the previous three months, and 81.3% had attended movies, theatre or concerts.\(^8\)

Australian data indicate that although the majority (82.9%) of young people aged 18-24 years are likely to turn to a family member for support in times of crisis, this age group is also much more likely than other age groups to turn to a friend for support (81.5%).\(^5\) In Australia in 2002, personal stressors experienced by young people aged 18-24 years in the previous 12 months included: not being able to get a job (24.6%), death of family member or close friend (20.5%), serious illness (13.1%), alcohol or drug related problems (12.6%), and mental illness (8.5%).\(^8\)

The period of transition from childhood to adulthood is an important yet vulnerable period. The young person must undertake the transition from school to higher education or employment.\(^3\) Adolescence is a period of physical, emotional and social development. It is also a time of changing relationships with family and friends, with peers becoming progressively more important. In recent decades, families and communities have undergone significant changes which have added to the stressors associated with transition. Young people must also make important decisions regarding their future education, careers and lifestyles during this transition period.\(^4\)

Of the social environments that influence young people's behaviour, family and school environment are the most important.\(^4,8\) Connectedness to parents and family as well as to school reduces a young person's risk of emotional distress and risk-taking behaviour, including attempted suicide.\(^4,8,5\)

Computer and Internet access

In Queensland in 2001, nearly half the population used computers at home. Young people aged 15-24 years were most likely to have computer access, (56.7% of young males and 58.1% of young females), compared to 43.5% for males and 42.2% for females in the total Queensland population.\(^7\) The increasing prevalence of computers and the Internet means that people who are not able to use or access these facilities may have restricted access to information and services, skills development, and special offers and savings. This may adversely affect educational outcomes, employment prospects and other aspects of wellbeing.\(^4\) There are however, health concerns about the excessive use of computers particularly among children and young people, resulting in sedentary activity and causing/compounding the problems of being overweight and obese.

Teenage pregnancy

In 2000, of 48,524 births in Queensland, 22 births were to mothers aged under 15 years and 3,161 (6.5%) were to mothers aged 15-19 years.\(^8\) On average, Indigenous women give birth at younger age groups than non-Indigenous women.\(^8\) Infants born to women under the age of 20 years who were single, separated or divorced, Aboriginal, or who smoked during pregnancy were at increased
risk of being premature or of low birthweight. They may also experience a higher occurrence of developmental delay, lower academic achievement, and behavioural problems. They are at greater risk of substance abuse, and of becoming teenage parents themselves.

There are ongoing implications for a teenage mother, such as long term unemployment, poorly paying job options, lack of school qualifications and poor psychosocial outcomes. Teenage pregnancies follow a socioeconomic gradient. Risk factors for teenage pregnancy include family situations with regular conflict between members, violence and sexual abuse in childhood, unstable housing arrangements, poor school performance, low socioeconomic background, family history of teenage pregnancies, low maternal education, father’s absence, and low self-esteem. Family support, school connectedness and retention, improved employment opportunities, sexuality education, and building self-esteem, are important strategies for addressing the issue of teenage pregnancy.

Safety and crime

In 2002, the majority of Queenslanders aged 15 years and older (82.5%) felt very safe at home during the day and 73% felt safe at home alone after dark, slightly higher than for Australia as a whole. Males generally felt safer than females. Young people aged 15-24 years felt safer than all ages during the day, but not after dark.

In Queensland in 2002/03, of all age groups, young females aged 15-19 years were the most common victims of offences against another person, with 1,862 victims per 100,000 population. The next most common victim group was young males also aged 15-19 years (1,741 victims per 100,000). Offences against another person include assault, sexual offences, robbery and homicide.

In Queensland in 2002/03, of all age groups, young males aged 15-19 years were the most common offenders against another person with 2,095 offenders per 100,000 population. Next were young males aged 20-24 years (1,991 offenders per 100,000). Of all women, young females aged 15-19 years were the most likely to commit an offence against another person (674 offenders per 100,000 population).

In Queensland in 2002/03, of all age groups, young males aged 15-19 years were most likely to commit offences against property with 16,809 offenders per 100,000 population. Next were young males aged 20-24 years (9,321 offenders per 100,000 population). Young males aged 15-24 years were more than four times more likely to be offenders against property than young females. Offences against property include unlawful entry, arson, property damage, unlawful use of a motor vehicle and handling stolen goods.

Crime and safety issues for young people are related to their health and wellbeing. Young people are at relatively high risk of both being a victim of criminal activity and of committing criminal activity. The level of criminal activity among young people can be seen as an indication of lack of support by society in general. Risk factors for involvement in juvenile crime include family factors (lack of parental supervision, child abuse and neglect), difficulty at school, peer group pressure, unemployment and socioeconomic disadvantage, substance abuse and youth homelessness. Where young males are socioeconomically disadvantaged, their lack of employment and income may cause them to have underlying feelings of humiliation. They can become extremely sensitive to real or imagined attacks on their self-esteem, and such feelings can manifest as violence against society. This behaviour is more evident in societies where there are large income differentials.

Homelessness

In Australia in 2001, 36% of homeless people were estimated to be in the age group 12-24 years (representing a total of 36,173 people). In the age group 12-18 years, slightly more females than males were homeless, although the pattern is reversed in the age group 19-24 years. This indicator is reported more fully in Whole of population chapter.
3.4.4 Health behaviours

“The focus is on addressing the determinants of health, decreasing risk factors and increasing protective factors for children and young people within the context of the family, community, society and the environment.”

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Health risk factors such as physical inactivity, being overweight, smoking, excessive alcohol consumption, hypertension, high blood cholesterol and insufficient fruit and vegetable consumption are responsible for a substantial proportion of the overall burden of disease in Australia.44 Indicators of some major risk factors relevant to young people are reported below and where possible the health impact of these behaviours is described. Section 3.5 describes some interventions to address these key health behaviours.

More information on health behaviours can be found in the Whole of population chapter.

Tobacco smoking

In Queensland in 2001, among young people aged 14-17 years, about one in seven smoked daily (Table 3.11). This is similar to Australian figures.103 In 1998, young females aged 18-29 years (35.3%) were more likely than females of other ages to smoke. By 2001, the proportion of smokers in this age group had decreased to 25.6%. In 1998, 24.8% of young males aged 18-29 years smoked daily. By 2001 the proportion had increased to 29.8% (Table 3.11). The changes in smoking prevalence for males and females between 1998 and 2001 were not statistically significant.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male 1998 (95%CI)</th>
<th>Male 2001 (95%CI)</th>
<th>Female 1998 (95%CI)</th>
<th>Female 2001 (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18+</td>
<td>25.1 (21.7-28.5)</td>
<td>22.6 (19.8-25.4)</td>
<td>18+</td>
<td>24.6 (21.5-27.7)</td>
</tr>
<tr>
<td>14-17</td>
<td>11.5 (9.6-14.9)</td>
<td>19.7 (10.4-29)</td>
<td>14-17</td>
<td>13.5 (2.9-24.1)</td>
</tr>
<tr>
<td>18-29</td>
<td>24.8 (18.7-30.9)</td>
<td>35.3 (29.7-40.9)</td>
<td>18-29</td>
<td>29.8 (21.3-38.3)</td>
</tr>
<tr>
<td>30-39</td>
<td>32.6 (25.3-39.9)</td>
<td>26.4 (20.9-31.9)</td>
<td>30-39</td>
<td>32.5 (24.9-40.1)</td>
</tr>
<tr>
<td>40-49</td>
<td>31.9 (22.7-41.1)</td>
<td>23.2 (15.6-30.8)</td>
<td>40-49</td>
<td>27.1 (19.6-34.6)</td>
</tr>
<tr>
<td>50-59</td>
<td>23.7 (13.7-33.7)</td>
<td>20.5 (12.1-28.9)</td>
<td>50-59</td>
<td>18.9 (12.2-25.6)</td>
</tr>
<tr>
<td>60-64</td>
<td>18.1 (4.3-31.9)</td>
<td>4.1 (-2-10.2)</td>
<td>60-64</td>
<td>17.5 (7.8-27.2)</td>
</tr>
<tr>
<td>65+</td>
<td>8.6 (1.8-15.4)</td>
<td>6.5 (1-11.7)</td>
<td>65+</td>
<td>10.6 (5.5-15.7)</td>
</tr>
</tbody>
</table>


In Australia in 1999, a survey102 of tobacco use among secondary students found that the prevalence of current smoking (smoking on at least one day of the week prior to survey) was 21% in young males aged 15 years, and 24% in young females aged 15 years. By the age of 17 years, the prevalence was 33% and 30% respectively for males and females. Trends in smoking prevalence indicate that there was a significant decrease in the prevalence of smoking among 12-15-year-old students between 1996 and 1999. However, among 16-17-year-old students, there was no significant change in prevalence in the same time period.102

Ease of access to tobacco products is an important factor in the uptake of smoking in young people.103,104 In Australia in 1996, it was estimated that 47% of 12-17 year old smokers had purchased their last cigarette as a result of illegal sales. Preventing onset of regular smoking in adolescents is an important component of any comprehensive anti-smoking strategy.103 Nicotine is highly physically addictive and many adult smokers became addicted in their youth.43 If young people do not use tobacco, they are unlikely to take up tobacco smoking later in life. However, many young people may experiment with tobacco due to peer group pressure and other influences.43 Young people who do less well academically and who have a lower self-image are more likely to smoke than other young people.43,104
Alcohol

In Queensland in 2001, 25.7% of males aged 14-17 years drank hazardous or harmful levels of alcohol (6.6% for hazardous and 19.1% for harmful), lower than the Australian average of 29.0% (Table 3.12). The corresponding figure for females aged 14-17 years was 45.6% in Queensland, higher than the national average of 40.6%. In the age group 18-24 years, 65.4% of females reported usually drinking hazardous or harmful quantities of alcohol, compared to 52.1% of males. The greater prevalence in females than males, and the increased prevalence in Queensland compared to Australia, were not significantly different (Table 3.12).

Table 3.12: Percentage of the population aged 14 years and older who usually drank either low, hazardous or harmful quantities of alcohol in the 12 months prior (95%CI), by age and sex, Queensland and Australia 2001

<table>
<thead>
<tr>
<th>Level</th>
<th>14-17 years</th>
<th>18-24 years</th>
<th>18-29 years</th>
<th>18+ years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Queensland Male</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>36.2 (21.3 - 51.1)</td>
<td>38.4 (25.7 - 51.1)</td>
<td>44.9 (35.6 - 54.2)</td>
<td>57.4 (53.8 - 61.0)</td>
</tr>
<tr>
<td>Hazardous</td>
<td>6.6 (-1.1 - 14.3)</td>
<td>26.3 (14.8 - 37.8)</td>
<td>24.5 (16.5 - 32.5)</td>
<td>14.8 (12.2 - 17.4)</td>
</tr>
<tr>
<td>Harmful</td>
<td>19.1 (6.9 - 31.3)</td>
<td>25.8 (14.3 - 37.3)</td>
<td>22.8 (15.0 - 30.6)</td>
<td>13.5 (11.0 - 16.0)</td>
</tr>
<tr>
<td><strong>Queensland Female</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>26.6 (13.7 - 39.5)</td>
<td>22.9 (14.7 - 31.1)</td>
<td>29.7 (23.4 - 36.0)</td>
<td>48.0 (44.9 - 51.1)</td>
</tr>
<tr>
<td>Hazardous</td>
<td>15.3 (4.8 - 25.8)</td>
<td>21.9 (13.9 - 29.9)</td>
<td>23.7 (17.8 - 29.6)</td>
<td>16.6 (14.3 - 18.9)</td>
</tr>
<tr>
<td>Harmful</td>
<td>30.3 (16.9 - 43.7)</td>
<td>43.5 (33.9 - 53.1)</td>
<td>33.4 (26.9 - 39.9)</td>
<td>12.1 (10.0 - 14.2)</td>
</tr>
<tr>
<td><strong>Australia Male</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>30.2 (25.2 - 35.2)</td>
<td>41.7 (37.5 - 45.9)</td>
<td>46.6 (43.4 - 49.8)</td>
<td>60.3 (58.9 - 61.7)</td>
</tr>
<tr>
<td>Hazardous</td>
<td>9.5 (6.3 - 12.7)</td>
<td>19.3 (15.9 - 22.7)</td>
<td>18.1 (15.6 - 20.6)</td>
<td>12.7 (11.8 - 13.6)</td>
</tr>
<tr>
<td>Harmful</td>
<td>19.5 (15.1 - 23.9)</td>
<td>26.8 (23.3 - 30.6)</td>
<td>24.3 (21.5 - 27.1)</td>
<td>11.8 (10.9 - 12.7)</td>
</tr>
<tr>
<td><strong>Australia Female</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>25.9 (21.2 - 30.6)</td>
<td>26.1 (22.9 - 29.3)</td>
<td>32.3 (29.8 - 34.8)</td>
<td>49.3 (46.1 - 50.5)</td>
</tr>
<tr>
<td>Hazardous</td>
<td>15.2 (11.4 - 19.0)</td>
<td>23.8 (20.7 - 26.9)</td>
<td>24.8 (22.5 - 27.1)</td>
<td>17.2 (16.3 - 18.1)</td>
</tr>
<tr>
<td>Harmful</td>
<td>25.4 (20.8 - 30.1)</td>
<td>34.9 (31.4 - 38.4)</td>
<td>27.8 (25.4 - 30.2)</td>
<td>10.1 (9.4 - 10.8)</td>
</tr>
</tbody>
</table>

Source: National drug strategy household 2001

In Australia in 1999, a survey of secondary school students aged 12-17 years found that the proportion of students who drank alcohol in the week prior to the survey (defined as current drinkers) was 22% at 13 years of age and 55% at 17 years of age. Hazardous drinking was defined as eight or more drinks in one day for boys, and six or more drinks in one day for girls. Of current drinkers aged 12-15 years, 12% of boys and 13% of girls had drunk at hazardous levels in the previous week. Of current drinkers aged 16-17 years, 38% of young males and females had drunk at hazardous levels in the preceding week. Spirits were the most common type of drink consumed by drinkers of all ages. Across all age groups, 15% of young males and 12% of young females purchased their last alcoholic drink. About 38% of young males and 32% of young females indicated their parents gave them their last drink. The three main places where students chose to drink were the family home, a friend’s home or a party.

Research into Australian drinking patterns has found that drinking by 14-25 years olds is the area of greatest concern. Young people are at increased risk in relation to alcohol related injury, including road trauma, violence, sexual coercion, falls, accidental death (including drowning), and suicide. The ability of young people to cope with alcohol is reduced by their physical size and stage of development. Despite this, research in Australia over the past two decades shows that more young people are; drinking alcohol, drinking at an earlier age, and increasingly adopting high risk drinking patterns such as binge drinking. Binge drinking can cause immediate bowel, central nervous system and psychological problems. Binge drinking also increases the risk of injury in young people.

Alcohol is physically addictive and most adult alcoholics became dependent in their youth. Addiction and high long term alcohol use leads to major physical health, mental health and social problems.

Illicit drugs

In Queensland in 2001, young females aged 18-24 years were significantly more likely to report use of illicit drugs than other female age groups, in the 12 months prior to survey (Table 3.13). Young males aged 18-24 years were significantly more likely to have used illicit drugs than males aged 40 years and older (Table 3.13). Young males (42.4%) were more likely than young females (32.2%) to have reported using any illicit drugs (Table 3.13).
In Australia in 1999, a survey of secondary school students aged 12-17 years found that analgesics were the most commonly used substance (licit or illicit) among secondary students. In the month prior to survey, use of analgesics was significantly higher for females than males for all age groups. About 42% of students had used analgesics in the week prior to the survey. Cannabis was the most commonly used illicit substance among secondary students, with 29% of all secondary students reporting the use of cannabis at some time in their life. Around fourteen percent of students had used cannabis in the month prior to the survey, while 8% had used it in the week prior to survey. Approximately one in four (26%) of students had ever used inhalants, with use more common among younger students. Nearly one in eight students reported having had some experience with amphetamines, and 7% of students had some experience with hallucinogens. A small proportion of students (4%) had ever used opiates such as heroin or morphine, 4% reported ever having used cocaine, and 4% of students had ever used ecstasy.

The use of illicit drugs especially during early adolescence, can interfere with normal cognitive, emotional and social development. Introduction to and increased use of illicit drugs is often due to both a genetic predisposition, and to family and peer group influences. A warm and supportive family environment with appropriate supervision and control throughout adolescence may reduce the risk of illicit drug initiation.

Healthy weight

In Queensland in 2001, young people aged 18-29 years were the age group most likely to self report being in the acceptable weight range based on Body Mass Index (BMI). Just over one third (34.8%) of young people reported being overweight (26.9%) or obese/severely obese (7.9%). Conversely, almost one in five (17.6%) young people self reported being underweight (BMI less than 20), significantly higher than other age groups. The prevalence of self reported underweight was three times higher in young females than young males. Body weights below the healthy weight range may be a sign of current or impending health problems, including the eating disorders anorexia and bulimia.

In Australia in 1995, by physical measurement, 54.88% of males and 49.66% of females aged 19-24 years were in the acceptable weight range category. For Australian adults aged 19 years and older, people aged 19-24 years had the highest proportion of people in the acceptable weight range category. Young people aged 19-24 years also had the highest proportion of people in the underweight category, with females (20.4%) being almost three times as likely to be underweight compared to males (7.4%). Young males aged 19-24 years were more likely to be overweight or obese (37.6%) than young females (26.0%).

Australia and Queensland are experiencing an epidemic of overweight and obesity in the entire population. A general pattern has become apparent in populations as they modernize. Obesity first becomes most prevalent in middle-aged females, then in middle-aged males, then in young adults and finally in adolescents and children. Australia has currently moved into phase four of this cycle. Despite obesity having strong genetic determinants, the genetic composition of the population does not change rapidly. Therefore, the large increase in obesity in recent years must reflect changes in non-genetic factors. The underlying determinants of the current epidemic of obesity are related to environmental, technological, social and economic changes in society. Urban design, ready availability of inexpensive and heavily marketed energy-dense foods and drinks, globalisation, our reliance on cars, and consumer changes, have all contributed to reduced physical activity and to increased consumption of energy-dense foods. In the long term, adult mortality is increased up to two-fold in those who were overweight or obese as adolescents.

Adolescence is a time when young people are increasingly making their own food and nutrition choices. They may be leaving the family home and needing to prepare their own meals. At this time, young people are at risk of developing unhealthy eating habits, either severely limiting their food intake, or choosing...
foods with high levels of fats and sugars and little nutritional value. Eating habits established in this age group may persist in adulthood. Adolescents are also at an age when they can become obsessive about body image and their physical appearance, including body weight.43

Nutrient intake

The National Health and Medical Research Council recommend that for children above the age of five years, and adults who are not overweight, a fat intake of 30 percent of total calories from fat is desirable, with no more than 10% coming from saturated fat.118 In Australia in 1995, young males aged 16-18 years consumed 34.2% of energy as fat and young females consumed 33.2% of energy as fat, higher than the recommended levels (Table 3.14). A similar level of fat consumption was seen in young people aged 19-24 year olds (Table 3.14). In both 16-18 year olds and 19-24 year olds, saturated fat intake was in excess of the recommended 10% of total fat intake (Table 3.14). Dairy milk was a major contributor of saturated fat, providing 30-40% of the saturated fat intake for children aged 12-18 years, decreasing for adults aged 19 years and over.112,118 While reducing total fat intake is not all that is required to deal with the current epidemic of overweight and obesity, it does play a major role. A high fat diet is very energy dense, contributing to an excess energy intake and the development of obesity.118

Table 3.14: Median contribution of carbohydrate, protein, total starch and total sugars (kJ) as a percentage of total energy (J) by age and sex, Queensland 1995

<table>
<thead>
<tr>
<th></th>
<th>16-18 years</th>
<th></th>
<th>19-24 years</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Persons</td>
<td>Male</td>
</tr>
<tr>
<td>Protein</td>
<td>16.3</td>
<td>14.9</td>
<td>15.3</td>
<td>15.9</td>
</tr>
<tr>
<td>Total fat</td>
<td>34.2</td>
<td>33.2</td>
<td>34.2</td>
<td>33.6</td>
</tr>
<tr>
<td>Saturated fat</td>
<td>14.2</td>
<td>14.6</td>
<td>14.2</td>
<td>13.8</td>
</tr>
<tr>
<td>Monosaturated fat</td>
<td>12.1</td>
<td>12.2</td>
<td>12.1</td>
<td>11.7</td>
</tr>
<tr>
<td>Polyunsaturated fat</td>
<td>4.2</td>
<td>3.6</td>
<td>4.0</td>
<td>4.1</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>46.7</td>
<td>47.6</td>
<td>47.0</td>
<td>47.7</td>
</tr>
<tr>
<td>Total sugars</td>
<td>21.4</td>
<td>26.2</td>
<td>23.9</td>
<td>23.3</td>
</tr>
<tr>
<td>Total starch</td>
<td>21.7</td>
<td>23.9</td>
<td>22.3</td>
<td>24.7</td>
</tr>
</tbody>
</table>

Source: ABS National nutrition survey 1995

Recommended dietary intakes (RDI) for use in Australia list the levels of essential nutrients, based on the best available scientific knowledge, to meet the nutritional needs of practically all healthy people. The RDI applies only to population group needs (age and sex). They exceed and are not synonymous with the nutritional requirements of most individuals.118

In Queensland in 1995, substantial proportions of young people aged 16-24 years potentially did not meet recommended daily intakes for a number of key micronutrients (Table 3.15). The RDI used in this analysis were as recommended in 1991 and are currently under revision. It is quite likely that some nutrients, particularly folate, may be changed. Due to methodological limitations, a more accurate measure of the proportion of Queenslanders who consume the recommended daily intake of these micronutrients cannot be assessed. Specifically, for young females aged 16-18 years, only 25% met or exceeded the RDI for vitamin A (retinol equivalent) and calcium, and only 10% of females in this age group met or exceeded the RDI for zinc. Vitamin A is required for cell differentiation, growth and vision, calcium is a major component of bones and teeth, and zinc has a major role in protein and carbohydrate metabolism including growth, sexual maturation and wound healing. For young males aged 16-18 years, only 50% met or exceeded the RDI for vitamin A (retinol equivalent) and calcium. For young females aged 19-24 years, only 25% met or exceeded the RDI for vitamin A (retinol equivalent), calcium, iron and zinc. For young males aged 19-24 years, 50% met or exceeded the RDI for vitamin A (retinol equivalent) and calcium (Table 3.15).112 Additional information about macro- and micro-nutrient intake in Queensland is available from the Health Information Centre, Queensland Health.
Table 3.15: Percentage (%) of young people who met or exceeded recommended daily intake of micronutrients by age and sex, Queensland 1995

<table>
<thead>
<tr>
<th></th>
<th>16-18 years</th>
<th></th>
<th>19-24 years</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Vit. A retinol equivalent</td>
<td>50</td>
<td>25</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td>Folate</td>
<td>75</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>75</td>
<td>75</td>
<td>50</td>
<td>75</td>
</tr>
<tr>
<td>Calcium</td>
<td>50</td>
<td>25</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td>Iron</td>
<td>75</td>
<td>50</td>
<td>90</td>
<td>25</td>
</tr>
<tr>
<td>Zinc</td>
<td>75</td>
<td>10</td>
<td>50</td>
<td>25</td>
</tr>
</tbody>
</table>

Source: ABS National nutrition survey 1995
Note: Calculated by QH
The RDI used in this analysis were as recommended in 1991 and are currently under revision. It is quite likely that some nutrients, particularly folate, may be changed.

Fruit and vegetable consumption

In Queensland in 2001, only 8.5% of young people aged 18-29 years self reported consuming four or more serves of vegetables per day, significantly less than all other adult age groups (Table 3.16). Young people were also less likely than other adult age groups to self report consuming two or more serves of fruit per day (Table 3.16).110

The Australian Guide to Healthy Eating recognises the importance of fruits and vegetables in a healthy diet for all sections of the population, and recommends consumption of three to four servings of fruit and four to nine servings of vegetables per day for adolescents aged 12-18 years, depending on preferred eating patterns. For adults, the guide recommends five to eight servings of vegetables and two to four servings of fruit, depending on preferred eating patterns.119 Current self reported intakes of fruit and vegetables for young people fall well below these recommendations.

Table 3.16: Daily serves of vegetables and fruit (self reported; 95% CI) in persons aged 18 years and older by age, Queensland 2001

<table>
<thead>
<tr>
<th>Age</th>
<th>% consumed four or more serves of vegetables</th>
<th>% consumed two or more serves of fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-29</td>
<td>8.5 (5.9-11.2)</td>
<td>38.7 (34.1-43.4)</td>
</tr>
<tr>
<td>30-39</td>
<td>15.6 (12.7-18.5)</td>
<td>47.8 (43.8-51.8)</td>
</tr>
<tr>
<td>40-49</td>
<td>14.0 (11.4-16.5)</td>
<td>44.7 (41.1-48.3)</td>
</tr>
<tr>
<td>50-59</td>
<td>21.3 (17.8-24.8)</td>
<td>53.5 (49.2-57.6)</td>
</tr>
<tr>
<td>60-69</td>
<td>24.4 (20.2-28.6)</td>
<td>59.1 (54.3-63.9)</td>
</tr>
<tr>
<td>70 +</td>
<td>25.3 (20.6-30.0)</td>
<td>63.1 (58.0-68.1)</td>
</tr>
</tbody>
</table>

Source: QH Omnibus survey 2001

Milk consumption

The Australian Guide to Healthy Eating119 recommends three or three to five serves per day (depending on preferred eating patterns) of foods from the milk, yoghurt and cheese group for adolescents aged 16-18 years. For adults aged 19-60 years, the Guide recommends two to three serves for females and two to four serves for males.

In the 1995 National Nutrition survey, intake of foods from this group was low in females aged 16-18 years, with 44% consuming less than one serve on the day of the survey and only 12% consuming three serves or more. In Queensland in 2001, skim or low fat milk was usually drunk by 47.4% of young females aged 18 to 29 years. In contrast, only 33.3% of young males usually drank skim or low fat milk. These data suggest that while young females are choosing low fat milks, they are not consuming enough foods from the milk, yoghurt and cheese group to meet the recommended intakes.110,112

Physical activity

In Queensland in 2001, just over one half (50.6%) of young people aged 18-29 years undertook ‘sufficient’ physical activity for a health benefit.120 A greater proportion of young males (about 58%) undertook sufficient physical activity compared to young females (about 40%). Young people were less likely to report no physical activity (sedentary) than older age groups. In Queensland in 2001, 9.2% of young people reported sedentary behaviour. However, between 1997 and 2001, the proportion of young people achieving sufficient physical activity decreased from 61.1% to 50.6%. This age group showed the largest decline of all age groups in this four-year period.120
Consistent with national guidelines,\textsuperscript{121} in this 2001 survey, sufficient physical activity for health benefit was defined as more than 150 minutes or more per week, using the sum of walking, moderate-intensity and vigorous intensity activity (weighted by two), accrued over at least five sessions of activity per week. This time and intensity is deemed as sufficient for a health benefit. Insufficient physical activity is defined as some physical activity but not sufficient physical activity. Sedentary behaviour or no physical activity is defined for measurement purposes as no leisure time physical activity in the one week period prior to survey.

Unfortunately, there are no current reliable physical activity data on trends in adolescents. This has a particular importance as adolescence and young adulthood are times when participation in physical activity tends to decline, with sedentary leisure activities such as computer use and television watching displacing physical activity. This potentially establishes lifelong patterns of sedentariness, as behaviour patterns in adolescence tend to extend into adulthood.\textsuperscript{122,123}

Physical inactivity has been identified as a serious problem for young people.\textsuperscript{124} Sufficient physical activity has been associated with a range of health benefits including reduced risk of death from all causes; reduced mortality and morbidity associated with cardiovascular disease; reduced incidence of Type 2 diabetes; reduced risk of colon and breast cancer; improvement and maintenance of musculoskeletal health; improved mental health; and reduced risk of obesity.\textsuperscript{120}

Cervical screening

The Queensland Cervical Screening Program reported that more than half (56.7\%) of Queensland women aged 20-69 years undertook a Pap smear test as a screen for cervical cancer in 2001-02, as registered by the Queensland Pap Smear Registry. The target age group for Pap screening is 20 to 69 years, and screens are advised every two years. Almost all women aged 20-69 years reported they had ever heard of a Pap screen, and have ever had a Pap screen in 1995 and 2001 (Table 3.17). Women aged 18 to 24 years were less likely than older women to have had a Pap screen in 1995 and 2001. The percentage of young women aged 18 to 24 years who have ever had a Pap smear increased slightly from 1995 (66.6\%) to 2001 (67.7\%), (Table 3.17).

<table>
<thead>
<tr>
<th>Year</th>
<th>Ever heard of a Pap smear</th>
<th>Ever had a Pap smear</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>98.3</td>
<td>94.0</td>
</tr>
<tr>
<td></td>
<td>95.6</td>
<td>66.6</td>
</tr>
<tr>
<td>2001</td>
<td>99.1</td>
<td>99.1</td>
</tr>
<tr>
<td></td>
<td>98.6</td>
<td>98.6</td>
</tr>
</tbody>
</table>

Table 3.17: Percentage of women self reporting Pap screening by age, Queensland 1995, 2001


Sun protection

In Queensland in 1999, over three quarters of students from Year 7 to Year 12 reported they had experienced sunburn during the previous summer.\textsuperscript{125} A higher proportion of male students (33\%) than female students (21\%) reported they usually or always wore a hat. Caps were the preferred choice of head cover worn by students across all year levels. Almost two thirds of female students (60\%) reported they usually or always applied sunscreen during peak UV times, compared to less than half of male students (43\%). While about 20\% of students reported usually or always wearing clothes that covered most of their body, more than half (58\%) of female students reported they sometimes deliberately wear less clothing to increase sun exposure.\textsuperscript{125}

The level of knowledge and awareness of sun protection issues in Queensland secondary schools is high.\textsuperscript{126} However, in general, sun safety has a relatively low priority compared to other health issues. In the previous three years, most schools surveyed reported they had built seating under existing shade trees (74.8\%), moved seats and tables to areas of shade (86.9\%), and/or provided shade at sporting carnivals and other outdoor events (94.5\%). Most schools (82.9\%) reported that sunscreen was made available to students on specific occasions such as sports days and excursions.\textsuperscript{126}
3.5 Interventions to address the burden of disease

The work of many government and non-government agencies, industry and community groups impacts directly and indirectly on the health of Queenslanders. *Health Determinants Queensland 2004* has been produced to assist these organisations to gain a clearer understanding of the determinants and risks of ill health, as well as the broader social implications to the whole population and specific target groups. The interventions outlined build upon the Queensland Health directions statement *Smart State: Health 2020 Strategic Vision for Queensland Health*.

There is now good evidence that a range of interventions are effective in preventing disease, illness and injury, and in promoting health and wellbeing through action on the broad range of determinants of health and ill health. The key challenges are to ensure these initiatives are ongoing and widespread, and at a level sufficient to achieve broad based population-wide outcomes as well as reduce health inequalities across population subgroups.

Since population health issues are being addressed by multiple organisations and communities, the aim of these intervention sections is to identify key evidence based strategies that are currently being undertaken, are planned or are required to be undertaken, based upon best practice. This intervention list is intended to be a useful resource for about three years. These interventions will be led by many organisations in partnership with other sectors.

There are a number of ways of influencing systems and settings to improve population health and wellbeing, or to create healthy environments that are conducive to health and wellbeing. These include, but are not limited to:

- Community public health planning: A broad range of bottom-up planning processes that engage communities and partner agencies,\(^\text{127}\) and,
- Health Impact Assessment: An approach used to assess and judge an initiative or policy for its potential effects on the health of the population and the distribution of those effects within the population.\(^\text{128,129}\)

It is clear that there are no simple, quick fixes to these complex issues. Action on all determinants requires multi-strategy approaches which:

- include both population wide and at risk group approaches
- involve sectors working together at state and local level
- focus on both risk and protective factors
- address social, behavioural, economic and environmental factors
- specifically address equity and reduce disparities by focusing on the needs of the most disadvantaged communities and population groups
- take a lifecourse perspective.

Key action areas and evidence based strategies unique for young people are described. These strategies complement those provided in the Whole of population chapter, although the interventions may be population specific.

There are no specific strategies for young people for communicable disease, food safety and women’s cancer screening.
## Alcohol

<table>
<thead>
<tr>
<th>Key action areas</th>
<th>Key evidence based strategies</th>
</tr>
</thead>
</table>
| Prevent alcohol related harm | • Deliver programs that enable young people to build resilience through inclusiveness and connectedness with their communities, and to make healthy choices around the use of alcohol. For example, Rock Eisteddfod, Croc Festival and Rumble in the Jungle.  
• Implement multi-strategy prevention campaigns targeting 12-29-year-olds, particularly during high-risk transitional periods, such as leaving school, eg. Young Women and Alcohol and DrinkSmart programs.  
• Deliver education and intervention programs that address alcohol and/or other drug use by the parents and young people of high-risk families.  
• Increase the capacity of workers in the education system to address alcohol issues, eg. Queensland School Drug Education Strategy and Service Based Policing Program.  
• Implement programs that improve the safety of drinking environments, eg. Safer Venues programs, and ‘Schoolies’ festival activities.  
• Provide alternative social opportunities such as those provided through Police Citizen Youth Clubs, to actively engage with young people at risk.  
• Establish child care and family support hubs as single entry points at the local level, for services to meet the diverse needs of young people and families. This includes family support services, parenting support, community activities and education services. |

Further information regarding the intervention strategies above can be accessed from:

5. Water and Alcohol Safety Project, Drug and Alcohol Coordination Unit, Queensland Police Service.
### Immunisation

<table>
<thead>
<tr>
<th>Key action areas</th>
<th>Key evidence based strategies</th>
</tr>
</thead>
</table>
| Community awareness and immunisation uptake | • Implement a targeted social marketing strategy, including providing a range of resources in innovative formats and locations, such as schools, TAFEs, universities and unemployment offices to increase uptake of the National Meningococcal C Program.  
• Implement a targeted communication strategy for service providers regarding the importance of providing the meningococcal vaccine. |

Further information regarding the intervention strategies above can be accessed from:

## Injury

<table>
<thead>
<tr>
<th>Key action areas</th>
<th>Key evidence based strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supportive public policies and environments</td>
<td>• State and local authorities to manage legislation and regulations/standards, including enforcement, eg. responsible serving of alcohol, seat belt wearing, speed cameras, bicycle and motor bike helmet wearing and maintenance of sporting facilities/grounds.</td>
</tr>
<tr>
<td></td>
<td>• Implement a graduated licensing system for young drivers.</td>
</tr>
<tr>
<td></td>
<td>• Identify and implement a range of pre and post licensing education and training initiatives to reduce novice driver or rider crashes.</td>
</tr>
<tr>
<td></td>
<td>• Promote the modification of rules and use of protective equipment such as mouthguards and padding on goal posts, to reduce injury during training and competition in organised sports.</td>
</tr>
<tr>
<td></td>
<td>• Provide formal and comprehensive induction programs for new young staff and trainees, particularly in hazardous work environments.</td>
</tr>
<tr>
<td></td>
<td>• Provide safe off-road facilities/areas for the use of small wheel equipment, eg. skateboards, rollerblades and scooters.</td>
</tr>
</tbody>
</table>

Further information regarding the intervention strategies above can be accessed from:

6. www.youthsafe.org
### Mental health

<table>
<thead>
<tr>
<th>Key action areas</th>
<th>Key evidence based strategies</th>
</tr>
</thead>
</table>
| Supportive environments and infrastructure | • Provide opportunities that support participation in a range of formal and informal recreational, social and cultural opportunities, eg. Arts Queensland Youth Development program, Queensland Arts and Community Network, Sport and Queensland Recreation Youth Development programs and 100% in Control Campaign.  
• Implement youth-friendly policies and practices in workplaces and community settings, eg. apprenticeship programs and flexible working hours. |

Further information regarding the intervention strategies above can be accessed from:

## Nutrition

<table>
<thead>
<tr>
<th>Key action areas</th>
<th>Key evidence based strategies</th>
</tr>
</thead>
</table>
| Healthy eating   | • Implement a coordinated statewide strategic approach to nutrition promotion in schools, pre-schools and child care within the health promoting schools approach, eg. Joint Work Plan between Queensland Health and Education Queensland.  
• Establish regular, consistent, standardised monitoring and surveillance of infant and child nutrition throughout the State, linked with National initiatives.  
• Implement the Healthy Weight component of the Joint Work Plan between Queensland Health and Education Queensland, which addresses:  
  – policy issues, eg. tuckshops, vending machines, sponsorship by “fast food” companies, use of school recreational facilities out of school hours, supervision of physical activity in school breaks, out of schools hours care programs  
  – programs relevant to curriculum and the whole school environment  
  – linkages to Queensland Health programs in schools such as the School-based Youth Health Nurse program. |
| Healthy weight   | • Promote and provide family-focused programs to prevent, manage and treat overweight and obesity in young people for families at risk and families with overweight young people. For example, Kids on Track and Lifestyle Triple P. |

Further information regarding the intervention strategies above can be accessed from:

7. NHMRC. Clinical Guidelines for Weight Control and Obesity Management in Adults. Canberra: National Health and Medical Research Council; 2003.
**Oral health**

<table>
<thead>
<tr>
<th>Key action areas</th>
<th>Key evidence based strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supportive policies and treatment</td>
<td>• Target and deliver prevention focused school dental services based on need.</td>
</tr>
<tr>
<td></td>
<td>• Implement integrated models of oral health care in high schools where students have adequate access to community dental clinics.</td>
</tr>
<tr>
<td></td>
<td>• Progress the development of more specialised oral health care services for young people, eg. those with special needs.</td>
</tr>
<tr>
<td>Community awareness</td>
<td>• Work with governments, industry and the media to limit the promotion and advertising of foodstuffs and beverages that are harmful to the oral health of young people.</td>
</tr>
<tr>
<td></td>
<td>• Link with and build upon existing common risk factor strategies within sport and recreational settings to promote oral health, eg. mouthguards, SunSmart and nutrition.</td>
</tr>
<tr>
<td></td>
<td>• Develop environments in secondary schools to promote oral health, eg. through curriculum, canteen and parents.</td>
</tr>
<tr>
<td>Workforce capacity and infrastructure</td>
<td>• Progress the enhancement of the skill base in paediatric dentistry to ensure the effective provision of oral health services for children, including better utilisation of Allied Oral Health Professionals.</td>
</tr>
<tr>
<td></td>
<td>• Foster research to determine the causal and contributing factors associated with dental caries in high risk children, and identify appropriate interventions.</td>
</tr>
</tbody>
</table>

Further information regarding the intervention strategies above can be accessed from:

Physical activity

<table>
<thead>
<tr>
<th>Key action areas</th>
<th>Key evidence based strategies</th>
</tr>
</thead>
</table>
| Supportive environments and policies | • Increase physical activity in education settings through effective partnership with key stakeholders to help define and direct interventions, eg. Education Queensland, Association of Independent Schools, Australian Council for Health, Physical Education and Recreation (ACPER), and Health Promoting Schools Association.  
• Provide appropriate resource manuals to assist local governments to use physical activity as a strategy for addressing the needs for ‘Youth at risk’.  
• Re-orient school physical education programs for adolescent girls to encourage participation, such as increasing choices for co-ed or single sex activities and appropriate uniform requirements.  
• Improve links from school to community so that the transition into community-based activities is facilitated and lifelong participation is encouraged. |

Further information regarding the intervention strategies above can be accessed from:

Sexual health

<table>
<thead>
<tr>
<th>Key action areas</th>
<th>Key evidence based strategies</th>
</tr>
</thead>
</table>
| Prevention of transmission | • Implement curriculum for primary and secondary schools that encourages safe behaviours and practices.  
|                          | • Conduct education programs, including peer support and role modelling to assist young people to adopt safe behaviours, eg. safe tattooing in prisons, safe injecting practices for new initiates to injecting, and safe sex behaviours in sex venues and brothels. |

Further information regarding the intervention strategies above can be accessed from:

**Smoking**

<table>
<thead>
<tr>
<th>Key action area</th>
<th>Key evidence based strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community awareness</td>
<td>• Implement the ‘Poison’ campaign (including mass media and a health promoting schools resource) to help reduce smoking uptake and smoking experimentation by young people.</td>
</tr>
<tr>
<td></td>
<td>• Provide anti-smoking education in the school curriculum in line with the health promoting schools approach.</td>
</tr>
<tr>
<td></td>
<td>• Provide quit smoking support and counselling in routine antenatal care.</td>
</tr>
</tbody>
</table>

Further information regarding the intervention strategies above can be accessed from:

4. QUITline - www.quitnow.info.au
Social determinants

<table>
<thead>
<tr>
<th>Key action areas</th>
<th>Key evidence based strategies</th>
</tr>
</thead>
</table>
| Settings and partnerships | • Enhance access to education, and school and community support for highly transient children.  
                        | • Implement Working together for healthy schools position statement and practice framework.  
                        | • Support education and training reforms for young people to improve, participation, retention and attainment within the education and employment environments |

The work of a multitude of government and non-government agencies impacts directly and indirectly on the social determinants of health. Further information regarding the intervention strategies above can be accessed from:

2. Qld Health multicultural policy.
### Sun protection

<table>
<thead>
<tr>
<th>Key action areas</th>
<th>Key evidence based strategies</th>
</tr>
</thead>
</table>
| Community Awareness | • Implement social marketing campaigns to increase awareness of skin cancer prevention and SunSmart behaviours among parents, teachers and young people, eg. Working towards a SunSmart Queensland Secondary Schools, sporting clubs and workplaces, workplace orientation programs, particularly in trade services.  
• Include sun protection and skin cancer prevention modules into existing school curriculum for secondary schools.  
• Include sun protection and skin cancer prevention into allied health and beauty therapy curriculum, eg. beauty therapy schools, TAFE Queensland and Universities.  
• Promote the Queensland Cancer Fund Community Speakers Program to employers that employ young people in occupations where there is a high risk of skin cancer, eg. apprentices, outdoor workers. |
| Supportive public policies and safer environments | • Implement sun protection policies in Queensland secondary schools using a health promoting schools approach, eg. Joint Work Plan.  
• Coordinate policies and strategies between local government, non-government and community agencies towards targeting high risk sporting and leisure organisations to introduce sun protection policies. |
| Shade provision | • Assist secondary schools, sporting clubs and the community with provision of quality shade structures, including through the provision of resources such as shade guidelines for sports fields and public pools.  
• Implement natural shade protection projects, eg. Shade and Spade Committee Qld ‘SunSmart’ Schools Arbor Day Awards in schools. |

Further information regarding the intervention strategies above can be accessed from:

3.6 Methodology and guide for users

*Health Determinants Queensland* reports on the prevalence of health determinant indicators of population subgroups in Queensland. In addition, this report includes a profile for each health service district (HSD) in Queensland detailing key sociodemographic data and health status estimates, using synthetic estimation methods. This methodology and guide for users is included in all chapters of this report.

Selection criteria for inclusion of indicators in this report

The inclusion and sequence of indicators is structured using the *National Health Performance Framework* (Table 3.18). This was chosen for consistency with national and state directions, to help the reader find indicators of interest to their area of expertise through the various chapters, and to assist in systematic identification of challenges and points for intervention. This Framework has three tiers; Heath status and outcomes; Determinants of health; and Health system performance.

The focus of this report is health determinants. Limited health outcome indicators are also presented. The key health outcome indicators not reported in *Health Determinants Queensland 2004* are included in *Health Indicators for Queensland 2001* and other documents, where specific references to these publications are quoted throughout the text. Links between health determinants and health outcomes are provided. Indicators of health system performance are beyond the scope of this publication.

Indicators listed in this report were selected on the basis of the following criteria:

- nationally/internationally accepted core indicators (i.e. complies with National Health Data Dictionary (NHDD) definitions or have been reported in a recognised publication)
- relevance to the Queensland/Australian public health policy context
- available sources contain reliable, integral, representative data for the particular population sub-group
- the set of indicators reflect a balance between determinants and outcomes, with limited overlap with *Health Indicators for Queensland: Southern, Central and Northern Zones 2000*-9
- the wording can be understood by people who are in a position to take action
- the issue measured is such that action can be taken at a state or local level to address it.

The order of indicators in each chapter of *Health Determinants Queensland* is consistent with the *National Health Performance Framework*. Health status and outcome indicators are reported for the National Health Priority Areas, ordered from highest to lowest according to the burden of disease attributed to the area. In general, the order of indicators is based upon a combination of aggregates of indicators of similar aetiology or outcome, hierarchy based upon either breadth of indicator (e.g. all cancer mortality followed by breast cancer mortality) or sphere of impact (societal, household followed by individual), and alphabetical order. As this report focuses on modifiable determinants of health, the person-related factors dimension of the *National Health Performance Framework* is not included. All determinants of health indicators are reported in the domain where there is the greatest opportunity for health gains. Thus, physiological and biological factors which may be partially addressed through lifestyle behaviour change have been included in the health behaviour dimension of this report.
### HEALTH STATUS AND OUTCOMES
How healthy are Australians? Is it the same for everyone? Where is the most opportunity for improvement?

<table>
<thead>
<tr>
<th>Health conditions</th>
<th>Human function</th>
<th>Life expectancy and wellbeing</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence of disease, disorder, injury or trauma or other health-related states.</td>
<td>Alterations to body, structure or function (impairment), activities (activity limitation) and participation (restrictions in participation).</td>
<td>Broad measures of physical, mental, and social wellbeing of individuals and other derived indicators such as Disability Adjusted Life Expectancy (DALE).</td>
<td>Age and/or condition specific mortality rates.</td>
</tr>
</tbody>
</table>

### DETERMINANTS OF HEALTH
Are the factors determining health changing for the better? Do the determinants affect everyone in the same way? Where and for whom are they changing?

<table>
<thead>
<tr>
<th>Environmental factors</th>
<th>Socioeconomic factors</th>
<th>Community capacity</th>
<th>Health behaviours</th>
<th>Person-related factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical, chemical and biological factors such as air, water, food and soil quality resulting from pollution and waste disposal.</td>
<td>Socioeconomic factors such as education, employment, per capita expenditure on health, and average weekly earnings.</td>
<td>Characteristics of communities and families such as population density, age distribution, health literacy, housing, community support services and transport.</td>
<td>Attitudes, beliefs, knowledge and behaviours e.g. patterns of eating, physical activity, excess alcohol consumption and smoking.</td>
<td>Genetic related susceptibility to disease and other factors such as blood pressure, cholesterol levels and body weight.</td>
</tr>
</tbody>
</table>

### HEALTH SYSTEM PERFORMANCE
How well is the health system performing in delivering quality health actions to improve the health of all Australians? Is it the same for everyone?

<table>
<thead>
<tr>
<th>Effective</th>
<th>Appropriate</th>
<th>Efficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care, intervention or action achieves desired outcome.</td>
<td>Care/intervention/action provided is relevant to the client’s needs and based on established standards.</td>
<td>Achieving desired results with most cost effective use of resources.</td>
</tr>
<tr>
<td>Responsive</td>
<td>Accessible</td>
<td>Safe</td>
</tr>
<tr>
<td>Service provides respect for persons and is client orientated and includes respect for dignity, confidentiality, participation in choices, promptness, quality of amenities, access to social support networks, and choice of provider.</td>
<td>Ability of people to obtain healthcare at the right place and right time irrespective of income, physical location and cultural background.</td>
<td>The avoidance or reduction to acceptable limits of actual or potential harm from healthcare management or the environment in which healthcare is delivered.</td>
</tr>
<tr>
<td>Continuous</td>
<td>Capable</td>
<td>Sustainable</td>
</tr>
<tr>
<td>Ability to provide uninterrupted, coordinated care or service across programs, practitioners, organisations and levels over time.</td>
<td>An individual’s or service’s capacity to provide a health service based on skills and knowledge.</td>
<td>System or organisation’s capacity to provide infrastructure such as workforce, facilities and equipment, and be innovative and respond to emerging needs (research, monitoring).</td>
</tr>
</tbody>
</table>

### Analysis
All mortality and hospital separation rates and ratios were calculated using the Health Information Analysis System (HIAS). HIAS calculates the direct age standardised rate per 100,000 population using the 1991 Australian population (persons) as the standard population, 95% confidence intervals for these
rates, actual and expected counts and rate ratios with 95% confidence limits. Year of death registration was used. Confidence intervals were estimated by assuming Normal approximations to the Poisson distribution. The Queensland population in the comparable year, by sex, was used as the standard population for calculation of standardised ratios, where the reference figure of 100 for Queensland was applied in all cases.

Throughout this report the term 'significant' is used to indicate ‘statistically significant' rather than necessarily of clinical or public health importance. Determination of statistically significant differences was based on the standardised ratio, where differences are reported as statistically significant if the 95% confidence limits population group do not include 100.

All rates and ratios are reported to limited decimal points. Thus statistical significance for some differences may not be apparent from the reported data. No statistical methods were applied for adjustment of multiple comparisons. Therefore caution must be used in the interpretation of individual or small numbers of data points.

Due to the small population numbers in some disease or age groups, numbers for some specific causes of deaths or hospital separations were very small or zero in a single year. In an attempt to produce meaningful rates and reduce the fluctuation from year to year, three year averages were calculated instead of single year counts. Generally case numbers, and age standardised and age specific mortality and hospital separation rates are reported in the Health Determinants Queensland 2004 Statistical Report.

Poisson regression models in SPSS statistical software (version 10) were used to test for age adjusted linear trends in mortality and hospital separation rates in the period 1992-2001. The predictor variables in these multivariate analyses were single year of death or single year of hospital separation and age, which was generally expressed in five-year age groups as indicator variables. The outcome variable was the number of deaths or hospital separations, with the log of the age specific populations used as the offset variable in the Poisson model. The Poisson regression model assumed that the annual trend in rates was linear, and hence departures from this linear trend have not been tested. Linear trends were expressed in terms of the per cent change per year, based on the parameter estimates of the Poisson model.

The standard errors of the parameter estimates were corrected for evident overdispersion. Confidence intervals (95%) for the per cent change per year were calculated using the parameter estimates of the Poisson model and standard error of those estimates.

Comparability between ICD-9 and ICD-10

In 1997, the ABS implemented an Automated Coding System (ACS) for cause of death coding. The coding system changed from ICD-9 to ICD-10. From 1999, deaths were coded using ICD-10 and from 1999/00 hospital separations were coded using ICD-CM-10. The comparability factors between data coded using ICD-9 and ICD-10 are listed in Table 3.19. These factors were generated from mortality data from the years of joint coding, 1997 and 1998.

There were differences in the number of deaths coded by the two systems for many mortality indicators in this report. However where the comparability factor was in the range 0.9 to 1.1, comparability issues were not highlighted in the text and Poisson trend analysis was reported. Where the comparability factor was outside this range, no Poisson trend analysis was reported and the issue of lack of comparability was noted in the text. An additional consideration for diabetes was the effect of changes in instructions to coders between ICD-10 version 1 and version 2 in 2000, resulting in a larger number of cases being coded as diabetes principle cause. Changes in hospital separation rates over the period prior to 2000 were reported. No comparisons of diabetes hospital separation rates prior to 2000 with rates after 2000 were conducted. Lack of comparability of coding for COPD between ICD-9 and ICD-10 precluded comparison of rates across the reporting period.
### Table 3.19: Comparability factors for pre 1997 manual coding of ICD-9 and Automatic Coding System for ICD-10, for reported diseases and conditions

<table>
<thead>
<tr>
<th>Disease</th>
<th>ICD-9/ICD-9-CM</th>
<th>ICD-10/ICD-10-CM</th>
<th>Calculated Comparability Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malignant Neoplasms</td>
<td>140 - 208</td>
<td>C00 - C97</td>
<td>1.01</td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>153 - 154</td>
<td>C18 - C21</td>
<td>1.00</td>
</tr>
<tr>
<td>Lung cancer</td>
<td>162</td>
<td>C33, C34</td>
<td>0.99</td>
</tr>
<tr>
<td>Melanoma of skin</td>
<td>172</td>
<td>C43</td>
<td>1.01</td>
</tr>
<tr>
<td>Breast cancer in women</td>
<td>174</td>
<td>C50</td>
<td>1.01</td>
</tr>
<tr>
<td>Cervical cancer in females</td>
<td>180</td>
<td>C53</td>
<td>0.99</td>
</tr>
<tr>
<td>Prostate cancer in males</td>
<td>185</td>
<td>C61</td>
<td>1.01</td>
</tr>
<tr>
<td>Diabetes (principal cause)</td>
<td>250</td>
<td>E10 - E14</td>
<td>1.03</td>
</tr>
<tr>
<td>Mental and behavioural disorders</td>
<td>290 - 319</td>
<td>F00 - F09</td>
<td>0.79</td>
</tr>
<tr>
<td>Coronary Heart Disease</td>
<td>410 - 414</td>
<td>I00 - I05</td>
<td>1.01</td>
</tr>
<tr>
<td>Stroke</td>
<td>430 - 438</td>
<td>E45, E46, I60-69</td>
<td>1.02</td>
</tr>
<tr>
<td>COPD (not including Asthma)</td>
<td>491, 492, 496</td>
<td>J41-J44</td>
<td>1.11</td>
</tr>
<tr>
<td>Asthma</td>
<td>493</td>
<td>J45,J46</td>
<td>0.71</td>
</tr>
<tr>
<td>Musculoskeletal</td>
<td>710-739</td>
<td>M00-M99</td>
<td>1.10</td>
</tr>
<tr>
<td>SIDS</td>
<td>798</td>
<td>R95</td>
<td>0.67</td>
</tr>
<tr>
<td>Injury and poisoning, excludes intentional self harm and complications of medical and surgical care</td>
<td>E800-869, E880-929, E960-999</td>
<td>V01-Y98, excluding X60 - 84 and Y40-84</td>
<td>1.07</td>
</tr>
<tr>
<td>Road transport related injury</td>
<td>E810-819, E826-829</td>
<td>V02-04 (.1,.9); V09.2; V12-V14(.3-9); V19 (.4-9); V20-28 (.3-9); V29 (.4-9); V30-V39 (.4-9); V40-49 (.4-9); V50-V59 (.4-9); V60-69 (.4-9); V70-79 (.4-9); V80 (.3-5); V81.1, V82.1, V83. V86 (.3-3); V87 (.0-8); X89 (2) V01 (.0,.1,.9); V06 (.0,.1,.9); V09 (.1,.3,.9); V10-V11 (.0,.5,.9); V16-V18 (.0,.5,.9); V19 (.3,.8,.9); V60 (.0,.2-7,.9); V82 (.2,.7,.9); V87.9; V88.9; V89 (.1,.3,.9)</td>
<td>1.04</td>
</tr>
<tr>
<td>Accidental Poisoning</td>
<td>E850 - 869</td>
<td>X40 - X49</td>
<td>1.01</td>
</tr>
<tr>
<td>Falls</td>
<td>E860 - E866, E889</td>
<td>W00 - W1999</td>
<td>1.00</td>
</tr>
<tr>
<td>Fires, Burns and Scalds</td>
<td>E890 - E899, E924</td>
<td>X00 - X19</td>
<td>1.00</td>
</tr>
<tr>
<td>Drowning</td>
<td>E910</td>
<td>W65 - W74</td>
<td>1.04</td>
</tr>
</tbody>
</table>

Source: Calculated by QH 2004

### Attributable fractions

Attributable fractions, also referred to as aetiologic or aetiological fractions, are used to measure the impact of risk factors on morbidity and mortality. Calculation of fractions takes into account both the age and sex specific prevalence of a risk factor in the population of interest, and the strength of the relationship between the risk factor and outcome conditions (relative risk) for that age group and sex. The number of deaths or hospital separations caused by (or preventable for) a risk factor can then be calculated by multiplying the number of age and sex specific cases of each outcome condition related to the risk factor, by the corresponding attributable fraction.
Risk factors included in this report are alcohol, smoking, illicit drugs and physical inactivity. The attributable fractions for alcohol, smoking and illicit drugs were those created by the Australian Institute of Health and Welfare in 2001.56 The fractions were originally developed by Holman et al,130 and revised by English et al.55 Relative risk estimates of physical inactivity used to calculate Queensland fractions were developed by the World Health Organisation.131

**Indigenous health**

Aboriginal populations and Torres Strait Islander populations have different health status. However, in this report these populations are generally reported together as Indigenous peoples. This report includes data and indicators to describe Indigenous health where the data is available, using methodologies listed below. It builds on information provided in earlier reports for Queensland Health.7-9 Comparisons between the health of the population groups were performed using five proxies:

1. Stratification of Queensland into areas by the proportion of Census respondents who identified as Indigenous
2. Indigenous status field from the Queensland hospital admitted patient data collection
3. Utilisation of the locality field in the Queensland hospital admitted patient data collection to consider remote Indigenous communities
4. Reference to Australian Indigenous identified data
5. 2001 Census demographic data.

The first of these proxy methods was extensively used in the Whole of population and Indigenous peoples chapter. Statistical Local Areas (SLAs) were clustered into five groups based on the proportion of Indigenous population in the SLA, as derived from the 1996 census. These groups were: less than 5% Indigenous population; 5% to less than 10%; 10% to less than 20%; 20% to less than 40%; and, greater than 40% Indigenous population. These groups are indicated as less than 5%, 5-10%, 10-20%, 20-40%, and greater than 40%, respectively in this report.

The remaining four proxy methods were used exclusively in Chapter 5. Indigenous peoples.

**Analysis for health service district profiles**

The provision of appropriate health services is significantly enhanced by knowledge of the health status of the target population. The measurement of area specific health status or health service needs is difficult for small geographical areas. Measures of population health available from routine collections do not always allow for calculation of small area estimates. Periodic or ad hoc surveys generally do not provide small area estimates either, having usually been designed to generate population estimates at only a state or national level. Furthermore, health status in small populations is subject to considerable variation in numbers of cases, deaths or behaviours due to unexpected or non-representative events.

Assessment of the health status of an area requires consideration of two major components: the health status of all Queenslanders and the relative health status of the residents in the area in comparison with all Queenslanders. The health status of all Queenslanders in terms of health outcomes, risk factor prevalence and the burden of disease and injury attributable to diseases, injury and risk factors, are documented elsewhere in Health Determinants Queensland 2004, Health Indicators for Queensland, 2001 and other publications. However, the prevalence of health outcomes and health determinants for small populations is unknown and therefore cannot be compared with Queensland overall.

The health status of a population is largely predicted by the sociodemographic characteristics of the population.132 The key sociodemographic predictors of health status are age distribution of the population, sex distribution, proportion of Indigenous people, socioeconomic profile, and to a lesser extent, urban, rural or remote location.

The health status of each health service district (HSD) was estimated by determining the key sociodemographic characteristics of its population and comparing these to Queensland in conjunction with the epidemiology of health status indicators in the key sociodemographic groups within Health Determinants Queensland 2004. This same methodology could also be used to estimate the health status of populations within HSDs. This method of synthetic estimation relies on the fact that the health status of a population is largely predicted by sociodemographic characteristics of the population,19,132 and thus varies considerably across the state. This is because in Queensland and elsewhere, patterns of disease prevalence are strongly based on age and sex eg, older people are likely to develop coronary heart disease; males are more likely to have lung cancer etc.
To estimate the relative prevalence of key health outcomes and determinants in a population the following process was undertaken:

A. Determine the sociodemographic characteristics of the population, specifically:
   - age distribution
   - sex distribution
   - proportion of Indigenous people
   - socioeconomic advantage/disadvantage profile; and
   - classification as urban, rural or remote location, or accessibility category.

B. Source the distribution of health status indicators (deaths, hospital separations, risk and protective factor prevalence) between sociodemographic groups for Queensland in Health Determinants Queensland 2004.

C. Where the area has a greater proportion of a sociodemographic group in comparison with Queensland, determine those health status indicators that are more prevalent in that sociodemographic group.

For example:
If a population has a higher proportion than Queensland of Indigenous people, it is estimated that this population will have a higher prevalence of deaths due to all causes and in particular; cardiovascular disease, diabetes and suicide. Determinants of these conditions include tobacco smoking and overweight and obesity, excessive alcohol consumption and poor nutrition.

Note: This methodology only provides an estimate of health status in populations. In addition where the method indicates that in all probability a population will have an excess prevalence of a health status indicator, the method does not provide information on the health significance of this excess.

The state and HSD-level estimates of the prevalence of asthma, diabetes and overweight/obesity were based on the following data sources. Self report asthma in children (ages 0 to 9 years) from the 2001 National Health Survey (NHS 2001) was consistent with epidemiological studies in NSW, in which more rigorous clinical diagnosis techniques were adopted. The NHS 2001 was used, therefore, to derive both state and HSD level relativities for this condition. Measured diabetes status in adults (ages 25 years and older) from the AusDiab study was considered to be the most up-to-date and reliable source of the prevalence on diabetes at a state level. Due to sampling considerations, however, self-report diabetes from the NHS 2001 was chosen over AusDiab to derive HSD level relativities. Diabetes prevalence in Indigenous populations was calculated separately using information from the Well Person’s Health Check. Similarly, measured body mass index (BMI) from AusDiab was considered to be the most current and reliable source for the prevalence of overweight/obesity in adults (ages 20 years and older). Again, self report information from the NHS 2001 was used to derive HSD level relativities, except for Indigenous populations where a synthesis of information from the Well Person’s Health Check and the self report information from the Indigenous component of NHS 2001 was used. Due to the lack of current information (both measured or self report) on overweight/obesity in children (ages 5 to 14 years), state and HSD level estimates of the prevalence of this risk factor were derived using a synthesis of information on measured BMI from the 1995 National Nutrition Survey (NNS) and the relationship between self report childhood and adult obesity, and diabetes observed in the NHS 2001. Case numbers are based on the age and sex distribution of the HSD according to estimated resident population figures for 2001 and were calculated using simple and multinomial survey logistic regression techniques using index of socioeconomic advantage/disadvantage, proportion Indigenous population and accessibility score as covariates where appropriate.

Excess prevalence of sociodemographic factors and health status in HSDs
In Chapter 6, an excess population was determined for those HSDs where the proportion of a sociodemographic group was greater than the Qld mean. Of those HSDs where there was an excess proportion, half of the HSDs were called ‘greater than’ and the other half, ‘much greater than’. Excess sociodemographic groups were reported in the HSD profile if there were:

- much greater proportion of a current or projected age group (with age groups; 0-4, 5-14, 15-24, 65-74 and 75+ years);
- much greater proportion of a current sex;
- greater or much greater than proportion of Indigenous peoples;
- greater or much greater than proportion of people living in the most socioeconomically disadvantaged quintile;
- greater or much greater than proportion of people who speak a main language other than English at home;
- greater or much greater than proportion of people who speak a main language other than English at home and who speak English not well or not at all.

This same methodology was applied to the thematic mapping of age groups, Indigenous population and proportion of population in the socioeconomically disadvantaged quintile. In the maps however, excess was based on stratification by all Collection Districts in Queensland, rather than by HSDs as above. The minimum areas for shading were Collection Districts (an area of approximately 225 dwellings with fewer dwellings in rural areas as population densities decrease).

**Interventions to address the burden of risk factors**

Intervention sections are included in each of the five population based chapters of this report. These sections aim to provide the key audiences (health sector managers, planners and service managers, local government and other key partners) with a snapshot of the effective interventions that can and should be implemented to impact positively on the health determinants of Queensland or smaller populations.

A whole of government approach has been taken; where the action by numerous partners is required to effectively meet the health needs of the population. Population health interventions to address the burden of disease and injury caused by the reported health determinants were derived from published national and state strategic documents, and other published international literature. Specifically where these interventions are currently implemented or proposed for Queensland Health, they are described in the Outcome Area Plans and Health Outcome Plans of Queensland Health.

**Data sources and specific limitations**

**ABS Cause of death**

Mortality data were derived from the Queensland Registrar of Births, Deaths and Marriages, where cause of death and usual residential address were recorded on death certificates. All disease specific mortality data were derived using the principal cause of death. In addition, deaths in 1999-2001 where diabetes was reported as an underlying cause in deaths were also reported. The external causes of injuries and poisoning are reported. These data were coded by the ABS using the International Classification of Diseases, version 10 (ICD-10) (Table 3.19). There have been two major changes in death coding practices by the ABS in the reported period; conversion from manual ICD-9 coding to automatic ICD-9 coding; and, conversion from ICD-9 to ICD-10. The comparability factors between data coded at the start and end of the reported period are listed in Table 3.19.

For consistency with national reporting, year of registration of the death rather than year of death is used for all indicators, except those for reporting of Indigenous health outcomes. Year of death is used for reporting of Indigenous health outcomes due to the variable time between death and registration in some Indigenous communities in Queensland.

**AusDiab**

The Australian Diabetes, Obesity and Lifestyle Study (AusDiab) was a national survey conducted in 2000 by the International Diabetes Institute. The objectives of the survey were to estimate the prevalence of diabetes and related conditions (using blood tests), to assess the distribution and relationships of cardiovascular risk factors and to assess trends in risk factor levels as compared with those obtained in previous surveys in Australia. The AusDiab study employed stratified cluster sampling to recruit subjects. In Queensland, 1,634 adults from six urban centres completed the biomedical examinations. The response rate in the study was low, with only 29% of those estimated to be eligible in the total population, 34% of those estimated to be eligible from contacted households and 50% of those invited actually completed the study. These response rates are just slightly below the national AusDiab rates.

Data from the Queensland cohort suggest that the Queensland-AusDiab participants may have been from lower socioeconomic disadvantaged areas and/or may have been more health conscious than the general Queensland population; with lower smoking rates and higher intakes of vegetables and fruit than the general population. These possible biases may result in underestimates of the true prevalence cardiovascular risk factors.
BETTERING THE EVALUATION AND CARE OF HEALTH (BEACH)

The BEACH project is an ongoing survey of general practice conducted by the Australian Institute of Health and Welfare (AIHW) and the General Practitioner Statistics Collection Unit, University of Sydney. Approximately 1,000 general practitioners (selected from the Medical Benefits Scheme provider database) from across Australia are surveyed annually. The program aims to establish an ongoing database of GP-patient encounter information and to assess patient risk factors and the relationship these factors have with health service activity.

CANCER DEATHS

Cancer death data was reported from the Queensland Registrar of Births, Deaths and Marriages, and is consistent with all other death data in this report. Cancer death data was also reported directly from other sources in Queensland Health where the Queensland Cancer Registry was used. The registry file is based on place of first diagnosis of the cancer, in contrast to the ABS coded file based on place of usual residence of death.

CENSUS OF POPULATION AND HOUSING

The national census is conducted every five years by the Australian Bureau of Statistics (ABS) to collect detailed demographic information about individuals which can be reported at levels ranging from small area through to national data. Data from the 1996 and 2001 census are reported. Age and sex distributions were derived from 2001 census and 2002 estimated resident populations (ERP). Indigenous population, birthplace, and language spoken at home were derived from the 2001 Census. Population growth and projections for health service districts reported in Chapter 6 Health service district profiles were derived from the 1996 Census. Denominator populations for rates and ratios were calculated using data from the 1991, 1996 and 2001 Census with estimations for the intervening years.

All maps in this report were prepared using Cdata 2001 software with MapInfo (version 7.0).

CANCER SCREENING: BREAST AND CERVICAL CANCER

Breast cancer screening information was derived from data collected at all BreastScreen Queensland Program sites throughout the State. It should be noted that mammographic services provided outside the BreastScreen Program are not included in this data. PAP smear data was derived from the PAP Smear Register.

CHILD HEALTH DENTAL SURVEY

The prevalence of dental caries in children was obtained from the National Child Health Dental survey conducted by the AIHW Dental Statistics and Research Unit, and reported using definitions consistent with the national survey reports. Although the results of the Child Health Dental survey provide an indication of the trends in oral diseases, the survey suffers from some fundamental design problems, including:

• the sample is drawn solely from children treated by school dental services and may therefore be unrepresentative of the child population
• different sampling regimes adopted by states and territories may mean that the results are not comparable
• potential biases may exist due to variations in the assessment of decay and lack of standardisation of the large number of examiners
• the small size of the sample precludes small area or regional analysis of the results
• variations exist in compliance with the sampling requirements.

COMMUNITY HOUSING AND INFRASTRUCTURE NEEDS SURVEY (CHINS)

This survey was undertaken by the ABS in 1999 and then again in 2001, following on from the 1992 Housing and Community Infrastructure Needs Survey commissioned by ATSIC. The 1999 survey was developed to provide a new baseline for data on the adequacy and condition of housing, infrastructure and facilities in discrete Indigenous communities, and the housing stock provided to Aboriginal and Torres Strait Islander peoples by Indigenous Housing Organisations (IHO). In 2001, this survey collected information for 616 IHOs, which managed a total of 21,287 permanent dwellings. This represented 1,216 discrete indigenous communities in 2001 and a total reported usual population of 108,085 people. Although called a survey, CHINS was a complete enumeration of all larger Indigenous housing
organisations and discrete communities. Smaller organisations were considered out of scope. Data were collected by personal interview, following extensive testing and validation to confirm the suitability of the survey method. Results from the validation process indicated that aggregated data are considered fit for the intended purpose. Data quality on some un-aggregated data items was considered unsatisfactory. This represents a limitation to the data.

Crime and safety survey
This survey was conducted by the ABS in 2002 throughout Australia. It focuses on those categories of serious crime that affect the largest number of people including household break-in, motor vehicle theft, assault and robbery. The survey was conducted as part of the ABS Monthly Population Survey where questions on labour force are asked and in scope respondents were then sent a paper questionnaire for self-completion. Information was sought from 54,000 persons (aged 15 years and older), of which 76% responded. Household data was sought from 27,100 households with 20,400 (75%) responding. A complex set of multistage weighting procedures was used to adjust for non-response and for the particular demographic characteristics of respondents to the Monthly Population Survey.

General social survey
Information about family and community involvement, perceptions of safety and experiences with crime was obtained from the General Social Survey conducted by the ABS. The survey was conducted throughout Australia from March to July 2002, and information collected by trained interviewers by personal interview with 15,500 people aged 18 years and over. The response rate (fully responding, adequate/complete) was 79.3%. Individual information and household information was collected. Population estimates were weighted according to the age and sex distribution of the Queensland population and the number of adults per household. The results were not age standardised.

Household, income and labour dynamics for Australia (HILDA)
HILDA is a longitudinal survey, commenced in 2001, and is funded by the Commonwealth Department of Family and Community Services. This survey aims to support research questions related to three broad areas; income dynamics, labour market dynamics and family dynamics, and to undertake annual surveying for an undefined period. Data from the first wave was used in this report. Full responses were received from 6872 (in scope) Australian households comprising 13,969 individuals. Four questionnaires were utilised, three of which involved face to face interview with the fourth being a self-completion questionnaire. The household response rate was 58.8% (full responders) and the person response rate within those households was 92.3% (37% for self-completion questionnaire). Population estimates were weighted to the Australian population according to age and sex and number of adults per household. The results were not age standardised.

National drug strategy household survey
The prevalence of alcohol consumption, tobacco smoking and illicit drug use were obtained from the 1998 and 2001 National Drug Strategy Household Survey, and reported using definitions consistent with the national survey reports. Population estimates were weighted according to the age and sex distribution of the 2000 Estimated Resident Population for Queensland, with adjustment for changes to the survey period. The results are not age standardised. These estimates are based on data obtained through the Australian Social Science Data Archives of the Australian National University. The data were deposited with the Archives by the AIHW. The estimates however have been calculated within the Alcohol, Tobacco and Other Drug Services Unit of Queensland Health, and the latter takes full responsibility for the analysis and interpretation.

National health survey
Information about the prevalence of health risk factors and health-related behaviours was obtained from the 1995 and 2001 National Health Surveys (NHS) conducted by the ABS. The 2001 survey was conducted by personal interview with people in 19,408 private dwellings in Australia, with completed questionnaires from 26,863 people from these dwellings. Household response rates for non sparse households was 89% (including sample losses) and 58% in sparse households (including sample losses). Person responses varied. Population estimates were weighted according to the age and sex distribution and the number of adults per household. Some age standardization was undertaken for reporting Indigenous and non Indigenous data.
National nutrition survey
Information relating to diet and items derived from measured height, weight and body circumference was obtained from the 1995 National Nutrition Survey (NNS) conducted by the ABS although jointly sponsored by the ABS and the Commonwealth Department of Health and Family Services. A sample of 13,800 people was invited to participate in the NNS having previously been included in the 1995 NHS. A sub sample of 1,490 NNS participants provided additional (day 2) food intake data. Detailed information was collected from people aged two years and older and nutrient information was later derived from reported food and beverage intake. Population estimates were weighted according to the age and sex distribution of the Queensland population and the number of adults per household. The results were not age standardised.

Recommended daily intakes (RDI) of micronutrients are the amounts of nutrients that should be available per head of a population group if the needs of practically all members of the population group are to be met. All RDIs calculated from the 1995 National Nutrition Survey are based upon the 1982-1988 revised nutrient intake requirements and the 1989 revised energy requirements. All RDIs are based upon estimates of requirements with a generous ‘safety factor’ added. RDIs for thiamine, riboflavin, niacin and vitamin B-6 are based on energy requirements in existence when these B vitamin recommendations were revised. Niacin values are presented as a single figure, the midpoint of the range adopted in 1984. Iron is expressed as a range to allow for differences in bioavailability of iron from different Australian foods. The RDIs for pregnancy are for the second and third trimesters. The following factors were used: thiamine - 0.1 mg/1000 kJ; riboflavin - 0.15 mg/1000 kJ; niacin - 1.6 mg/1000 kJ; vitamin B-6 - 0.02 mg/g protein (based on protein as 10-15 per cent of recommended energy intake).

National survey of mental health and wellbeing of adults
This survey was conducted by the ABS in 1997 as part of the National Mental Health Strategy. Approximately 10,600 people aged 18 years and older participated in the survey, representing a response rate of 78%. Mental health was measured in this survey using a modified version of the Composite International Diagnostic Interview. This is a comprehensive computer based interview for adults which can be used to assess current and lifetime prevalence of mental disorders through symptoms and their impact on day to day activities. Where standardisation of data was undertaken, the estimated total Australian population was used.

Notifiable conditions
Notifiable condition data were derived from the Queensland Health Notifiable Conditions System (NOCS). Crude notification rates for all years were calculated using estimated resident populations. Identification of Indigenous status remains poorly completed within NOCS.

Persons aged fifty years and over survey
This survey was conducted by the ABS throughout Queensland in 1998. It was a supplement to the Australia-wide Monthly Population Survey. The survey was conducted using a multi-stage area sample with information obtained from approximately 1,800 private dwellings with usual residents aged fifty years and over. One person per household was surveyed. Information was obtained by interview using trained interviewers. Estimation procedures accounted for independent estimated distributions of the total population by age, sex and area. This procedure compensates for under-enumeration and leads to more reliable estimates.

Perinatal death collection
Data on perinatal statistics are collected under State legislation. These data provide a source of information for research into obstetrics and neonatal care, and assist with the planning of Queensland’s health services. The data collection forms are forwarded to Queensland Health by all public hospitals, private hospitals and home birth practitioners.

Population projections
The Queensland Government population projections released in 2003, (based on Census 2001) were developed by the Queensland Centre for Population Research at the University of Queensland in conjunction with the Office of Economic and Statistical Research. These projections have been produced for Queensland Statistical Divisions and Local Government Areas, but are not currently available for Statistical Local Areas. Consequently all projections used in this report are those developed from the
1996 Census by Department of Information, Local government and Planning, with health service district groupings added by Health Information Centre, Queensland Health (and last updated August 2002).

Queensland household gambling survey
The Office of the government statistician conducted this survey in 2001 by computer assisted telephone interviewing. People 18 years and over were included, with a total of 13,082 completed interviews achieved, giving a response rate of 72.3%. Technical details have been published.141

Queensland Health telephone surveys
Self reported quality of life, general health, oral health, chronic disease status, health determinant prevalence and social capital were obtained from the Omnibus health surveys, conducted by Queensland Health between 1993 and 2003. The majority of surveys were conducted for a random sample of Queensland adults, aged 18 years and older, except where noted in Table 3.20. All surveys were conducted using computer-assisted telephone interview (CATI) methodology. Response rates for these surveys ranged from 72% to 92% (Table 3.20). For all adult health data, population estimates were weighted according to the age and sex distribution of the Queensland population for the relevant period, and the number of adults per household. For children related data, the estimates were weighted according to the age and sex of the child concerned. The results were not age standardised.

Table 3.20: Queensland Health surveys 1998 to 2003

<table>
<thead>
<tr>
<th>Year</th>
<th>Survey title</th>
<th>Response rate</th>
<th>Number surveyed</th>
<th>Comments (eg oversampled rural)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>Statewide Health Survey</td>
<td>72%</td>
<td>5,594</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>Parenting Survey</td>
<td>82%</td>
<td>4,010</td>
<td>Respondents were principal care-givers of children aged 0-12yrs</td>
</tr>
<tr>
<td>2000</td>
<td>Chronic Diseases-General Population Survey</td>
<td>80%</td>
<td>1,625</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>Sunsafe Survey</td>
<td>81%</td>
<td>1,534</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>Omnibus Survey</td>
<td>77%</td>
<td>3,083</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>Omnibus Survey</td>
<td>75%</td>
<td>2,481</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>Social Capital Survey</td>
<td>79%</td>
<td>2,667</td>
<td>Oversampling in rural and remote areas</td>
</tr>
<tr>
<td>2003</td>
<td>Omnibus-General Population</td>
<td>73%</td>
<td>1,575</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>Omnibus-Infant Nutrition</td>
<td>92%</td>
<td>1,200</td>
<td>Respondents were biological mothers of children 0-4yrs</td>
</tr>
<tr>
<td>2003</td>
<td>Omnibus-Child Health</td>
<td>87%</td>
<td>1,596</td>
<td>Respondents were principal care-givers of children aged 0-12yrs</td>
</tr>
</tbody>
</table>

Source: Epidemiology Services Unit, Health Information Centre, Queensland Health

Queensland hospital admitted patient data collection
Hospital separation data were derived from the Queensland Hospital Admitted Patient Data Collection, including private and public hospitals. All disease-specific hospital separations were derived using the principal diagnosis of inpatient episodes of care, except for episodes of care in 2000/01 where diabetes was identified as an underlying condition in episodes of care due to diabetes-related conditions. The external cause(s) of injury and poisoning is reported. All separations were coded using the International Classification of Diseases version 10 Clinical Modification (ICD-10-CM: Table 3.19).

Recorded crime
This publication presents national crime statistics relating to victims of a selected range of offences that have been recorded by police. Data on official crime reports are provided to the ABS in aggregated form by the reporting authorities in each jurisdiction. The aim of national crime statistics is to provide one view of crime (police reported) and to provide comparisons across states and territories and provide a basis for measuring changes over time. National crime statistics are produced annually. The offence categories are based on the Australian Standard Offence Classification. Rates are based on the Estimated Resident Population for each of the states and territories for the reference period. Variations in recording of crime occur across jurisdictions. However national crime statistics are compiled to maximise comparability.
Safety in the Home
This survey was conducted by the ABS in Queensland in 2001 as a supplement to the Australia-wide Monthly Population Survey. The supplementary survey provided a sample of approximately 4,700 dwellings from which a full response was obtained. Any responsible adult aged 15 years or over was interviewed either by telephone or personal interview.

Socioeconomic indices
The 1996 Index of Relative Socioeconomic Disadvantage was used to undertake mortality stratifications in the Whole of population chapter. The 2001 Index of Relative Socioeconomic Advantage/Disadvantage was used for aetiological mortality analyses in Whole of population chapter, for mapping in Chapter 6 Health service district profiles and in selected socioeconomic discussions in other chapters. Both indices were reported in five quintiles based on Collection Districts in Queensland. These indices were developed by the ABS from the relevant Census. There are a number of general limitations which apply to these indices and are detailed by ABS. Specifically, Collection Districts (CD) are excluded from analysis where one or more of the following characteristics are found:

- populations smaller than ten
- five people or fewer employed
- 70% or more people not responding to questions included in the Index as variables
- more than 20% of dwellings non private
- off shore and migratory CDs.

CDs not included in analysis were noted in maps in Chapter 6 Health service district profiles.

Survey of disability, aging and carers
This survey was conducted by the ABS in 1998. It is the fourth survey in a series with a five-six year frequency of collection. The first survey was conducted in 1981 and the next survey scheduled for 2003. The survey collects information on three population groups; people aged 60 and older, people with disabilities, and their carers. Concepts and definitions used in this survey were taken from the International Classification of Impairments, Disabilities and Handicaps. The final sample in 1998 comprised 36,951 persons in private and non-private dwelling units, and 5,716 persons in cared accommodation. Personal computer assisted interviews were conducted with adults aged over 15 years of age and proxy interviews for young people aged under 15 years. For those aged between 15 and 17 years, interviews were conducted dependant on parent permission. Data were weighted to account for different sampling fractions, to represent the entire Australian population. This weighting included age group, sex, territory/state, and capital city/balance of state.

Survey of education and training (1997) and education and training experience (2001)
These surveys were conducted by the ABS in 1997 and 2001. Information collected included sociodemographic characteristics and work history details together with educational qualifications held, recent and intended study, and details of training courses completed in the last 12 months. The survey included persons 15-64 years who met selected criteria for inclusion, the effective survey sample was approximately 13,800 dwellings yielding 22,700 completed interviews in 1997. Data were collected by personal interview conducted by trained interviewers.

Vaccinations rates
Vaccination data for children were derived from the Australian Childhood Immunisation Register (ACIR). Pneumococcal, influenza and Hepatitis B vaccination data for older persons and Indigenous people were derived from Queensland Health Vaccination Information and Vaccination Administration System (VIVAS).

Well persons health check
The Well person’s health check was a community based screening program designed to provide early detection and treatment of sexually transmitted infections and non-communicable disease risk factors. It provides health information to assist the community and health services in planning for improved health. The program was implemented in remote Indigenous communities in North Queensland and represented a collaborative effort of the Tropical Public Health Unit Network, Apunipima-Cape York Health Council,
Health Service Districts of Queensland Health and the individual communities. The screening was conducted in 1998-2000.

General limitations of data

Cause of death or hospital separation
Recorded ‘cause of death’ and ‘cause of hospital separation’ are well known to suffer from significant error throughout the world. Notably, hospital separation statistics reflect events of separation rather than individuals; thus re-admissions to another hospital or the same hospital are included in the statistics. Further to these general sources of error, specific mention must be made of the underestimation of recording of diabetes, mental disorders and self-inflicted injury burden of disease in these databases, and the exclusion of psychiatric hospitals from the hospital separation data prior to 1997. Death and hospitalisation results are presented without attempts at correction for underlying cause. Furthermore coding practice may vary over time and between areas. Knowledge of specific changes (eg change in coding practice related to diabetes hospital separations in 2000/01) has precluded certain comparisons. These limitations are noted in the text, where applicable. Lack of comparability of conditions based on coding using ICD-9 and ICD-10 has been identified as a limitation in some trend analyses in this report. These limitations have been noted in the text where applicable and derive from comparability data reported in Table 3.19.

Indigenous identification
Poor Indigenous identification in death and hospital separation data is one of the main limitations of these data sets. A variable proportion of the death certification and hospital separation data presented here does not include any Indigenous identification. Identification that is recorded is a mixture of self-identification and identification assigned by the person completing the form. Census data records ethnicity according to self-identification, and there are indications of possible under-enumeration of Indigenous peoples in remote areas in the 2001 census. Due to these problems with both the case number and population, accurate rates in Indigenous peoples cannot be calculated.

Using rates in geographic areas with a high proportion of Indigenous population as a proxy for Indigenous rates could be subject to four possible sources of bias:

- Under-estimation of the proportion of Indigenous population in areas leading to inaccurate classification of areas by Indigenous population, leading to exaggeration of the excess mortality and hospitalisation
- In the cluster of five Statistical Local Areas (SLAs) with the greatest proportion of Indigenous population there may be “dilution” of the Indigenous population by about 30% non-Indigenous population. The health status of the non-Indigenous peoples is likely to be better than the Indigenous, thus underestimating the true morbidity and mortality of Indigenous peoples in these areas
- The five SLAs with the greatest proportion of Indigenous population are all in remote parts of the state where the general health status of people is considered to be worse than in towns or cities. Therefore, using these areas as proxies for Indigenous health status throughout the state would fail to differentiate between the health status of Indigenous peoples living in larger towns or cities and those living in remote areas
- In Torres SLA, a significant number of deaths for Indigenous peoples were unregistered in the period 1992-98. In addition, research indicates that the health of Torres Strait Islanders is better than that of Aboriginal people for most health indicators, excluding diabetes

Survey biases
Each of the surveys sourced in this report are subject to a number of biases, specifically recall bias, exclusion of Indigenous and Culturally and Linguistically Diverse (CALD) populations due to telephone access, cultural appropriateness and language barriers. Most ABS and Queensland Health surveys had very good response rates of 75% or above indicating that response bias has been minimised as much as is practicable. In contrast, AusDiab achieved very low response rates, as discussed under that survey heading.
**Glossary of terms**

**Accessibility/remoteness** – Three measures of accessibility/remoteness were used in this report: Rural, Remote and Metropolitan Area classification (RRMA), the Accessibility/Remoteness Index of Australia (ARIA) and the Remoteness Areas (RA). The measure used depended primarily upon data availability. Due to small numbers in some sub-classifications, categories have been aggregated where appropriate.

The three zone/seven category Rural, Remote and Metropolitan Area classification (RRMA) was developed in 1994 jointly by the Commonwealth Department of Primary Industries and Energy and the Commonwealth Department of Human Services and Health. The seven RRMA categories are ‘capital cities’, and ‘other metropolitan centres’ within the metropolitan zone, ‘large rural centres’, ‘small rural centres’ and ‘other rural centres’ within the rural zone, and ‘remote centres’ and ‘other remote centres’ within the remote zone.\(^{147}\) Accessibility/remoteness was determined using the Accessibility/Remoteness Index of Australia (ARIA).\(^{148}\) In ARIA, remoteness, a geographic variable, is measured in terms of how far the population must travel to access services. Remoteness was also determined using the six category Remoteness areas (RA); Major cities, Inner regional, Outer regional, Remote, Very remote and Migratory.\(^{149}\) This latter classification was introduced in 2002, and was based on the ARIA Index scores. The Remoteness area classification has been adopted to generate consistency with other recent published analyses.

**Body Mass Index (BMI)** estimates the proportion of body fat, calculated from height and weight where BMI=weight (kg)/height (m)^2. BMI values are grouped into categories. For adults 18 years and older, underweight is BMI score less than 20, acceptable weight is 20-24.9, overweight 25-29.9 and obese >30. In 2003, NHMRC and WHO amended these definitions to underweight is a BMI score less than 18.5, acceptable weight is 18.5-24.9, overweight 25-29.9 and obese >30. All studies reported in Health Determinants Queensland use the former definitions. For children, BMI is compared with age and gender-specific BMI percentile charts.

**Community capacity** is a collection of characteristics and resources which, when combined, improve the ability of a community to recognise, evaluate and address key problems.\(^{150}\)

**Dental caries prevalence** is the proportion of the population with one or more teeth that are either decayed (D), missing (M), or filled (F) due to caries.

**Diabetes prevalence** by clinical assessment, classification of abnormal blood glucose based on values for the oral glucose tolerance test and venous plasma glucose concentrations:

<table>
<thead>
<tr>
<th>Glucose Tolerance</th>
<th>Fasting glucose (mmol/l)</th>
<th>2-hr glucose (mmol/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2 Diabetes</td>
<td>≥ 7.0</td>
<td>Or ≥11.1</td>
</tr>
<tr>
<td>Impaired glucose tolerance (IGT)</td>
<td>≤ 7.0</td>
<td>And 7.8 – 11.0</td>
</tr>
<tr>
<td>Impaired fasting glucose (IFG)</td>
<td>6.1-6.9</td>
<td>And &lt; 7.8</td>
</tr>
</tbody>
</table>

**Disability with selected restrictions** – people with a disability which restricts their participation in self-care, mobility, communication, employment and/or education. Includes all children with a disability aged less than 5 years.\(^{143}\)

**Foetal death (stillbirth) rate** – the number of foetal deaths as a proportion of the total number of births.

**Hazardous and harmful alcohol consumption** - the levels of risk associated with alcohol consumption calculated from the 1998 and 2001 National Drug Strategy Household Surveys were as below.\(^{151}\) These guidelines were revised by NHMRC in October 2001.
YOUNG PEOPLE

<table>
<thead>
<tr>
<th>Gender</th>
<th>Low Risk</th>
<th>Hazardous</th>
<th>Harmful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>&lt; 40 grams of pure alcohol or four standard drinks per day</td>
<td>41-60 grams or five or six standard drinks per day</td>
<td>&gt; 60 grams of pure alcohol or more than six standard drinks per day</td>
</tr>
<tr>
<td>Female</td>
<td>&lt; 20 grams of pure alcohol or two standard drinks per day</td>
<td>21-40 grams or three or four standard drinks per day</td>
<td>&gt; 40 grams of pure alcohol or more than four standard drinks per day</td>
</tr>
</tbody>
</table>

Hospital separation rate – the total number of separations in all hospitals (public and private) providing acute care services per 100,000 estimated resident population at 31 December of the reference year. A separation is an episode of care which can be a total hospital stay (from admission to discharge, transfer or death) or a portion of a hospital stay ending in a change of status (for example from acute care to rehabilitation). The inclusion of status changes has been progressively introduced since 1995-96. Hospitals providing acute care services are those in which the treatments typically require short durations of stay. Rates and case numbers are reported using financial years.

Hypertension – by clinical assessment, untreated hypertension was defined as systolic pressure greater than or equal to 140mmHg or diastolic pressure greater than or equal to 90mmHg and not on hypertensive treatment. Classification of blood pressure:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Systolic (mmHg)</th>
<th>Diastolic (mmHg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt;140</td>
<td>&lt;90</td>
</tr>
<tr>
<td>Borderline mild hypertension</td>
<td>140-159.9</td>
<td>90-94.9</td>
</tr>
<tr>
<td>Mild (above borderline) hypertension</td>
<td>160-179.9</td>
<td>95-104.9</td>
</tr>
<tr>
<td>Moderate and Severe hypertension</td>
<td>≥180</td>
<td>≥105</td>
</tr>
</tbody>
</table>

Index of socioeconomic disadvantage / SEIFA – Five indices are compiled by the ABS following each population Census. Each index summarises different aspects of the socioeconomic condition of areas. The Index of Relative Socioeconomic Disadvantage is the SEIFA index most frequently used in health analysis. The particular attributes summarised by this index include low income, low educational attainment, high unemployment and jobs in relatively unskilled occupations. Most commonly, SEIFA indices are used to group survey respondents into quintiles or deciles of a particular index. Comparisons can then be made between respondents living in areas based on SEIFA quintiles (or deciles) across a range of health-related characteristics such as self-assessed health status.

The Indices are compiled at the level of the Census Collector’s District (CD) in which a person lives but are most commonly reported at the Statistical Local Area (SLA) level.

Infant mortality rate – the number of deaths of children under one year of age per 1,000 live births.

Life expectancy – the average number of years a newborn infant of a given sex would be expected to live if the age specific death rates of the reference period continued throughout his or her lifetime. For persons aged 65 years of a given sex, it is the average additional years of life expected if the age specific death rates of the reference period continued throughout his or her remaining life.

Live birth – the delivery of a child weighing at least 500 grams at delivery (or, when birthweight is unavailable, of at least 22 weeks gestation) who after being born, breathed or showed any other evidence of life such as a heart beat.

Metabolic syndrome – the term given to a clustering of CHD risk factors with insulin resistance at its core. The European Group for the Study of Insulin Resistance (EGIR) defines metabolic syndrome as the presence of insulin resistance and at least two of the following components: impaired glucose metabolism (impaired glucose tolerance (IGT) or impaired fasting glycaemia (IFG) or diabetes), hypertension, dyslipidaemia or central obesity. Analysis of AusDiab data reported in the HDQ used the EGIR definition, minus the insulin resistance requirement.

Neonatal death – death of any child weighing at least 500 grams at delivery (or, when birthweight is unavailable, of at least 22 weeks gestation) who was born alive (as defined under live birth) and who died within 28 days of birth.
**Notifiable conditions** – Under section 32(1) of the *Health Act 1937* any disease or disability may be declared notifiable. The list of notifiable conditions appears in the schedule of the Health Regulations 1996. Medical practitioners and laboratories are required to notify the Chief Health Officer of Queensland Health of any person suffering from a notifiable condition.

**Perinatal mortality rate** – the annual number of foetal and neonatal deaths per 1,000 live births and foetal deaths combined.

**Primary prevention** is the protection of health by measures which eliminate causes and determinants of departures from good health and control exposure to risk. Primary prevention decreases the number of new cases of a disorder or illness and premature death (reduces incidence).

**Secondary prevention** is defined as the measures available to individuals and populations for the early detection and prompt and effective intervention to correct departures from good health. Secondary prevention may lower the rate of established disease in the community.

**Social capital** consists of those features of social organisation such as density of association membership, levels of interpersonal trust and norms of reciprocity (ie give and take or mutual action) which act as resources for individuals and facilitate collective action. It is a collective dimension of society external to the individual and is an ecological characteristic.

**Standardisation of rates** is a method used to compare populations which have different age-sex structures thereby precluding the comparison of unadjusted outcome rates. Two methods are available: direct and indirect standardisation. The direct rate is the rate experienced by a standard population, if the age specific rates of the population in the geographical area of interest applied to the standard population. The indirect rate is the ratio of the total number of people observed (actual number) having an attribute compared to the total number of people expected (expected number) having an attribute (disease or condition, cause of death) in the geographical area of interest. The expected number is calculated based upon the assumption that the population in the geographical area of interest experienced the same age specific rates as the standard population.

The standard population used in this report varies according to the years of data that are being considered for the population of interest. Typically the standard population is the estimated resident population for Australia 1991.

**Tertiary prevention** consists of the measures available to reduce or eliminate long term impairments, disabilities and complications from established disease, and to minimise suffering caused by existing departures from good health.
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