

1 Introduction

Background

Children and young people are often referred to as ‘the future of society’. This statement highlights the importance of their wellbeing and healthy development as the foundation for adulthood, and as a preparation for the responsibilities of active citizenship in later life.

There is now substantial evidence that the wellbeing and healthy development of children and young people are the result of complex interactions of the social, biological and ecological environments in which they live (Stanley et al. 2002). If these are supportive, they provide a foundation for the development of competence and coping skills that underpin learning, behaviour and health throughout life. However, a lack of enabling social and environmental conditions is reflected in poorer developmental and health outcomes.

The purpose of this atlas, now in its second edition, is to provide policy makers, practitioners and communities with information about the current health and wellbeing of South Australian children and young people, from birth to the age of 24 years, and to illustrate the range of factors that are associated with their wellbeing and developmental health outcomes.

Wellbeing and healthy development

Wellbeing has been defined as “the state of being or doing well in life; happy, healthy, or prosperous condition; moral or physical welfare (of a person or community)” (OED 2002). In the broadest sense, it describes an everyday resource – the capacity to adapt to, respond to, or control life’s challenges and changes (Frankish et al. 1996). The term ‘developmental health and wellbeing’ is also used to portray the developing human organism’s response to experiences and environmental circumstances around them (Keating and Hertzman 1999).

From a range of disciplinary perspectives and research, there is increasing consensus about the principles that underpin the development of competence and wellbeing in children and young people (Shonkoff and Philips 2000):

- The process of development is complicated, and is characterised by unexpected events that occur in the lives of children, young people and their families and within the communities in which they live.

- There is marked heterogeneity among children and young people and their families, and there are wide variations in their abilities at any point in time. Viewing all children’s functioning within the context of a simple developmental continuum is, therefore, a limited approach.
- There are many pathways to competence, and specific predictions about particular individuals are difficult to make.
- However, there has been a significant increase in our recognition of the importance of the effect of early life experiences in setting the stage for later behaviour and relationship formation. New research indicates that the social and physical environments of the infant and young child organise the experiences that shape the networks and patterns within the brain (Cynader & Frost 1999). However, this does not mean there is little capacity for change after the period of early childhood. Evidence also shows there is developmental flexibility and resiliency, even for children who grow up in adverse circumstances.
- There is interplay between sources of vulnerability and resilience and their interactive influences on developmental pathways as children move through the early years of life into middle childhood and then on to adolescence (Rutter 1985). Related to this, are the effects of cumulative burdens and buffers, rather than the importance of single risk or protective factors as the most significant determinants of individual pathways and outcomes.

To become productive and contributing adults, children and young people need to live in environments that provide some order and meet their basic physical, emotional and material needs, as well as their developmental and learning requirements (Bronfenbrenner 1979). They prosper best within families and communities that provide security, nurturing, respect and love. Research findings about those children and young people who manage to thrive in spite of apparently negative circumstances also indicate the critical importance of a consistent, caring adult who is able to engage them in an ongoing relationship (Rutter 1985). Other studies have emphasised that children require adults in their immediate environment who are capable of instilling a positive sense of responsibility and passing on social and moral expectations. In addition to sound relationships

with adults in their communities, children and young people need freedom from discrimination, opportunities to build self-reliance and confidence, and a sense of justice in their world (McCain & Mustard 1999).

Public discussion often focuses heavily on the nature of 'family', but the most important factor is how family members interact and deliver their fundamental needs. Looking at the function of families leads to the question of whether the community helps or hinders families to fulfil their roles and responsibilities. To be the good parents that most want and hope to be, adults need employment and educational opportunities. To ensure wellbeing for family members, there must be adequate health care, housing, safety, effective schools and quality child care. For optimal child development, families need support from neighbours, schools, community agencies and governments, and opportunities to develop relationships and pursue their interests (Weissbourd 2000).

A lack of resources in any of the essential dimensions decreases a family's ability to fulfil its mission. The effect of poverty supersedes all others (Acheson et al. 1998). Without adequate income, the likelihood of having good health, housing, education or any other opportunities diminishes substantially (Keating & Hertzman 1999). The resulting tension increases the likelihood of instability and stress in relationships among family members, further decreasing a family's ability to maintain a supportive environment for the development of children and young people. Given what is now known about the factors influencing the development of the brain, the pathways that affect learned behaviour and wellbeing and the possible long-term effects of a disadvantaged childhood, there is an urgent need to focus on minimising adverse environments for children and young people.

However, the development of wellbeing and health is not only the result of genetic inheritance and socio-environmental influences on each person. It is as much a population phenomenon as a purely individual one (Keating & Hertzman 1999). There is a strong association between the health of a population and the size of the social differences between members of that population. This has come to be known as the 'gradient effect' (Acheson et al. 1998; Keating & Hertzman 1999). In societies where there are marked social and economic differences between individuals in the population, the overall level of wellbeing and health in the population is lower than in societies where

these differences are less pronounced (Keating & Hertzman 1999). Furthermore, this gradient effect exists for a wide range of developmental outcomes – from physical and mental health, to behavioural adjustment, literacy, and mathematical achievement (Keating & Hertzman 1999). The gradient effect is evident whether one looks at differences in current socioeconomic status or in that of the family of origin. These social status effects appear to persist, from birth, through adulthood and into old age (Power & Hertzman 1997).

Evidence is now linking many of these research findings together, those about brain development and behaviour of individuals, and others on lifespan gradient effects in the wellbeing of whole populations. Most significant is the finding that for all areas of development, steep gradients are associated with overall poorer outcomes (Keating & Hertzman 1999). Thus, the underlying factors that determine wellbeing and health are deeply embedded in social circumstances (Acheson et al. 1998). These patterns of population gradients, especially their longitudinal nature, suggest a potentially important role for early experience in shaping coping skills, resiliency and the brain-mediated immune and hormonal responses at the individual level, which can then show up later as effects across populations (Keating & Hertzman 1999).

Recent changes in social conditions

In South Australia, children and young people live within the settings of family and kinship, work, neighbourhood, culture and community that together form society. Over the last two decades, there have been major social changes in the areas of work and employment, resources for families, community supports and the balance between them. As indicated, significant research has led to a better appreciation of the conditions that influence whether children get off to a promising or a difficult start in life. However, the ability to use this knowledge well has been constrained by rapid changes in the social and economic circumstances under which children and young people, and their families, are living (Acheson et al. 1998; Shonkoff & Phillips 2000). There have been marked alterations in the nature and amount of employment engaged in by parents of children, and in opportunities for the employment of young people; greater challenges in balancing work and family responsibilities; significant economic hardship for many families and young people despite overall increases in rates of parental employment and a stronger economy (Gregory 1999); growing numbers of infants and children spending time in

child care settings; a greater awareness of the effects of stress on children and young people as a result of serious family problems; and the persistence of significant disparities in health, educational and developmental outcomes across the population (Keating & Hertzman 1999; Glover et al. 1999). The societal transitions and the ensuing disruptions experienced by families and communities have been “sudden, dramatic and of unprecedented scope” (Keating & Hertzman 1999), and appear to be continuing at a similar rate. The long-term impact of a rapidly changing society on children and young people and their families is not yet known. We need to understand better the complex interactions between individuals and their families, the pressures exerted by their environments and social structures, and how these factors will determine the wellbeing and health of future generations of Australians (Nicholson et al. 2002).

The impact of disadvantage

Alongside these changes, it is also concerning to note that the gap between rich and poor has increased in Australia over the last two decades (Hugo & Ambagtsheer 1998). This has been characterised by a growth in high-income groups, and a larger growth in low-income groups, which is thought to be partly due to reduced access to services such as health and education (Hugo & Ambagtsheer 1998). In particular, sole parents and children are more likely now to be living in poverty and susceptible to social isolation, poor nutrition and ill health because of limited resources and fewer support networks (Davis et al. 1998; DCPC 1999).

In South Australia, many children and young people face increasing socioeconomic disadvantage, which has a highly adverse effect on their wellbeing and health, and is likely to continue into adult life. Socioeconomic disadvantage takes many forms. For some, it is the inability to obtain the essentials of life; for others, a matter of low income; for others, a problem of social inequality (Spicker 2002). Defining disadvantage only in terms of poverty or low income minimises the importance of social isolation, access to services, and the quality of housing or parental level of education when considering children and young people's health and wellbeing (Najman 1993). Such definitions need to extend beyond a lack of economic resources (Mathers 1996), and to encompass many of the serious environmental, structural and social issues faced by children and young people and their families (National Health Strategy 1992; Spencer 1996). Examples of these are under- and unemployment, discrimination and

violence, unsupported lone parenthood, unwanted teenage pregnancy, educational under-achievement, admission into state care, child abuse and neglect, failure to thrive, and behavioural and mental health problems.

Overwhelming evidence continues to point to a powerful association between the socioeconomic standing of a family and the health of their children (Nossar 2002), and in Australia, it has been argued that ‘poverty is the single greatest threat to child and community health and wellbeing’ (Jolly et al. 1991). There are many research studies about socioeconomic disadvantage, its long-term implications for the wellbeing of children and young people and their families, and the eventual high costs to society. The relationship between disadvantage and health and wellbeing is particularly crucial for younger children, as they are developmentally more vulnerable and experience deleterious circumstances that are beyond their control (Ambagtsheer and Glover 1998).

The short and long-term consequences of socioeconomic disadvantage for children, young people and society are well documented (McLeod and Shanahan 1993; Turrell et al. 1999). Socioeconomic disadvantage impairs physical growth, cognitive development and social and emotional functioning (Hill and Sandfort 1995; Korenman et al. 1995). The incidence, duration and chronicity of childhood poverty also have multiple negative effects on children and young people's educational ability and achievement, and later adult productivity (as measured by wage rates and hours worked), while increasing the likelihood of adult welfare dependency (Duncan 1994; Lichter 1997). Research also indicates that being born into a relatively disadvantaged family increases the probability of accumulating risks associated with that disadvantage. Adversity experienced early in the life course (before the age of seven) has the strongest impact on the formation of individual resources in later life. Subsequent experiences of adversity then add to the deterioration of already reduced resources (Schoon et al. 2001).

Indicators of disadvantage are numerous, and have been associated with factors such as infant and maternal mortality and morbidity, low birthweight and poor physical growth, developmental delay, discrimination and racism, disability, learning and behavioural problems, mental health issues, parental smoking habits and parental disability. They also include lack of parental education, lack of safety of the home environment, and problems with families' access to and use of services. However, this does not mean that all parents who

are socioeconomically disadvantaged will raise children with these difficulties. A complex relationship exists between the factors that contribute, such as low socioeconomic status, low income or occupational class, and the resulting implications for children and young people and their families. This inter-relationship is not yet fully understood. However, there is much that can be done, for improved quality of early life carries benefits into adult life (for example, in terms of improved health risk particularly in relation to chronic diseases (Fonagy 2001)). Not only do the conditions of early childhood help to set the conditions for wellbeing and health in later life but, conversely, the better the quality of the population produced by the improved childhood conditions, the greater the productivity of the society concerned (Fogel 1994). As indicated, research suggests that those countries with a more egalitarian distribution of income and an investment in the years of childhood have better health and wellbeing outcomes for their populations. Therefore, policies that aim to reduce health, educational and developmental inequalities should also address disparities in income distribution (Power & Hertzman 1997).

Further research into the complex pathways that underlie disadvantage and its effects on wellbeing will provide more possibilities for prevention, many of which may be more effective than the proximal solutions which are often too close to the problem to influence it significantly (Nossar 2002). For example, the most effective preventive strategies for improving low birthweight and infant death rates for Indigenous mothers may be to tackle the disempowerment, despair, discrimination and dislocation of Indigenous communities, rather than initiating specific health behaviour programs targeted at these women, who may feel further victimised and undermined (Stanley et al. 2002). Issues such as these are profoundly important to the development of effective solutions: where best to put efforts and resources to make the greatest improvements and enable reductions in inequalities (Stanley et al. 2002).

Changes in indicators of wellbeing

In South Australia over the last twenty years, there have been significant improvements in many indicators of wellbeing in the population overall – for example, continuing increases in life expectancy, falling perinatal and infant mortality rates, and reductions in mortality rates from many diseases as a result of improved living conditions, technological advances (such as better treatments for heart disease) and specific environmental interventions (such as road safety initiatives).

However, not everyone has shared equally in these benefits. In the late 1990s, the life expectancy of Indigenous South Australians was estimated to be almost 15 years less than the general population, at 60.1 years for males and 67.6 years for females. This indicates that life expectancies for Indigenous people in this State are still many years behind those for non-Indigenous people. Large inequalities in death rates from numerous causes also persist for other disadvantaged populations in South Australia (Glover et al. 1999).

Many indicators show that the wellbeing of children and young people has improved (AIHW 2002). However, in other areas, evidence suggests that outcomes have remained static or have declined, which is a concerning trend in an affluent country such as Australia. For example, mental health problems now affect up to 20 per cent of young people (Sawyer et al. 2000), and, when persistent, are associated with poor educational outcomes, relationship difficulties, and high rates of welfare dependence, delinquency and criminality (Nicholson et al. 2002). Suicide rates continue to be among the highest in the developed world, especially for young men in rural areas. Particular groups of children and young people (such as Indigenous children and youth, refugee children and young people being held in immigration detention facilities and other young migrants from war-affected countries, children in protective care, juvenile offenders, young homeless people and those who leave school early) continue to have poorer outcomes, particularly in the areas of health, development and education.

Chronic health problems such as asthma, obesity, arthritis and myopia are affecting growing numbers of children and young people, and preventable injuries and harmful behaviours (such as smoking and substance use) remain prevalent, despite the introduction of a range of national prevention initiatives (Nicholson et al. 2002). Once more, these problems are distributed unequally within the Australian population and are more prevalent for children disadvantaged by low income, poor parental education, rural location, and unsupported single parent and Indigenous family status (Nicholson et al. 2000; Turrell et al. 1999). The increases have been so substantial that the levels of morbidity can only be tackled by preventive strategies, as the health, education and psychosocial care systems cannot meet the demand for treatments and services, and, in any case, for many of these conditions, we lack effective solutions (Stanley et al. 2002). The rapid changes in the social and demographic structures of populations, communities and the environment, add further

complexity and a sense of urgency. All have the potential to adversely affect developmental health and wellbeing (Keating & Hertzman 1999). Simplistic models that ignore the multilevel and complex nature of pathways, and policies and interventions that focus on a limited number of proximal “risk factors” at some point along these pathways, are not going to provide the necessary and urgently needed solutions (Stanley et al. 2002).

Some of the indicators associated with disadvantage and, possibly, with poorer outcomes for the wellbeing of children and young people are outlined below.

Aboriginality

Compared with other Australians, Aboriginal people and Torres Strait Islanders are disadvantaged with regard to a broad range of socioeconomic indicators, including education, employment, income and housing, and are therefore at greater risk of ill health and poorer outcomes (ABS & AIHW 2001). There is substantial evidence that the health of Indigenous children is significantly worse than that of non-Indigenous children (ABS & AIHW 2001). In South Australia between 1997 and 1999, the mortality rate among Indigenous infants remained nearly twice as high as the rate for non-Indigenous infants (ABS 1997). Deaths among Indigenous children aged 1 to 14 years were 2.5 times those for other Australian children. There is overwhelming evidence that the increased prevalence of diseases such as trachoma, chronic ear infections, rheumatic fever and the greatly increased perinatal mortality rate reflect the poorer socioeconomic circumstances of Indigenous children (Jolly et al. 1991; ABS & AIHW 2001).

Mortality and ill health

Reduced growth in foetal life is associated with increased mortality and morbidity in the first year of life, and throughout childhood (Vik et al. 1996). People who had low birthweight, or who are undernourished at birth, may be at increased risk of some diseases (non-insulin dependent diabetes, hypertension, coronary heart disease) in later life (Barker 1998). These associations cannot be explained by confounding variables operating in subsequent adult life. Furthermore, factors related to maternal vitality (such as their own birthweight, growth in childhood, nutrition, socioeconomic position, and behavioural risk-factor profile in adulthood) affect both birthweight in their offspring and maternal disease risk (Lawlor et al. 2002).

Reduced foetal growth is more common in deprived areas (Barker 1994). This and other perinatal risk factors most predictive of adverse perinatal outcomes indicate that a link can be drawn between these factors and the socioeconomic position of the women for whom these events are recorded (Lawlor et al. 2002). For instance, there is an association between the risk of adverse perinatal outcomes and single, teenage and Aboriginal women (Ambagtsheer and Glover 1998). The areas with higher risk of adverse perinatal outcomes are those to the north and west of Adelaide and the outer southern suburbs, that is, those with the highest level of factors closely associated with poverty (Taylor et al. 1995).

There is a range of health problems that affect children and young people disproportionately. Two of these – accidental injury and mental health – are among the six National Health Priority Areas (NHPAs) identified by the Commonwealth Department of Health and Ageing (DoHA), and State and Territory governments (Vimpani et al. 2002). The NHPAs provide a focus for national collaboration on specific chronic diseases that have the potential for health gain and improved outcomes for consumers; that pose a significant burden of disease; and that have the support of all jurisdictions. The other four NHPAs are cardiovascular health, diabetes mellitus, cancer control and asthma. The highest burden of disease (a measure of life years lost due to premature mortality and years of healthy life lost due to disability) for Australian children is a result of acute and chronic respiratory diseases and mental disorders (AIHW 2002).

Injuries continue to be the leading causes of death among children, and one of the main causes of illness. The most common reasons for hospitalisations following injury are falls, pedal cyclist injuries and accidental poisoning. Injury also disproportionately affects young people – in particular, young males. Accidents are the leading cause of death in those aged 12 to 24 years (60 deaths per 100,000 population). Prevalence of injuries in young people is higher than in any other age group, and (apart from the 75 years and older group) death and hospitalisation rates are higher than for any age group. Injury deaths have dropped by around 60 per cent in two decades largely as a result of falling motor vehicle accident deaths (AIHW 2002). However, deaths from motor vehicle and other transport accidents still remain overwhelmingly the most common cause of accidental injury and death. Death from injury is around four times more common in young males than young females.

Mental health is another National Health Priority Area, and mental disorders disproportionately affect young people. They are frequently associated with longstanding impairment and emotional and behavioural problems, and are therefore of significant relevance to future wellbeing. In the National Survey of Mental Health and Wellbeing (ABS 1998), the prevalence of mental disorders was 27 per cent in young adults aged 18 to 24 years, higher than in any other adult age group. Among young males, the most common disorders were substance abuse disorders, affecting 22 per cent of those aged 18 to 24 years. For males aged 18 to 24 years, the most common forms of substance dependence were alcohol dependence (12 per cent) and cannabis dependence (6.8 per cent). For females, point prevalence rates of depression were 14 per cent, with rates of ten per cent for both anxiety and substance abuse disorders. Eating disorders are primarily an adolescent disorder with an onset rarely after the age of 20 years. The prevalence of anorexia nervosa is around 0.5 per cent, and that of bulimia nervosa around 1 per cent, of young women aged 15 to 25 years.

Among children aged 4 to 12 years, 15.0 per cent of boys and 14.4 per cent of girls have a number of emotional and/or behavioural problems. Some children also experience more serious mental disorders; for example, among children aged 6 to 12 years, 19.3 per cent of boys and 8.8 per cent of girls are reported to have attention-deficit hyperactivity disorder (Sawyer et al. 2000). Fourteen per cent of children and adolescents aged 4 to 17 years in Australia have mental health problems (Sawyer et al. 2000). There is a higher prevalence of child and adolescent mental health problems among those living in low-income, step/blended and sole-parent families. Adolescents with mental health problems report a high rate of suicidal ideation and other health-risk behaviour, including smoking, drinking and drug use (Sawyer et al. 2000).

Among young people, mortality patterns associated with mental disorder have shifted in recent decades (Vimpani et al. 2002). Australia's male suicide rates have been consistently high over the past decade, with 1997 rates for males aged 12 to 24 years being 24 suicides per 100,000, the fifth highest in the world. The highest rates in any age group are for males in their early to mid twenties (40 suicides per 100,000 per year). Mortality due to drug dependence has also increased markedly in the past 20 years in males and is now at the rate of six deaths per 100,000 in the 12 to 24 year age group.

There are a number of other behaviour risks for

children and young people, many of which have major implications for their future health. Tobacco use is the most significant preventable cause of future disease-related morbidity and mortality (Vimpani et al. 2002). The proportion of young Australians using tobacco has remained consistently high. In 1998, 16 per cent of those aged 14 to 19 years reported that they were regular smokers, with no difference in rates between males and females. Rates for those aged 20 to 24 years were 31 per cent. These rates are similar to those reported in the mid-1970s and are particularly disappointing in the light of an apparent downward shift in youth smoking rates in the mid-1980s (Hill et al. 1999). Given the particular health risks associated with smoking for females, the high rates of tobacco use among young women are of great concern. In the 1999 Australian Secondary Students Alcohol and Drug Survey, 13 per cent of children aged 12 to 14 years reported smoking tobacco and 24 per cent reported consuming alcohol in the week prior to the survey. Of children aged 12 to 15 years, 29 per cent of boys and 23 per cent of girls reported having taken an illicit drug at least once (AIHW 2002).

Alcohol is reportedly widely used by young people as a recreational drug from the age of 15 years onwards. It has been estimated that 1.4 per cent of males aged 16 to 24 years drink more than five standard drinks every day and a further 11.2 per cent, on most days. The comparable figures for females are 0.1 per cent and 1.1 per cent. Binge drinking also appears to have become a commonly accepted part of the youth subculture. Marijuana is the illicit drug most commonly used by young Australians (Hill et al. 1999). According to the 1998 National Drug Strategy Household Survey, which gathered information from over 10,000 people aged 14 years and over, 34.6 per cent of 14 to 19 year-olds reported recent use – up significantly from 28.7 per cent in 1995. Amphetamines were used recently by 11.5 per cent, hallucinogens by 11 per cent, ecstasy by 8 per cent, and sedatives by fewer than five per cent of those aged 16 to 24 years respectively. The proportion using heroin recently was low (1.4 per cent), in contrast to the common perception that heroin is the main illicit drug affecting young people.

There has been increasing concern about the rising levels of overweight and obesity in children and young people in Australia, not only because of the health consequences in childhood and adolescence but also because of the greater risk of obesity and chronic disease in adulthood (Magarey et al. 2001).

In South Australia, data collected by Child and Youth Health indicate that a significant proportion of four year old children in South Australia are obese and overweight. In 2000-01, 16.2 per cent of males and 19.9 per cent of females in this age group were overweight or obese. Furthermore, there was an increase in the proportion of overweight and obese four year old children from 1995 to 2002, from 12.9 per cent to 21.5 per cent for females; and from 10.6 per cent to 18.4 per cent for males.

Similar trends have been noted in other Australian studies (Booth et al. 2001), where the prevalence of overweight and obesity among all children and adolescents has been estimated to be between 19 per cent and 23 per cent. In 1995, the proportion of overweight or obese children and adolescents aged 2 to 17 years was estimated to be 21 per cent for boys and 23 per cent for girls (Booth et al. 2001). A more recent study found that about 25 per cent of children aged 7 to 18 years in Sydney and Melbourne were overweight, practising sedentary lifestyles and consuming a diet high in fat and low in the intake of fruit and vegetables (Booth et al. 2001).

The extent of overweight and obesity is related to technological, social, economic and environmental changes that have reduced physical activity and increased food access and passive energy consumption. A study of fitness levels in Australian children from 1985 to 1997 reported that these have declined, suggesting a decrease in physical activity (Dollman et al. 1999). Increases in sedentary activities, greater use of the motor car for transport, decreases in physical activity, and an increase in the consumption of high energy foods and beverages are likely to underlie the current trend. The prevalence of obesity in children has also risen greatly over the past two decades worldwide (Ebbeling et al. 2002). However, the Australian prevalence rates are high by international standards (Magarey et al. 2001) and, therefore, represent a significant public health concern.

Asthma is one of the most common diseases in Australia, affecting up to 25 per cent of children (Peat et al. 1994). Morbidity due to asthma is significant for children and young people, with high levels of symptoms, Accident and Emergency Department attendances and hospital admissions. Asthma is the second most common reason for admission to a hospital bed in South Australia, with a rate in children aged 0 to 4 years of 1,189 per 100,000 population in 1997-98. Internationally, from a survey of over half a million children from 48 countries, Australia ranks third highest in

prevalence of current wheeze for 13 to 14 year olds and second-highest for 6 to 7 year olds (Williams et al. 1999). Australia's high ranking for asthma prevalence is supported by data for asthma mortality. A comparison of available data from eleven developed countries showed Australia had the highest mortality rate due to asthma in 1990 (Robertson et al. 1995). The total annual cost to the community associated with asthma management in Australia was estimated in 1989 as \$627 million, or \$769 per asthmatic person (Toelle et al. 1995). These costs are likely to have increased since then because of the increases in medication costs and in asthma prevalence.

Disability

To date, there is relatively little data available on children and young people with a disability. In 1998, it was reported that 7.0 per cent of children aged 0 to 4 years, 10.8 per cent of children aged 5 to 14 years and 9.4 per cent of young people aged 15 to 24 years had one or more disabilities (ABS 1999). In South Australia, the areas of Salisbury, Noarlunga and Tea Tree Gully have been estimated to have the highest absolute numbers of children aged 5 to 15 years with a disability (Ambagtsheer and Glover 1998). This data was included in the first edition of the atlas and has not been re-published here. In 1998, the most common disabling conditions were intellectual and other mental disorders and respiratory diseases. The majority of children with a disability attended school (97 per cent), with most of these being enrolled in a mainstream school (AIHW 2002).

Children with disabilities are disadvantaged in many areas of their lives, particularly in the area of access to mainstream human services (Children's Interests Bureau 1994). Parents of children with disabilities may have difficulty in obtaining affordable childcare. As a result, it may be necessary for parents to make alternative arrangements, resulting in one parent being unable to return to the workforce, thus affecting family income. A family's financial disadvantage may be further exacerbated by an extra burden of cost and care for the child who has the disability. A review of family support services undertaken in 1998 by the South Australian Intellectual Disability Services' Council revealed that the median household income of the one hundred families interviewed was significantly lower than the Australian Bureau of Statistics' reported median.

Child abuse and neglect

In general, the geographic distribution of substantiated reports of child abuse (particularly

physical abuse and neglect) follows the pattern of socioeconomic disadvantage shown in other indicators such as housing, education, employment and income. The areas immediately north-west of Adelaide, the outer northern and outer southern suburbs appear to have the highest rates for children aged 0 to 14 years. This effect may be due, in part, to a greater likelihood for families who are disadvantaged to be reported to welfare authorities, although some research indicates that there is an association that exists independently, the result of economic and other significant stressors on parents (Kruttschnitt et al. 1994; Hood 1998).

For those children and young people who experience out-of-home care because of abuse and neglect, education has been identified as the crucial factor for determining positive adult outcomes (Jackson 2001). However, research has consistently shown that the majority of children in care fall behind at school, seldom achieve good qualifications, and are much less likely than their peers to go on to further or higher education (Martin & Jackson 2002). They often come from an environment of abuse and neglect and as a consequence, are more likely to enter the care system already suffering from learning, emotional and behavioural difficulties. It appears that once these children enter the care system, the primary focus has been on meeting their physical and emotional needs. The impact of continual movement between schools as a result of multiple care placements means that problems faced by these children and young people at school fail to be addressed, and are compounded as the child grows older (CREATE Foundation 2002). As a result, they may fail to achieve a good educational outcome, which in turn will have long-term implications for their adult life. Addressing their educational needs has not been recognised as an important factor in the overall wellbeing of these children (CCYP 2001).

Homelessness

Children in homeless families and homeless young people are affected adversely in many ways by the crisis of homelessness and the complex issues that have led to it. For many families and young people, homelessness results from domestic violence, family breakdown, drug and alcohol addiction, gambling and a lack of affordable accommodation. Homeless children and young people may suffer associated behavioural disturbances, higher than average frequencies of asthma, ear infections, skin problems, incomplete immunisation and developmental delay. They are also at major risk of educational disadvantage. Medical assistance tends to be sought on an 'acute

needs' basis rather than through health maintenance and prevention, and families cite transport and treatment costs as barriers to accessing health and other services (Efron et al. 1996). Recent research estimated the number of homeless single people, aged less than 25 years, as 1,238 in Adelaide and 1,054 in non-metropolitan South Australia (DHS 2001b). It seems likely that levels of family homelessness will continue to increase as a result of sustained high unemployment, poverty, the lack of affordable housing and the high levels of family conflict and violence (Horn 1996).

Limitations in the coverage of the atlas

This edition of the atlas is composed of available data for South Australian children and young people from birth to the age of 24 years. The information has been collated from across sectors and from a variety of sources. However, there are some significant gaps. These reflect either a lack of data, the inability to access data that has been collected or a lack of available data at a small area level. This has resulted in a less than complete picture of the wellbeing of children and young people in South Australia.

Particular deficiencies emphasise the paucity of information about health services that are provided for children and young people. For example, there are data pertaining to acute hospital admissions and the reasons for those admissions but only for the total number of admissions, not for individuals. This means that one child with severe asthma may have had multiple hospital admissions, and thus is counted more than once. A similar situation arises for data on consultations with general practitioners, which are also based on occasions of service, not on data for individuals. There are also no data for specialist medical practitioner consultations that are provided within publicly funded hospitals.

There are limited data about health services that are used by children and young people in South Australia. For example, most children and young people will not experience a hospital admission over a 12-month period – and are more likely to require an acute 'primary care' service (including services provided by general practitioners and other health professionals) or a community-based service. However, there are few data about attendances at Accident and Emergency Services or hospital outpatient departments. Furthermore, there are limited available data about the extent or nature of the services established to provide services to children and young people. This means that data about the wellbeing of children and young people receiving prevention and early intervention services,

health and other screening services and specific youth services are not included here. Furthermore, at a state level, the access and usage of services by a range of disadvantaged children and young people cannot be analysed. These deficiencies have significant implications for the planning, monitoring, resourcing and evaluation of health services for children and young people in South Australia over the longer term.

With respect to other services, there are also areas where data are unavailable for analysis. Examples include child care and data for children and young people with disabilities including the nature of services provided to them. However, the atlas documents considerable information about the demography and socioeconomic position of children and young people, various aspects of their health status, their use of a range of services and their area of residence.

Issues specific to age groups

There has been a decline since 1962 in the proportion of children aged 0 to 14 years within the Australian population. However, children form a higher than average proportion of the Aboriginal and Torres Strait Islander population and of the populations in rural and remote areas.

Infants and young children aged 0 to 4 years

The majority of pregnancies and confinements in Australia do not result in mortality or severe illness. However, pregnancy, childbirth and infancy remain a period of significant vulnerability. Problems in the first few days of life, and those associated with the health of the mother, can adversely affect an infant's immediate and future wellbeing and development (AIHW 2002). During pregnancy, the health of infants can be affected by a number of factors, such as maternal behaviours (for example, smoking, medication and other substance use, and excessive alcohol intake), injury and violence, and some health conditions affecting the mother, such as specific infections and diabetes. Maternal nutrition is being increasingly recognised as another important consideration. Health conditions linked to poor nourishment of the foetus include coronary heart disease, hypertension and non-insulin dependent diabetes in later adult life. There is also good evidence that an adequate intake of folate, a B-group vitamin, by the mother before and during early pregnancy, can prevent up to 70 per cent of neural tube birth defects (spina bifida and related conditions) and possibly, other non-neural tube defects (Lumley et al. 2002).

Infant deaths and risk factors relating to the perinatal period are presented in Chapter 4. In South Australia, there has been a dramatic decline in the infant mortality rate over the decade, 1989 to 1999. This is consistent with an overall decrease in the death rate for all children and young people over the same period, but reflects a more significant reduction. Much of the decline can be attributed to the substantial fall in deaths due to Sudden Infant Death Syndrome (SIDS) following the introduction of the educational campaign in 1990 aimed at reducing the prevalence of risk factors for SIDS, including prone sleeping (DHS 2001a). In 2000, there were only five post-neonatal deaths from SIDS compared with an annual average of 38 in the period 1986-90 (DHS 2001a).

Unfortunately, in spite of recent improvements, there remains a very significant disparity between the infant mortality rates for babies of Indigenous mothers (11.2 per 1,000 live births) and those of non-Indigenous mothers (4.2 per 1,000 live births) (DHS 2001a). There is also regional variation evident across the metropolitan and non-metropolitan areas of the State. This reflects identified factors such as parental smoking, alcohol and substance use, co-sleeping when intoxicated, physical abuse and domestic violence, and poor socioeconomic circumstances (DHS 2001a).

The risk factors surrounding birth and the subsequent four weeks that are most predictive of an adverse perinatal outcome are Aboriginal maternal race; single marital status; high parity; previous stillbirth; previous neonatal death; previous pregnancy termination; few antenatal visits; young maternal age; obstetric complications; complications of labour/delivery; homebirth; low birthweight; pre-term birth; low Apgar score; time to establish breathing; congenital abnormality; and perinatal death (Taylor et al. 1995). A number of these factors occur more frequently or are associated with women who are socioeconomically disadvantaged. For the purposes of this atlas, a summary perinatal score has been developed for each postcode (see further on page 166). Postcodes were considered to be high risk for adverse perinatal outcomes if ten or more individual risk factors had a poorer outcome in comparison with the South Australian average. Postcode areas considered to be most at risk for adverse perinatal outcomes have been mapped for each of the three periods for which the analysis was undertaken – 1981-86, 1990-92 and 1995-97. Over time, there has been a reduction in the number of high-risk postcodes, which indicates a significant improvement in outcomes for mothers and babies in these areas. However, the presence

of some postcode areas in all three of the analyses indicates that the overall progress made in outcomes in the State as a whole has not been reflected, nor are these areas experiencing any significant improvements in maternal or perinatal outcomes.

Most live births of infants occur between 37 and 41 weeks of gestation. These births are described as full-term. Infants that are born before 37 weeks are referred to as pre-term. In 1999, approximately nine out of ten (91 per cent) live births in Australia were of full-term babies born between 37 and 41 weeks of gestation (AIHW 2002). The mean birthweight of live births was 3,373 grams (Nassar et al. 2001). In 1999, approximately seven per cent of all babies (17,208 births) were born weighing less than 2,500 grams (including very and extremely low birthweight babies). Of all births, two per cent were of babies of very low birthweight (<1,500 g) and one per cent of extremely low birthweight (<1,000 g). The mean birthweight of all babies of Indigenous mothers in 1999 was 3,149 grams. This was 211 grams less than the Australian average of 3,360 grams in 1999. A relatively high proportion (13 per cent) weighed less than 2,500 grams at birth – almost double the proportion of low birthweight babies nationally (AIHW 2002). Weight at birth is determined primarily by genetic inheritance, but factors such as poor maternal nutrition, maternal stress or smoking can constrain that growth. Growth constraints force the foetus to adapt, and these adaptations may become permanent features that modify tissue functions and possibly disease risk in later life (Barker 1995). Pre-term birth and being small-for-gestational age (two aspects of low birthweight) are both associated with increased morbidity in the infant, and also with parental factors such as maternal smoking and low socioeconomic status (Sommerfelt et al. 2000).

Optimal growth and development in the prenatal period and early childhood are critical to good health over an individual's lifetime. The period of life from birth to four years is one of rapid growth and development, but infants and young children remain developmentally vulnerable. They have no control over their physical and social environments. Their wellbeing and developmental health are largely determined by the living conditions, knowledge and attitudes and lifestyles of the adults who care for them. This vulnerability is exemplified by the rate of substantiated cases of child abuse and neglect. In Australia in 1999-2000, rates were highest for young infants under one year of age, with male infants having the highest rates of all children aged 0 to 14 years (7.1 per 1,000 male

infants and 6.6 per 1,000 female infants) (AIHW 2002). Infants aged less than one year are consistently the age group at highest risk for homicide in Australia (Strang 1993). This is due to both their physical fragility and their absolute dependence. In South Australia for the period 1997-2000, the mortality rate for infants under one year from interpersonal violence was 22.0 per 100,000 population, compared with a rate of 7.5 per 100,000 for the population overall.

A large proportion (35 per cent) of all infant hospitalisations is for conditions originating in the perinatal period (AIHW 2002). Disorders related to length of gestation and foetal growth (37.9 per cent), respiratory and cardiovascular disorders (24.8 per cent) and haemorrhagic (bleeding) and haematological (blood) disorders of the foetus and newborn (11.7 per cent) accounted for 74.4 per cent of hospitalisations for conditions originating in the perinatal period in 1999-2000. The remaining 25.6 per cent of hospitalisations for conditions originating in the perinatal period were for birth trauma, digestive disorders and endocrine and metabolic disorders.

The major reasons for hospitalisation in 2000 in South Australia for the age group 0 to 4 years were otitis media, followed by asthma and prematurity (DHS 2001b). Of the admissions to hospital for preventable external causes, the reasons were falls, exposure to mechanical forces¹ and accidental poisoning. The main surgical procedure undertaken for children aged 0 to 4 years in 2000 was a myringotomy with the insertion of tympanostomy tubes; this is a surgical treatment for persistent otitis media with fluid accumulation behind the eardrum. For many surgical procedures, the probability of having surgery depends on where one lives, an occurrence referred to as "small-area variation" (Wennberg & Gittlesohn 1982). The implication of variations in rates, which cannot be explained by differences in disease prevalence, is that people in low-use areas may be receiving too little care and those in high-use areas may be receiving too much or inappropriate care. Area variation is thought to occur because of differences in community characteristics and methods of health care delivery, including the number, type and opinions of medical practitioners (Paul-Shaheen et al. 1987). Examples of small area variation can be seen clearly in the mapping of myringotomy, and tonsillectomy with and without adenoidectomy, from page 266 onwards.

¹ This includes exposure to inanimate and animate forces i.e. to objects, and to people or animals.

Children aged 5 to 14 years

This period of childhood marks the transition to school and the laying down of a foundation for learning and education that will be significant throughout life. For children to learn optimally, they need good health, to be able to learn and to have supportive and secure family and learning environments. As indicated, many studies have found a strong association between family socioeconomic status and child wellbeing (Jolly 1990). Family income, parental employment status and/or parental education are all strongly associated with one another and are used as indicators of socioeconomic status. In the previous edition of the atlas, the proportions of students in primary and secondary schools who were funded by the SA Government's School Card Scheme were mapped. The mapped distribution of this indicator was consistent with the pattern of socioeconomic disadvantage. Unfortunately these data are no longer accessible at the postcode level.

Children aged 5 to 14 years are hospitalised at lower rates than those aged 0 to 4 years, reflecting their different patterns of ill health and injury. Otitis media and asthma are the two major reasons for hospitalisation, followed by tonsillitis. However, the rates for hospitalisation for external causes are significantly higher, particularly the rates for falls, exposure to mechanical forces and transport accidents. Myringotomy and tonsillectomy/adenoidectomy were the two principal surgical procedures for all children aged 5 to 14 years (DHS 2001b).

For Indigenous children in this age group, tooth decay was the principal reason for hospitalisation of males, followed by otitis media and tonsillitis. For all these conditions, the rates of hospitalisation were significantly higher than the rates for all males in the same age group. For Indigenous females aged 5 to 14 years, the principal reason for hospitalisation was otitis media, followed by tooth decay and skin infections. Similarly, the rates of hospitalisation for these conditions were well above those for all female children in the same age group (DHS 2001b). The major external cause for hospitalisation for Indigenous males aged 5 to 14 years was falls, at a rate that was similar to that for all males in the age group. However, for the other external causes of exposure to mechanical forces, transport accidents and exposure to smoke, flames and hot substances, there were also significant differences in the rates compared to those for all males aged 5 to 14 years (DHS 2001b). These disparities again highlight the substantial level of disadvantage suffered by Indigenous children in South Australia.

Young people aged 15 to 24 years

The onset of adolescence heralds another transition phase for young people, a time for the developing of independence and a move towards adulthood. The World Health Organization (WHO 1975) has defined adolescence as marked by 'progression from appearance of secondary sex characteristics (puberty) to sexual and reproductive maturity; development of adult mental processes and adult identity; and, transition from total socioeconomic dependence to relative independence'. In South Australia, this generally refers to the period from 12 to 24 years of age.

For many young people, it is the time that marks the end of secondary level education, and the entrance to employment and/or further education and training. However, for an increasing number of disadvantaged youth, unemployment and reduced life opportunities are more likely. There is an association between unemployment and psychological and physical ill health in young people aged 15 to 24 years (Mathers and Schofield 1998), and evidence suggests a strong association between youth unemployment and youth suicide (Morrell et al. 1998). Unemployment in this age group is associated with psychological symptoms, such as depression and loss of confidence, and there is also some evidence for an association with raised blood pressure. Finally, the prevalence of lifestyle risk factors (cannabis use and, less consistently, tobacco and alcohol consumption) is higher in unemployed compared with employed young people (Morrell et al. 1998). Proportions of people aged 15 to 24 years who were unemployed, as well as full-time students, those who left school aged 15 years or less, and those who are Indigenous or were born in non-English speaking birthplaces have been mapped and appear in Chapter 3.

As indicated, adolescence involves physical and emotional developments that have an impact on behaviour: puberty, changing body shape, new sexual feelings and risk-taking urges (Wilhelm & Clarke 1998). During this life stage, young people are more likely to engage in greater risk-taking behaviours (such as experimentation with alcohol, tobacco and illicit substances, unprotected sexual intercourse or driving at excessive speed in motor vehicles or motorbikes). This is reflected in their higher mortality and morbidity rates from external causes (particularly transport accidents, assaults and suicide), and higher rates of hospitalisation for the termination of pregnancy, and for conditions such as eating disorders, mental health disorders and those associated with childbirth (DHS 2001b).

While the rates for young people for admission to hospital are generally lower than those of children (with the exception of pregnancy-related diagnoses for females aged 18 to 24 years), the rates for hospital admissions for external causes are higher for the 15 to 24 year age group, particularly for males. In 2000, the major external causes for young people were exposure to mechanical forces and transport-related accidents. For Indigenous young people, the rates for hospital admission for transport-related accidents and assault were substantially higher than those for the total population (DHS 2001b).

Interpersonal violence, which includes child abuse, rape and sexual assault, domestic violence, and physical assault, threatens the safety and security of many young people and consequently, affects their wellbeing. In the year 2000, assault was the most significant external cause for admission to hospital for Indigenous males and females aged 18 to 24 years. Assault was also the most frequent crime committed against children and young people accounting for 40.2 per cent of all assaults recorded in South Australia in 2000 (ABS 1999).

Pregnancy during the teenage years carries with it increased risks of a poor perinatal outcome and adverse effects on the future wellbeing of both the mother and the child. In Australia in 1999, the teenage birth rate was 18.1 per 1,000 women aged 15 to 19 years (ABS 2000). This is a lower rate than that reported in other developed English-speaking countries such as New Zealand (29.8 per 1,000) and the United States (51.1 per 1,000), but much higher than in Japan (3.9 per 1,000) and many Western European countries which have rates below 10 per 1000 (ABS 2000). In order to estimate teenage pregnancy rates, statistics on teenage terminations of pregnancy as well as births are needed. In South Australia in 2000, the teenage pregnancy rate was 40.8 per 1,000 women aged 15 to 19 years which is similar to that in the United Kingdom and New Zealand, but much higher than in many Western European countries (van der Klis et al. 2002). Births to South Australian teenaged women are associated with social disadvantage and relatively poor perinatal outcomes, although these have improved (van der Klis et al. 2002). Current strategies are aimed at reducing the incidence of unplanned teenage pregnancy and improving the required support for pregnant teenagers.

Gambling is an increasingly frequent activity for young people. In South Australia, some of the highest incidences of gambling-related problems occur in the 18 to 24 year old age group (Delfabbro

& Winefield 1996).

Significant numbers of young people are also recipients of housing rental assistance and rent relief, and, at 30 June 2000, of all those people waiting for public housing, 23.1 per cent were young people (DHS 2001b). The Supported Accommodation Assistance Program (SAAP) was established in 1985 to consolidate a number of Commonwealth, State and Territory government programs assisting homeless people and women and children escaping domestic violence. SAAP provides recurrent funding for salaries and other operational costs associated with the provision of housing and support for people who are experiencing homelessness or are at risk of homelessness. In 1999-2000, over one third (35.5 per cent) of the Supported Accommodation Assistance Program (SAAP) clients in South Australia were aged 15 to 24 years (AIHW 2000). Overall, 147 people out of every 10,000 aged 18 or 19 years became SAAP clients. The next highest rate of use was by 15 to 17 year-olds, among whom 120 people out of every 10,000 became clients (AIHW 2000). People aged 15 to 24 years were much more likely to go to SAAP agencies than people in other age groups.

Conclusion

Many indicators demonstrate that the wellbeing of Australian children and young people has improved (AIHW 2002). However, in other areas, evidence suggests that outcomes have remained static or have declined, in an environment marked by rapid social change. This edition of the atlas reveals that considerable disparities are evident across many aspects of the lives of South Australian children and young people. Increasing numbers of children and young people face socioeconomic and other forms of disadvantage, resulting in significant adverse effects on their wellbeing that are likely to continue into adult life. This is particularly relevant in the case of many Indigenous children. Children and young people from the most socioeconomically disadvantaged families manifest the poorest health; have higher rates of acute rather than preventative service utilisation; and have more chronic health problems, higher injury rates and poorer dental health (Mathers 1996).

In order to address the existing inequalities, comprehensive longitudinal research studies and accurate demographic information collections will be essential to examine the wellbeing of children and young people and the relationship with a range of socioeconomic determinants, and to identify effective interventions and community-based solutions.