Central Northern Adelaide Health Service

A Social Health Atlas

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FOREWORD

It is with great pleasure that we are able to present our first Social Health Atlas for the Central Northern Adelaide Health Service.

The purpose of this Social Health Atlas is firstly, to provide the basis for the region to understand and determine priorities for our regional health planning and secondly, for our key partners in other government or non-government agencies to utilise the data to inform their planning processes.

As we all can appreciate, health is a complex environment and there are many factors that determine and/or influence the health status of our population. These can include, but are not limited to, individual lifestyle factors, social and community networks, living and working conditions and accessibility to health services.

As a Region, we have significant challenges given the diversity and size of our population, and the combination of responsibility for improving the health and wellbeing of our designated population and supporting the provision of state-wide services to the broader South Australian community.

This Social Health Atlas provides a comprehensive collection of information for the Central Northern Adelaide Health Service and associated state-wide services, which has been collated from a range of difference data sources, either managed locally or available from other agencies.

Every attempt has been made to ensure that the data provided is reflective of the most current information; however it is acknowledged that, in some instances, the data is the best that is available.

The information within this Social Health Atlas will be used widely during consultation processes with our key partners and our communities, in order to ensure that the strategies developed will make a difference to the health and wellbeing of our population.

We would like to take this opportunity to acknowledge the significant contribution of staff at the Public Health Information Development Unit, The University of Adelaide who worked with us in order to make this publication possible.

We commend this report to you and hope that collectively we can move forward together in improving the health and wellbeing of our population.

Raymond G Grigg
Chairman, Board of Directors

Dr David Panter
Chief Executive Officer

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EXECUTIVE SUMMARY

The Central Northern Adelaide Health Service (CNAHS) is the largest of the three regional health services in the Adelaide metropolitan area. The regions were created as part of the SA Government's reform agenda following the release of the Generational Health Review (April 2003) and the Government's response, *First Steps Forward* (June 2003). The main platform for the reform was an enhanced focus on governance processes and the development of fully integrated health services across the 'continuum of care'.

The purpose of the CNAHS Social Health Atlas is to provide a document for the region to use with our key partners in determining our priorities for future investment. The Atlas includes our vision, purpose, guiding principles, strategic priorities and objectives and will assist us in our decision making processes.

Our regional planning will be undertaken in line with the South Australian Government's State Strategic Plan (2004), the Department of Health's Strategic Directions (2004-2006) and, from a regional perspective, our commitment to:

- Developing primary health care
- Modernising mental health
- Improving the health of Aboriginal and Torres Strait Islander people and communities, and
- Consolidation and development of hospital services

The information is presented in a form which will allow individual organisations to focus on particular communities. In addition to this hardcopy version, the Atlas is also available in an interactive form on the PHIDU website (http://www.publichealth.gov.au), with online mapping facilities and access to the supporting background data.

Some of the key characteristics of the CNAHS Region are:

- The Region incorporates 38 Statistical Local Areas;
- Our estimated resident population is 774,701 which represents 50.7 per cent of the State's total population;
- Population projections are indicating that, whilst as a State our population will increase by 3.4 per cent (or 51,577 people) by 2020, over half of that growth will be in our region (29,328 people);
- The proportion of Aboriginal and Torres Strait Islander people is estimated to be 1.2 per cent (9,388 people);
- The proportion of people from Culturally And Linguistically Diverse (CALD) backgrounds is estimated to be 13.9 per cent (102,767 people);
- The Region contains areas of both the highest and lowest scores for the Socio-Economic Index for Areas (SEIFA) which indicates the diversity of the region;
- The proportion of low income families represents 23.1 percent of our population, but this includes not only families in poverty, but also many older persons who are asset rich, but income poor;
- The Region contains some of the best-served (central city, eastern suburbs) as well as the least well-served areas (north-western and north) with respect to availability of general practitioners, specialist and allied health practitioners;
- The Region provides services across a continuum of care: from primary health care to acute and specialist hospital and state-wide services; and
- The Region employs approximately 10,700 staff and has an operating budget of almost a billion dollars.

Overview

The health and wellbeing of the South Australian population is generally high when compared to the populations of many overseas countries. Examples include our life expectancy and overall infant mortality rates. However, these statistics hide substantial differences in the health and wellbeing of specific groups within the population.

The CNAHS region contains just over half of the State's population and therefore has a similar socioeconomic profile to the State as whole. However, significant socioeconomic variations in health and wellbeing also exist across its areas and within its communities. Some of these, as identified in this atlas for the CNAHS region, are summarised in Table 1 below.

Table 1: Selected indicators of socioeconomic inequalities in health in the CNAHS region

Indicator	Socioeconomic pattern evident?	Estimated extent of health inequality
Low birthweight babies	Yes – increasing prevalence with increasing disadvantage	Those in the most disadvantaged quintile (fifth of the population) were 50% more likely to have a baby born with a low birthweight than those in the most advantaged quintile (fifth).
Self-reported health	Yes – increased reporting of fair or poor health with increasing disadvantage	Those in the most disadvantaged quintile were 44% more likely to assess their own health as fair or poor compared to those in the most advantaged quintile.
Risk factors:		
High psychological distress	Yes – increasing prevalence with increasing disadvantage	Those in the most disadvantaged quintile were more than twice as likely to have very high psychological distress levels as those in the most advantaged quintile.
Obesity in male adults	Yes – increasing prevalence with increasing disadvantage	Males in the most disadvantaged quintile were 59% more likely to be obese than males in the most advantaged quintile.
Obesity in female adults	Yes – increasing prevalence with increasing disadvantage	Females in the most disadvantaged quintile were 36% more likely to be obese than women in the most advantaged quintile.
Current smoker	Yes – increasing prevalence with increasing disadvantage	Those in the most disadvantaged quintile were 28% more likely to be a current smoker than those in the most advantaged quintile.
Physical inactivity	Yes – increasing prevalence with increasing disadvantage	Those in the most disadvantaged quintile were 35% more likely to be physically inactive than those in the most advantaged quintile.
Disease or disorder:		
Diabetes type 2	Yes – increasing prevalence with increasing disadvantage	Those in the most disadvantaged quintile were 45% more likely to have diabetes type 2 compared to those in the most advantaged quintile.
Mental and behavioural disorders	Yes – increasing prevalence with increasing disadvantage	Those in the most disadvantaged quintile were 33% more likely to have a mental and behavioural disorder than those in the most advantaged quintile.
Arthritis	Yes – increasing prevalence with increasing disadvantage	Those in the most disadvantaged quintile were 17% more likely to have arthritis than those in the most advantaged quintile.
Lung cancer	Yes – increasing incidence with increasing disadvantage	The incidence of lung cancer was 61% higher in the most disadvantaged quintile compared to the most advantaged.

Indicator	Socioeconomic pattern evident?	Estimated extent of health inequality
Disease or disorder: (continued)		
Premature death of males	Yes – increasing likelihood with increasing disadvantage	Males in the most disadvantaged quintile were nearly twice as likely to die prematurely compared to those in the most advantaged quintile.
Premature death of females	Yes – increasing likelihood with increasing disadvantage	Females in the most disadvantaged quintile were 51% more likely to die prematurely compared to those in the most advantaged quintile.
Avoidable mortality	Yes – increasing likelihood with increasing disadvantage	Those in the most disadvantaged quintile were two thirds more likely to die of avoidable causes before 75 years of age than those in the most advantaged quintile.
Service use:		
Community health service clients	Yes – increasing service use with increasing disadvantage	Those in the most disadvantaged quintile were nearly 12 times more likely to use these services than those in the most advantaged quintile.
Community mental health service clients	Yes – increasing service use with increasing disadvantage	Those in the most disadvantaged quintile were 2.4 times more likely to use these services than those in the most advantaged quintile.
CAMHS services	Yes – increasing service use with increasing disadvantage	Those in the most disadvantaged quintile were 2.75 times more likely to use these services than those in the most advantaged quintile.
Department for Families and Communities services clients	Yes – increasing service use with increasing disadvantage	Those in the most disadvantaged quintile were 5.7 times more likely to use these services than those in the most advantaged.
Domiciliary care services	Yes – increasing service use with increasing disadvantage	Those in the most disadvantaged quintile were two and half times more likely to require domiciliary care than those in the most advantaged quintile.
District nursing (RDNS) services	Yes – increasing service use with increasing disadvantage	Those in the most disadvantaged quintile were 49% more likely to be an RDNS client compared to the most advantaged quintile.
GP services	Yes – increasing use with increasing disadvantage	For males and for females, there were 40% more services by GPs in the most disadvantaged areas than in the most advantaged areas.
A & E attendance	Yes – increasing service use with increasing disadvantage	Those in the most disadvantaged quintile were over two and a half times as likely to attend A & E as those in the most advantaged.
Outpatient department attendances	Yes – increasing service use with increasing disadvantage	Those in the most disadvantaged quintile were 2.3 times as likely to attend A & E as those in the most advantaged quintile.
Specialist medical consultations in outpatient departments	Yes – increasing service use with increasing disadvantage	Those in the most disadvantaged quintile were 2.4 times as likely to attend for consultations with specialist medical practitioners in outpatient departments as those in the most advantaged quintile.
Admissions to public acute hospitals	Yes – increasing service use with increasing disadvantage	Those in the most disadvantaged quintile were 2.3 times as likely to be admitted to public acute hospitals as those in the most advantaged quintile.

Indicator	Socioeconomic pattern evident?	Estimated extent of health inequality
Admissions for a hysterectomy	Yes – increasing service use with increasing disadvantage	Those in the most disadvantaged quintile were over one third more likely to be admitted for a hysterectomy as those in the most advantaged quintile.
On a hospital waiting list for more than six months	Yes – increasing likelihood of waiting with increasing disadvantage	Those in the most disadvantaged quintile were three times more likely to be on a waiting list than those in the most advantaged.

The patterns of health inequality that are evident here are also present in other regions of South Australia and in the other States and Territories. While there is still more to be learned about the nature of health inequality and its close relationship to social inequality, we need to invest now in finding effective interventions to ameliorate its long term impact on health and wellbeing.

As the Social Health Atlas demonstrates patterns of health and wellbeing across the CNAHS region as a whole and area by area, it can help decision-makers to make better informed judgements about trends in inequalities in health and to develop more appropriate policies to improve them. Initiatives to reduce health inequalities also need to address different 'layers of influence', from strengthening individuals and communities to improving access to essential services and facilities, and encouraging macroeconomic and policy change that improves health and addresses health inequalities.

Therefore, the information in the Social Health Atlas can be used for a range of purposes. At the local level, for example:

- local partnerships between different stakeholders can identify patterns of health and wellbeing in the geographical areas of most interest to them, and explore how their findings compare with the picture elsewhere in the CNAHS region;
- intersectoral or multi-agency partnerships can use the findings to help inform their needs assessments of different populations and areas; and
- neighbourhood and community groups can draw on the findings to identify outstanding needs and build a case for improved services.

At a regional level, health service and other agencies will be able to draw on the Social Health Atlas in order to:

- identify trends across the region;
- track emerging issues that cross regional or sub-regional boundaries or affect particular populations; and
- identify trends over time.

Central to effective approaches is a focus on communities: the ways in which the places where people live or work can hinder or contribute to good health. Many resources which people need to lead healthy lives are less available, or of poorer quality in areas inhabited by people whose personal or household resources are also more constrained. For example, facilities for physical recreation may be fewest in areas where public and private transport is scarce, people are least likely to have their own facilities and where the local environment is not conducive to walking, cycling or jogging. We need to build active relationships with members of disadvantaged groups who have poorer health to assist in making decisions about priority services and interventions. To this end, the CNAHS is committed to closing the gap between the most advantaged sections of the region and the least advantaged as highlighted by many of the indicators identified throughout the atlas.

In summary, it is clear from the information provided that we have a diverse region with a range of challenges we need to meet, if we want to gain the confidence of our communities that we are making a difference to their health and wellbeing.

CONTENTS

List of tables, figures and maps

Page

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A snapshot of the CNAHS region (page 5), is a shortened version of a chapter written by Professor Graeme Hugo for the Social Health Atlas of South Australia, 3rd Edition (forthcoming).

We thank all of these people for their assistance and expertise in advising us. Finally, we wish to emphasise that the views expressed in the atlas and the conclusions drawn are those of the authors, and not necessarily those of the people who have assisted us with its production.

The authors also wish to thank Kae Martin and her staff in the Central Northern Adelaide Health Service Regional Office for the way in which they have worked with us to get this report to its final stage.

INTRODUCTION

The Central Northern Adelaide Health Service (CNAHS) is the largest of the three regional health services in the Adelaide metropolitan area. The regions were created as part of the SA Government's reform agenda following the release of the Generational Health Review (April 2003) and the Government's response through *First Steps Forward* (June 2003). The main platform for the reform was an enhanced focus on governance processes and the development of fully integrated health services across the 'continuum of care'.

BACKGROUND

The CNAHS Board, in line with its role and responsibilities, has developed a Vision, Statement of Purpose and Guiding Principles in order to provide the overall strategic direction for the health service. They are:

Vision

We will have the best health outcomes in Australia

Statement of Purpose

With our stakeholders, CNAHS will lead and deliver a comprehensive health system which significantly improves health and wellbeing in our communities

Guiding Principles

Trust – We will be open, honest, consistent and clear in all our actions and communications

Social Justice – We will work towards equitable health delivery and outcomes

Reconciliation – We will continue to build improved relationships between indigenous and non-indigenous communities

Stakeholder Engagement – We will genuinely work together as a team

Alliances – We will actively encourage joint ventures and partnerships towards the achievement of our common goals

Safety – We will minimise financial, environmental and clinical risk

Quality and Innovation – We will embrace new and innovative ways of achieving and maintaining the highest standards of excellence supported by research and training

Accountability and Responsibility – We will actively support the acceptance of responsibility and accountability at all levels of the organisation

Strategic Priorities

The Board, in line with the South Australian Government's Strategic Plan (2004), the Department of Health's Strategic Directions (2004-2006) and our vision, have identified the following key strategic priorities:

Developing Primary Health Care

Mental Health Modernisation

Improving the Health of Aboriginal and Torres Strait Islander People and Communities

Consolidation and Development of Hospital Services

These strategic priorities will be underpinned through the consideration of:

Workforce Development and Management

Quality and Safety

Development of Shared Services

OUR ORGANISATION

In building our new organisation, the Region has been mindful of the opportunities created by developing our services so that we can do things in a different way. The Region is striving to have our communities and our people as the focus and to design our services to meet their needs. A new structure has been developed which will focus on a service and geographic orientation, rather than the previously independent organisational arrangements.

Four Service Directorates and four Support Directorates have been established:

Acute Services Directorate Royal Adelaide Hospital (RAH) Hampstead Rehabilitation Centre St Margaret's Rehabilitation Hospital The Queen Elizabeth Hospital (TQEH) Lyell McEwin Hospital (LMH) Modbury Hospital	**Primary Health Care Directorate** Primary Health Care Services (PHC) Western Central Eastern North/North Eastern Prison Health Services BreastScreen SA (Statewide Service)
Mental Health Directorate Early Intervention and Acute Services Rehabilitation and Recovery Services Statewide Specialist Services	**South Australian Dental Service** (SADS) (Statewide Service) School Dental Service Community Dental Service Adelaide Dental Hospital
Aboriginal and Torres Strait Islander Health Directorate	**Service Development Directorate**
Finance and Information and Communication Technology Directorate	**Human Resource and Organisational Development Directorate**

Our Key Partners for the CNAHS

There are many organisations with which the CNAHS liaises and works in relation to health service developments for the CNAHS community. They are:

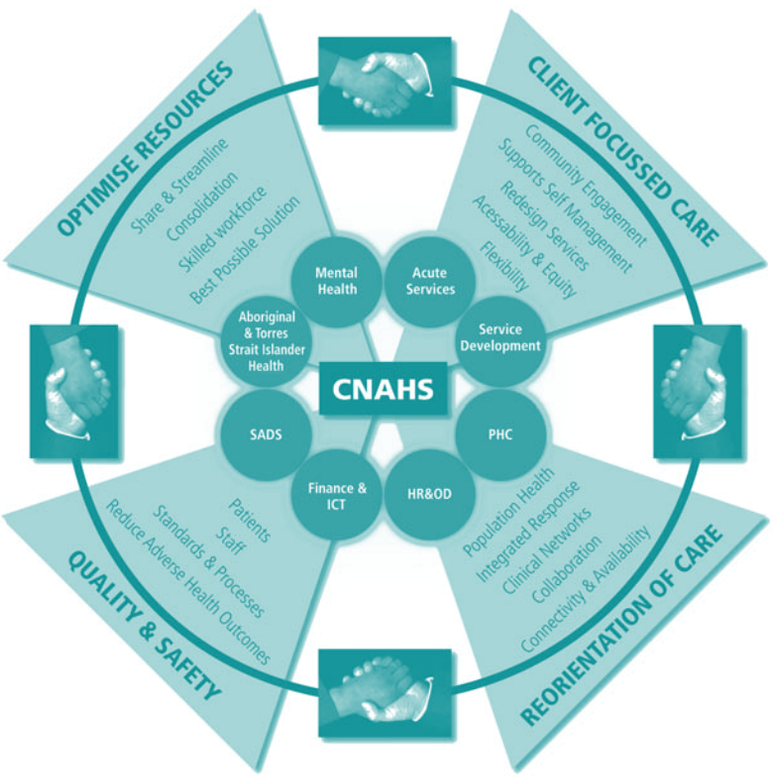
- Our Communities
- Department of Health
- Southern Adelaide Health Service
- Children, Youth and Women's Health Service
- Divisions of General Practice associated with the CNAHS community including:
  - Adelaide Central and Eastern Division of General Practice
  - Adelaide Northern Division of General Practice
  - Adelaide North East Division of General Practice
  - Adelaide Western Division of General Practice and
  - Part of the Adelaide hills Division of General Practice
- Metropolitan Domiciliary Care (MDC)
- Royal District Nursing Services (RDNS)
- 14 Local Government Areas
- Non-government service providers
- Aged care sector providers
- Aboriginal Controlled Organisations

STRATEGIC OBJECTIVES

In order to operationalise the CNAHS Board's Vision, Statement of Purpose, Guiding Principles and Strategic Priorities, the Executive has developed four key foundations that will underpin our day to day planning, implementation and evaluation of our programs. They are 'client focussed care', 'quality and safety', 'reorientation of care' and 'optimising resources'.

Client Focussed Care

- Increase community awareness and participation in determining required health services of the CNAHS including Aboriginal and Torres Strait Islander people, people from culturally and linguistically diverse backgrounds and people with mental health problems.
- Re-design services within the CNAHS to meet the current and future health needs and priorities of the local population.
- Ensure accessibility and equity of health care services in a timely and effective manner.
- Increase flexibility of services to support new and changing models of care.
- Create an environment to support self management, early intervention/ prevention and chronic disease management within the CNAHS population.



Quality and Safety

- Create and maintain an environment that delivers high quality care and ensures the safety of patients, consumers and staff through effective systems and services within the CNAHS.
- Ensure compliance with Accreditation and other associated health quality and safety standards.
- Provide a safe and secure environment for patients, consumers and staff.
- Establish and implement processes that support the reduction of adverse health outcomes.
- Ensure patients and consumers are informed of their rights and responsibilities in relation to decisions about their care.

Reorientation of Care

- Create a single system response to the health needs of the population within the CNAHS that aligns across the continuum of care including health promotion, illness prevention, and primary health care and acute services.
- Develop integrated clinical and service networks within the CNAHS and across the health system.
- Ensure greater collaboration between service providers and service receivers to facilitate the continuum of care across the public, private and non-government sectors.
- Improve the connectivity and reliability of key systems.
- Ensure availability of systems that provide accurate information in a timely manner that enables clinicians and other service providers to make appropriate decisions.

Optimise Resources

- Optimise the use of available resources within the CNAHS to achieve desired health care outcomes.
- Ensure best possible outcomes within the agreed CNAHS operating budget.
- Consolidate existing facilities, space and services to increase efficiency.
- Share and streamline resources to minimise service overlaps and duplication.
- Ensure a skilled and capable workforce that is flexible and responsive to the health needs of the community served by the CNAHS.

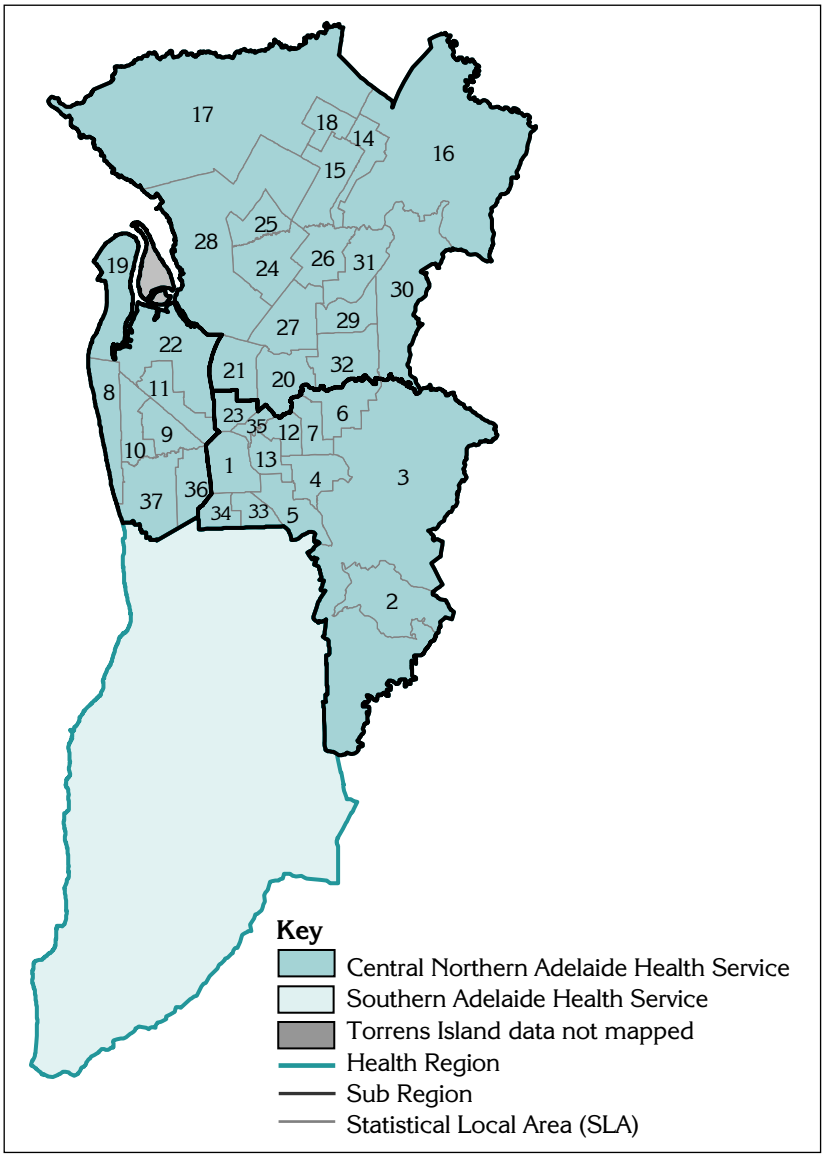
A SNAPSHOT OF THE REGION

The CNAHS region is the largest metropolitan health region, including 38 Statistical Local Areas (SLAs) as shown in the map below (Map 1). Given the size of our region, we have developed three sub regions for the purposes of planning and determining service relationships through consultation with our key partners.

These sub regions have been identified as:

1. **Central East** – incorporates Adelaide, Adelaide Hills (Central and Ranges), Burnside (North-East and South-West), Campbelltown (East and West), Norwood Payneham St Peters (East and West), Prospect, Unley (East and West) and Walkerville.
2. **Western** – incorporates Charles Sturt (Coastal, Inner East, Inner West, North-East) Port Adelaide Enfield (Coast and Port) and West Torrens (East and West).
3. **Northern** – incorporates Playford (East Central, Elizabeth, Hills, West and West Central), Port Adelaide Enfield (East and Inner), Salisbury (Central, Inner North, North-East, South-East and Balance), and Tea Tree Gully (Central, Hills, North and South).

Map 1: Map of the Central Northern Adelaide Health Service areas



1 Adelaide
2 Adelaide Hills - Central
3 Adelaide Hills - Ranges
4 Burnside - North-East
5 Burnside - South-West
6 Campbelltown - East
7 Campbelltown - West
8 Charles Sturt - Coastal
9 Charles Sturt - Inner East
10 Charles Sturt - Inner West
11 Charles Sturt - North-East
12 Norwood Payneham St Peters - East
13 Norwood Payneham St Peters - West
14 Playford - East Central
15 Playford - Elizabeth
16 Playford - Hills
17 Playford - West
18 Playford - West Central
19 Port Adelaide Enfield - Coast
20 Port Adelaide Enfield - East
21 Port Adelaide Enfield - Inner
22 Port Adelaide Enfield - Port
23 Prospect
24 Salisbury - Central
25 Salisbury - Inner North
26 Salisbury - North-East
27 Salisbury – South-East
28 Salisbury - Balance
29 Tea Tree Gully - Central
30 Tea Tree Gully - Hills
31 Tea Tree Gully - North
32 Tea Tree Gully - South
33 Unley - East
34 Unley - West
35 Walkerville
36 West Torrens - East
37 West Torrens - West

Population Characteristics

The CNAHS region comprised 774,701 people at 30 June 2004 – some 50.7 per cent of the State's total population. Its population grew at a slower rate than the State as a whole between 1996 and 2001 (0.48 per cent compared with 0.50 per cent), and between 2001 and 2004, its annual growth rate (0.49 per cent) remained below the level of the total State (0.51 per cent).

Since the region has more than half of the State's population, its age structure is strongly similar to that of the State as a whole. However, there is an over-representation in the young adult ages (15 to 24 years) – a cohort in which South Australia as a whole is deficient compared with Australia as a whole. Both the 0 to 4 and 5 to14 year age groups were under-represented in the area, compared with South Australia as a whole, but the decline in the 0 to 4 year age group was lower, and the increase in the 5 to 14 year age group was greater in the region than in the State as a whole.

The 15 to 24 year youth category is one of the most crucial from the perspective of the State's economic and social development. Between 1991 and 2001, the number of persons in South Australia aged between 15 and 24 years declined by around 18,930 or nine per cent. However, fully 74 per cent of this decline was accounted for by the CNAHS region, which saw a loss of approximately 14,000 in this age category between 1991 and 2001. Nevertheless, the group were still slightly over-represented at the 2001 population census. The loss in these ages is partly a function of lower fertility cohorts moving into this age group, but especially of the sustained net migration loss of this age group, which South Australia experienced in the 1990s.

The experience for the 65 years and older age group is in stark contrast to the younger ages, with a marked growth of 17.5 per cent between 1991 and 2001 in the region, but this was not as substantial as the growth in the State as a whole (21.3 per cent). Nevertheless, the proportion aged over 65 years (14.7 per cent) is the same as for the State as a whole.

It is important to underline that the CNAHS region is large and heterogeneous, and the whole of region trends discussed here are the average between sub regions with much higher or lower values. For example, the region contains some of the State's largest growing populations (e.g. Salisbury LGA was the largest growth area in Adelaide in 2003/04, increasing by 2,100 persons) as well as areas experiencing population declines (e.g. Tea Tree Gully LGA's population decreased by 170 persons).

Socioeconomic Profile

In no area is this intra regional diversity more evident than in socioeconomic status. The Index of Relative Socio-Economic Disadvantage (IRSD, described on page 19) score for the region is only slightly lower than for the State as a whole and the metropolitan regions, but the CNAHS region contains the areas of both highest and lowest scores in the metropolitan regions. A similar proportion of families are in the low income category (23.1 per cent) to the State as a whole (23.8 per cent), and the proportion has increased substantially since 1991 when 17.7 per cent of families in the region had low incomes (compared with 19 per cent in the State as a whole). It is important to note that low income families in this region not only include families in poverty, but also many older persons and older couples who are asset rich, but income poor.

It is interesting that while the State's population grew by only 7.5 per cent between 1991 and 2001, the number of households grew by 14.6 per cent. However, the bulk of extra growth was in single person households and the number of families increased by only 6.1 per cent. In the CNAHS region, the increase in the number of families was even smaller – 5 per cent. There is a slightly higher proportion of families made up of single parent families in the CNAHS region (11.5 per cent) than is the case in the State as a whole (11 per cent). This reflects the inclusion of some of Adelaide's poorest areas (such as the Parks and some northern suburbs) in the region. This is exemplified by the fact that 20.4 per cent of families with one or more children in the region had no parent employed, compared with 18.7 per cent in the State as a whole.

Labour force

The proportion of the labour force who are unskilled or semi-skilled workers was 17.4 per cent compared with 18.9 per cent in the State as a whole. However, there are wide differences between the different parts of the area in the occupational structure, with the proportion of unskilled and semi-skilled workers being much lower in the eastern and central suburbs than in the northern and western suburbs. In the region, the proportion of the labour force that was unemployed fell from 12.4 per cent in 1991, to 6.9 per cent in 2001, reflecting the improvement in the labour market situation over the decade. This compares to a fall from 11.6 per cent to 6.8 per cent in the State as a whole.

Female labour force participation decreased in the region from 69.4 per cent in 1991 to 65.8 per cent in 2001. In the State as a whole, it fell from 69.5 per cent to 66.3 per cent. Educational participation levels have on the other hand increased from 75.7 per cent to 80.1 per cent, compared with 76.6 per cent to 80.1 per cent in the State as a whole.

Cultural diversity

One of the distinguishing features of the region is that it is more diverse than the State and the Adelaide metropolitan regions as a whole. Some 1.2 per cent of the population is Indigenous (up from 0.8 per cent in 1991). While this is lower than in the State as a whole (1.6 per cent), it is higher than the proportion across the entire metropolitan regions (one per cent). There were 102,767 people born in a non-English speaking country (i.e. those from CALD backgrounds) in Central Northern in 2001, reflecting the downturn in immigration to the State over the last decade. The number of people from CALD backgrounds in the region in 2001 who had arrived in Australia over the previous four years declined by more than a third from 16,042 to 10,535. Nevertheless, 74.5 per cent of this group in the State lived in this region in 2001. This is reflected in the fact that three per cent of the region's adults have a poor proficiency in English, compared with 1.8 per cent in the State as a whole, and 2.3 per cent in the Adelaide Metropolitan Area.

Housing

Another characteristic of the region is that a higher proportion of the housing stock is public, South Australian Housing Trust (SAHT) housing – 8.7 per cent compared with 7.7 per cent in the State as a whole and 8 per cent in the metropolitan regions. However, this masks the fact that the region contains some of the major concentrations of SAHT housing in the Adelaide metropolitan regions. The reduced availability of state housing is reflected in the fact that the number of SAHT dwellings in the region declined from 31,745 in 1991 to 25,848 in 2001. The large number of poor households and households comprised of elderly persons also accounts for the region having 11.6 per cent of all households without a motor vehicle, compared with 9.9 per cent in the State as a whole. The proportion using the Internet at home in the last week (26.7 per cent) was slightly above the State average (25.6 cent).

Challenges and trends

While the region is diverse, the various parts of it will face different challenges over the next decade or so, which will impinge on the need for health and related services in the region. These include the following:

- The trajectory that the region's population takes over the next two decades will be strongly influenced by the extent to which South Australia is successful in its population policy efforts to increase population growth. If the State's population were to continue to increase at current rates or at somewhat higher rates, the increase would be disproportionately absorbed in the CNAHS region, particularly in the northern SLAs of Playford and Salisbury. These SLAs will continue to be the fastest growing in the Adelaide Statistical Division since they still have substantial parcels of land, which have yet to be put under housing.
- The inner and middle-eastern, western and northern suburbs and central Adelaide are part of the region, and these areas will experience greater population growth than in the recent past due to increased infill, urban consolidation and gentrification.
- There will be an increasing contrast between the eastern and inner areas, which will continue to be higher income, older areas with their young adult populations having small numbers of children. The outer areas will continue to have lower incomes, larger families and a greater incidence of poverty.
- The Parks region, despite substantial efforts to change it, remains a substantial concentration of socioeconomic disadvantage and presents a significant challenge to planners.
- The region's share of South Australia's older population will increase, and the numbers in the more dependent elderly ages over 75 will increase even faster than that of the total population, so this will create considerable pressure on health services.
- The region will continue to be the most multiculturally diverse within South Australia. This diversity will increase with the increasing numbers of refugee-humanitarian settlers from the Horn of Africa (Sudan, Ethiopia, and Eritrea) who are now dominating Australia's refugee intake and are settling in disproportionately large numbers in Adelaide – most in the CNAHS region. The region's share of the State's Indigenous population is also likely to increase.
- While there is variation within the region, it is certain that there will be a disproportionate concentration in some parts of the region of groups experiencing multiple disadvantages – socioeconomic, physical or mental disability, low levels of skill and training, and exclusion from the workforce and other areas of society.

The trends anticipated above have a number of implications for health services in the region, which will need to be addressed:

- The region contains some of the best-served (central city, eastern suburbs) as well as least well-served parts of Adelaide, with respect to availability of general practitioners. The latter applies to much of the north-western and northern suburbs.
- This difference is also evident across the entire array of specialised medical services and for allied health practitioners.
- There is, on the other hand in parts of the CNAHS region, a greater concentration of many of the risk factors for poor physical and mental health such as concentrations of people with low socioeconomic status, significant groups of excluded persons, concentrations of unemployed persons, single parent families, disabled persons, people with low levels of education, refugees and others from non-English speaking households.
- There are in the north and parts of the northwest concentrations of culturally distinct groups such as Aboriginal and Torres Strait Islander people, Vietnamese people and recently arrived African refugees, who have distinct health needs.
- A further characteristic of the region is that there are areas of low rates of private health insurance taken up, which is also likely to place pressure on the region's public health facilities.

CONTEXT

This section introduces the key influences on our health and wellbeing, identifies the importance of socioeconomic and related factors on health, and describes some of the key patterns that are illustrated in the range of data and maps in the first Social Health Atlas for the Central Northern Adelaide Health Service (CNAHS). It also highlights the substantial differences in health, or 'health inequalities', that are evident across the regional population, within different population sub-groups, and at a sub-regional level.

The Social Health Atlas also provides data about the current health and wellbeing of our population against State indicators for people of all ages, and illustrates some important factors that are associated with their health and wellbeing. It will also be useful to other State government sectors in the region (such as education, housing, justice, welfare, environment and planning), local government, non-government and other agencies, and those in the community who are interested in health, and the socioeconomic and other factors that influence it.

Defining 'Health and Wellbeing'

The South Australian Government's health reform program recognises the need to define 'health' in a way that better reflects its positive dimensions, rather than just 'the state of not being ill' [1]. We need to describe health in terms of broader wellbeing, 'an everyday resource – the capacity to adapt to, respond to, or control life's challenges and changes' [2]. However, good health is not only personal 'quality of life'. There is evidence that investing in the health of communities as a whole also brings substantial benefits for society and the economy, while ill health can be a heavy financial burden. Thus, good health is also an essential element for social cohesion, economic growth and sustainable development [3].

Above all, health is also a fundamental human right, and a basic need that no one should be unnecessarily denied. It is the expectation of every citizen that they will be accorded the "right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control" (United Nations 1948).

What Determines Our Health and Wellbeing?

It is now recognised that a broad range of factors determine our health, both at an individual level and at a population level [4]. Those that have the most important effects are known as 'the determinants of health and wellbeing'. These include personal characteristics, such as the genes that we inherit from our parents, and aspects of our own beliefs, behaviours and coping abilities. Other significant influences operate within our families, neighbourhoods, communities, culture or kinship groups, and society as a whole.

These factors do not exist in isolation from each other, but function as an interactive web [5]. Many determinants overlap, and more remains to be learned about specific factors and the ways in which they influence our health, at different times in our lives.

Figure 1 illustrates the key health determinants as 'layers of influence', starting with individual factors and extending to aspects of the wider community [6]. While health services can make a direct contribution to the health and wellbeing of a population, Figure 1 shows that many of the key factors that determine our health and wellbeing are also found in non-health sectors such as education,

housing, employment, and the environment. Recently, it has been suggested that an outer layer incorporating global environmental changes might also be added to the diagram [7].

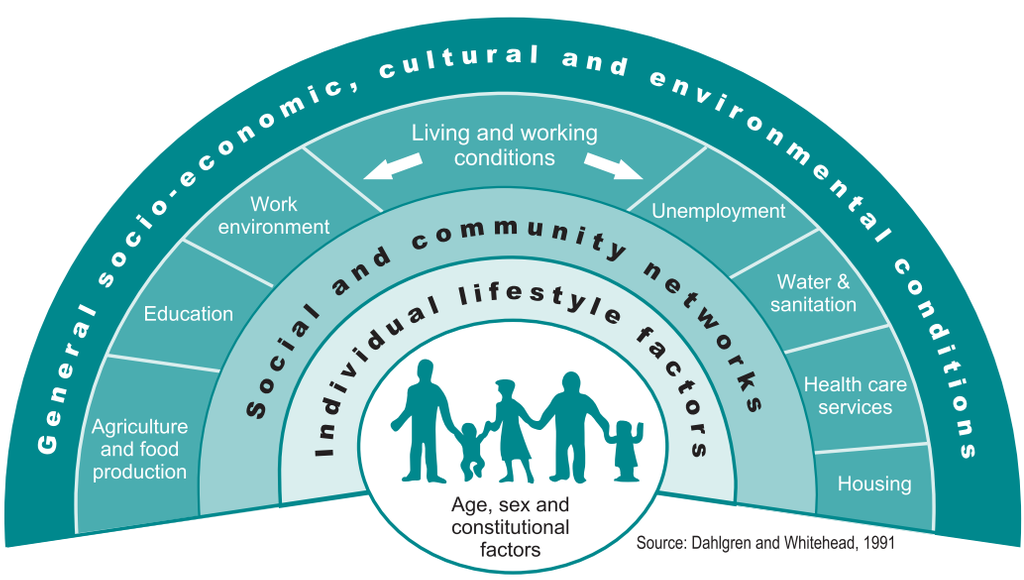
The key influences or 'determinants' of our health are:

- biology and genetic endowment;
- healthy growth and development in childhood;
- personal health practices and coping skills;
- social support networks;
- health services;
- gender and sexuality;
- culture, spirituality and kinship;
- income and social position;
- education;
- employment and working conditions; and
- the wider physical and social environments in which we live [5].

The model links influences from various levels – including society-wide factors (e.g., physical, environmental, socioeconomic), middle-level factors (e.g., health care and other services) and individual and small-group factors (e.g., tobacco use), to explain the origins of health and wellbeing [8].

Thus, health is the result of multiple determinants that operate together within genetic, biological, behavioural, social, cultural and economic and ecologic contexts, and which have differing influences at various points in our lives [9]. The life pathways that result are the product of cumulative risk and protective factors and other influences in our social environments. A single risk factor (being obese or having experienced family violence) may contribute to a number of problems, just as one protective factor (good nutrition or having a supportive family) may help to defend against other problems [10]. Environmental risks and protective factors can occur independently, or may cluster together in socially patterned ways [11].

Figure 1: The Key Determinants of Health and Wellbeing



Social and economic factors are among the most important individual-level determinants, and one's overall health and wellbeing tend to improve at each step up the economic and social hierarchy. This is known as 'the social gradient'. Furthermore, this gradient exists for a wide range of other outcomes – from mental health and coping behaviours, to literacy and mathematical achievement [12]. These effects may persist throughout the lifespan, from birth, through adulthood and into old age, and possibly to the next generation [13, 14].

Other models of health determinants are also useful. In 1986, the Ottawa Charter for Health Promotion recognised that the fundamental conditions for health and wellbeing were peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity. More

recently, the World Health Organization updated *"The Solid Facts"*, which identified the following areas as important social determinants where action can be taken through public policy to improve health: the social gradient; stress; early life; social exclusion; work and unemployment; social support; addiction; food; and transport [15].

Together, all these models identify the significant roles played by public policy, history and culture, aspects of our environment, access to high quality services, community and social support, behaviours and skills, as well as biological factors, in determining our health and wellbeing. Societies that enable all citizens to play a full and useful role in the community's social, economic and cultural life will be healthier than those where people face insecurity, exclusion and deprivation [15].

Understanding 'Population Health'

Health can be described at many different levels: the personal health of an individual, the health of an area or local community, or the overall health of a group of people or a population who share a characteristic - for example, the health of young children, or the health of Aboriginal and Torres Strait Islander people. The direction of the health reform in South Australia has a greater focus on 'population health', in addition to the more traditional focus on individual health care.

The Department of Health has chosen to use a definition of population health based on the Health Canada definition [16], which views population health as a plan of action, as well as a means of understanding health determinants:

> *Population health aims to improve the health of the entire population and to reduce health inequalities among population groups by addressing and acting upon a broad range of factors and conditions that influence health.*

For Aboriginal and Torres Strait Islander peoples in South Australia, an extension of the definition of wellbeing proposed by the National Aboriginal Health Strategy (NAHS) Working Party in 1989 is also pertinent [17]:

> *Not just the physical wellbeing of the individual but the social, emotional and cultural wellbeing of the whole community. This is the whole-of-life view and it also includes the cyclical concept of life-death-life.*

This definition clearly indicates that achieving health and wellbeing is an attribute of communities, as well as of the individuals within a community; and it identifies cultural wellbeing, along with physical, social and emotional wellbeing, as equally important [18]. The aim of a population health approach should be 'that Aboriginal and Torres Strait Islander people enjoy a healthy life equal to that of the general population, that is enshrined by a strong living culture, dignity and justice [#]. This recognises the importance of achieving improvements to Aboriginal and Torres Strait Islander health and acknowledges the particular health issues facing many Indigenous communities.

In determining the factors that underpin the health and wellbeing of South Australians, both individual and population-level influences are important. However, a population-based approach considers the interconnectedness of all health determinants and mediating factors, and their complex interactions upon the health of the community. Therefore, 'taking a population approach' means establishing strong links across many different sectors and working together to take action to contribute to the community's health overall. The Social Health Atlas provides a picture of population-level health outcomes and socioeconomic influences, and where those efforts might be directed.

[#] As defined in the Strategic Framework for Aboriginal and Torres Strait Islander Health (NATSIHC).

Health and Other Inequalities

The level of health and wellbeing of the South Australian population is high when compared to the populations of many overseas countries. Examples include our long life expectancy and overall low infant mortality rates.

However, these summary statistics hide substantial differences in the health and wellbeing of particular groups within our population. For example, compared with other South Australians, Aboriginal and Torres Strait Islander people are disadvantaged across a broad range of social and economic domains, including education, health, employment, income and housing. This is the result of many underlying causes, including the intergenerational effects of forced separations from family and culture, and the lasting impacts of colonisation and racial discrimination. This has placed them at greater risk of poorer life outcomes; and there has been substantial evidence for decades, that the health of Aboriginal and Torres Strait Islander people is significantly worse than that of the non-Indigenous population [19].

These differences are described as 'inequalities'. There are many forms of inequality – age, sex, ethnicity and race, social and economic position, disability, geographical area, remoteness, and so on. Some dimensions of inequality, such as age, are unavoidable and unable to be altered. Other inequalities occur as a result of differences in access to education, material resources, safe working conditions, effective services, living conditions in childhood, and so on [20].

We can identify three levels of inequality in health:

- inequality in access to health care (for example, some refugees have no access to primary health care [21];
- inequality of health outcomes (for example, there are around 18 years' difference in average life expectancy at birth between Aboriginal and non-Aboriginal people [22]; and
- inequality in other modifiable factors that determine our health (for example, in education, employment or housing).

Such inequalities result because of differences that are unfair, such as unequal access to health services, nutritious food, adequate housing, or safe transport [20, 24]. These inequalities are important from both social justice and economic perspectives - not only can they be considered unfair and preventable, but they also have high direct and indirect costs on the health system [23]. Research suggests that, while the community accepts a degree of inequality in wealth across the population, there is far less tolerance of inequalities in health [25, 26].

As discussed earlier, health inequalities generally refer, not to variations between individuals, but to differences between social groups [27]. In the Social Health Atlas, health inequalities describe the disparities in health associated with people's different and unequal positions in society; thus, the concept links the health of individuals to the structures of social and economic inequality that shape their lives [28].

The Impact of Socioeconomic Inequalities on Health

Throughout the Social Health Atlas, there is evidence of the powerful influence of social and economic factors on the health of communities, and the health inequalities that are present. The term, 'socioeconomic status' encompasses these factors, and helps to illustrate their effects on health and wellbeing across the population. Thus, the words 'health inequalities' are generally used as an abbreviation for 'socioeconomic inequalities in health', whether measured at an individual or at an area level. Health inequalities that relate to other structures of inequality – like gender or ethnicity – are usually labelled as gender inequalities in health, ethnic inequalities in health and so forth [28].

Economic inequality is apparent in the uneven distribution of wealth in society. It is seen in the unequal distribution of the ability to purchase 'goods' such as housing, education, recreation, health care and other opportunities, and the choice to do so [29]. Social inequality is the expression of the

lack of access to these opportunities and represents a degree of exclusion of people from full and equal participation in what we believe is worthwhile, valued and socially desirable [29]. Thus, economic and social inequalities are interwoven, and their combined impact results in limited opportunities and life chances for many who are affected by them [9]. This is particularly the case for many Aboriginal and Torres Strait Islander people.

For disadvantaged groups within the population, the impact of social inequality limits their ability to influence change, and makes them more vulnerable to poor health and wellbeing. Some of these include young Aboriginal people; people who have disabilities; those for whom English is not their first language; young people who are or have been in the care of the state; and refugees from a range of ethnic and cultural backgrounds.

Socioeconomic disadvantage takes many forms. Defining disadvantage only in terms of poverty or low income minimises the importance of access to appropriate services, safe environments, and the quality of housing or level of education that is available [30]. A complete definition should encompass many of the serious environmental, structural and social issues faced by individuals, their families and their communities such as under- and unemployment, homelessness or housing instability, discrimination and racism, unsupported lone parenthood, educational under-achievement, admission into state care, violence and abuse, and mental health problems [31].

Indigenous Disadvantage and Health Inequality

There are over 25,500 Aboriginal and Torres Strait Islander people living in South Australia, in a total population of just over 1.5 million South Australians [34]; and approximately 9,500 of these people live within the CNAHS region [42]. The Indigenous population is growing rapidly when compared with the non-Indigenous population [35]. At 30 June 2001, the Indigenous population of South Australia had a median age of 20.8 years, compared to the non-Indigenous population with a median age of 37.8 years [36]. Thus, the Indigenous population has a much younger age profile than the rest of the population - the result of a higher birth rate and earlier age at death.

In South Australia, inequalities exist for Aboriginal and Torres Strait Islander people at all ages and in all settings, and are the cumulative result of events experienced throughout a lifetime [36, 37]. Compared with other Australians, Aboriginal and Torres Strait Islander people 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 [34]. These disparities are also interdependent, and have resulted in life-long disadvantage, inequity and discrimination.

The effects of social inequality and dispossession have been profound. The legacy of colonisation produced rapid and pervasive social and cultural change. The impact of this resulted in complex effects on health and wellbeing, some of which have been cumulative over generations [38, 39]. The resulting trauma, loss and disempowerment have contributed further to the erosion of culture and community, and undermined the holistic nature of Indigenous health and wellbeing as previously defined. Aboriginal and non-Aboriginal practitioners and scholars have long identified social inequality, racism and oppression as the key issues in Indigenous health and wellbeing [40, 41].

In acknowledging the debilitating impact of disadvantage, the significant efforts of many Aboriginal communities, families and individuals in working towards improved social, economic and cultural wellbeing within this environment should be recognised and highlighted. As outlined in the South Australian Aboriginal Health Partnership's *Aboriginal Health – Everybody's Business* [42]:

> *The strength and resilience of a people continuing to maintain and increase their place within an historically hostile, denigrating and imposed culture, is given little public value or recognition and is easily obscured by pervasive pictures of substance misuse, poor social and emotional wellbeing, third world health status and generational poverty and unemployment.*
>
> *The impact of these social, economic and health issues affect the physical, spiritual, cultural and emotional advancement and growth of all Aboriginal people.*

The recognition of the extent of disadvantage experienced by the Aboriginal and Torres Strait Islander population has framed a number of other new approaches in South Australia. *Doing it right* is the South Australian Government's policy framework for action: the Government's commitment to Aboriginal and Torres Strait Islander families and communities in South Australia [35].

Within this framework, the following goals are outlined:

- "That Aboriginal South Australians will have the same choices as other South Australians and the same opportunities to share in the social and economic advantages of living in our state.
- That all South Australians will continue to be enriched by Indigenous culture and values, with respect by the wider community based on a new understanding and mutual esteem.
- That engagement and partnership with Aboriginal communities will be the platform for sustained improvement in the well being of Aboriginal families."

In line with this direction, improving the health of Aboriginal and Torres Strait Islander people is a major focus of the South Australian Government's health reform agenda, and an important strategic priority for the CNAHS. Readers are referred to the South Australian Aboriginal Health Partnership's *Aboriginal Health – Everybody's Business,* which is a regional resource package for cross sector strategic planning for Aboriginal and Torres Strait Islander people in the State. It is available on the Department of Health's website at http://www.health.sa.gov.au/Default.aspx?tabid=58.

Limitations in the Coverage of the Social Health Atlas

This Atlas contains a range of available data for people of all ages living in the CNAHS region. The information has been collated from across sectors and from a variety of sources. However, there are some significant gaps. These may reflect 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 health and wellbeing of people in the CNAHS region.

Particular deficiencies emphasise the paucity of information about health services that are provided in South Australia. 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 person with severe asthma may have had multiple hospital admissions, and is therefore 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.

Furthermore, there are limited available data about the extent or nature of the services established to serve the needs of particular population groups, for example, children and young people with a disability, refugees or Aboriginal and Torres Strait Islander people. Furthermore, at a state level, the access and usage of services by a range of disadvantaged people cannot be analysed. These deficiencies have significant implications for the planning, monitoring, resourcing and evaluation of health services for people in South Australia over the longer term.

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

The indicators presented in the atlas are those for which reliable data are available, in particular data that can be mapped to show variations by area, across the CNAHS region. In some cases, data are not available to show trends over time, or variations between population groups, for some aspects of the social, economic and environmental factors that we wish to show. In others, the data are not ideal but are the best available. Table 2 indicates data that would have been useful for a range of factors that impact on health and wellbeing, but for which, there are no reliable small area datasets that describe these factors.

Table 2: Examples of potential indicators, for which suitable local area data were not available

Topic	Potential indicators and their relevance
Physical environment	Air quality; levels of noise, dust (including from industry)
Refugees	Language competency; emotional and health issues
Social support, social networks	Ability to borrow money in a crisis; levels of trust among individuals or within specific neighbourhoods
Interpersonal violence	Levels of domestic and other forms of violence; impact on quality of life
Levels of adult literacy	Reading/writing levels: ability to read instructions, labels
Disability	Levels of different forms of disability; impact on quality of life
Financial stress	Levels of personal and household debt
Homelessness	Personal characteristics; duration of homelessness; health problems
Housing quality	Availability of electricity, running water; insulation in houses
Work environment	Sickness absence from work; sense of control over work; extent of effort-reward balance or imbalance; job security

The Burden of Chronic Diseases and their Risk Factors

As in other developed countries, Australia is now facing an increasing social and economic burden because of the impact of chronic diseases (for example, heart disease, stroke and diabetes) and their associated biomedical risk factors (such as obesity and overweight, high blood pressure, tobacco smoking, and physical inactivity) [43]. In South Australia, these diseases and conditions contribute very substantially to the burden of premature death and early loss of life, and of morbidity and disability [44].

- As life expectancy rises, the chance of living long enough to suffer from age-related chronic diseases and disability also increases [45].
- It is estimated that at least 450,000 people over the age of 20 years in SA have at least one preventable chronic disease, and the burden is growing [44].
- For many Aboriginal communities, there are higher levels of chronic disease, which occur earlier in life [44].
- More than one third of hospital case mix expenditure in SA for 2002-03 (an amount of $300 million or 36 per cent of the total) can be attributed to four groups of chronic diseases: cardiovascular health, diabetes, arthritis and musculoskeletal conditions, and asthma/chronic pulmonary disease [44].

As a group, chronic diseases tend to have common risk factors and determinants, and are seldom cured completely [46]. Individual and population level influences interact to determine the degree of disease burden and illness, and unhealthy risks and behaviours may be passed on through families, communities, and populations following demographic gradients [47]. At different stages in life, common risk factors include poor intra-uterine conditions; educational disadvantage; inadequate living environments that fail to promote healthy lifestyles; poor diet and lack of exercise; alcohol misuse and tobacco smoking [48].

Risk factors are also increasingly more prevalent in areas of low socioeconomic status and in communities characterised by low levels of educational attainment; high levels of unemployment; substantial levels of stress, discrimination, interpersonal violence and exclusion; and poverty. There is a higher prevalence of such factors in the Indigenous population (as a result of the effects of colonisation and dispossession), and among other socioeconomically disadvantaged people [48, 49].

A disproportionate chronic disease burden is experienced by socioeconomically disadvantaged groups within the population [44]. The prevalence of chronic disease varies across the socioeconomic gradient for a number of specific diseases, and for important disease risk factors. It is likely that age-adjusted morbidity rates may decrease over the next ten years for cardiovascular diseases and injuries, but increase for cancer, diabetes mellitus, dementia and mental health disorders [43].

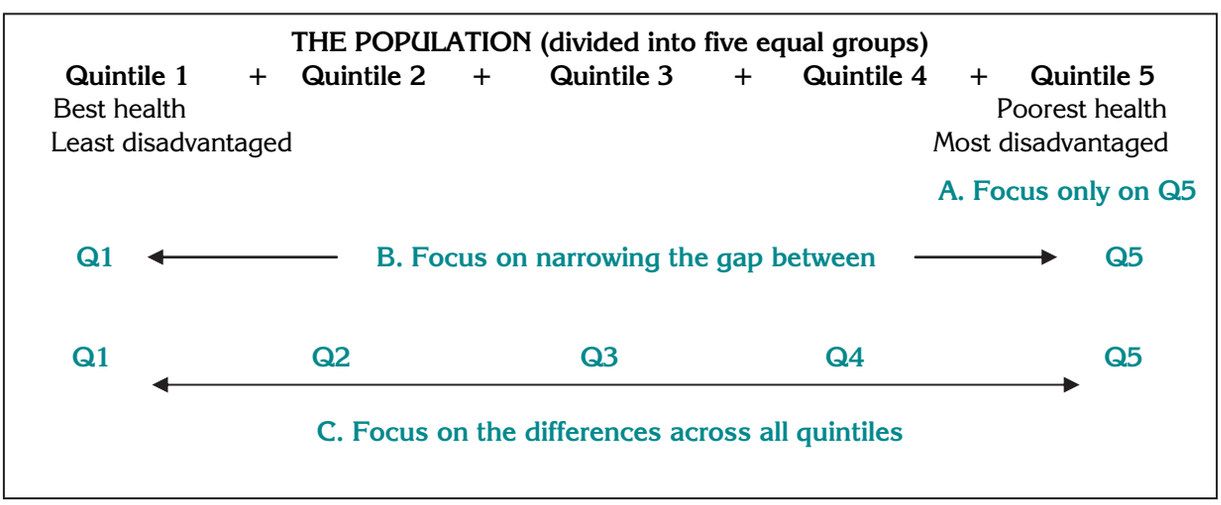
injuries, but increase for cancer, diabetes mellitus, dementia and mental health disorders [43]. Therefore, any move to address the impact of chronic disease, at population level, needs to take into account the socioeconomic inequalities [50].

Approaches to try to limit risky health practices or to modify lifestyle factors that impinge negatively on individual health have been effective mainly for those who have a high level of education, a degree of control over their lives and a reasonable income. However, not surprisingly, these strategies have been far less successful for those population groups who are already socioeconomically disadvantaged. This has meant that the difference in the health of the groups may have widened, leading to greater inequality and inequity, not less [51].

Addressing Health Inequality

Throughout the Social Health Atlas, there is substantial evidence of the powerful influence of social and economic factors on the health of South Australians, depicted by the geographic patterns of health inequalities and the socioeconomic gradients in health. The challenging policy objective is how best to address them. First of all, however, there are a number of different approaches to thinking about health inequalities and what each means in terms of possible policy solutions (Figure 2).

Figure 2: Thinking about health inequality and possible policy approaches
(Adapted from Graham 2004)



Strategies for addressing health inequalities can be described in the following ways [52]:

- Some view the impact of social disadvantage on the health of the poorest groups in the population, such as Aboriginal and Torres Strait Islander people, as the priority policy goal (Focus A).
- Others identify the gap between the health of those at the outer ends of the socioeconomic hierarchy (those with the poorest health and those with best health), and see the narrowing of the gap between the two as the goal [53, 54] (Focus B).
- The socioeconomic gradient in health that runs across the whole population can also be the focus, rather than looking solely at social disadvantage, or the health gap (Focus C).

The last approach widens the frame of health inequality in three ways [52]. Firstly, it looks for the causes of health inequality in the systematic differences in life chances and opportunities, living standards and lifestyles that are associated with people's unequal positions right across the socioeconomic hierarchy, and for the pathways through which they influence health [55]. Secondly, as a result, addressing health inequalities becomes a population-wide goal that includes every citizen. Thirdly, 'reducing health gradients' provides a comprehensive policy goal: one that encompasses

remedying disadvantages and narrowing health gaps within the broader goal of equalising health chances across all the socioeconomic groups [52].

We must be careful about the impact of any policy intervention to improve the community's wellbeing, to ensure that health inequalities are not inadvertently increased. Some programs, by their very success, can widen the gap between groups in the population; for example, they may be more attractive to those who are already healthier, or not as effective for certain groups with poorer health, less education or who are disadvantaged in other ways [56]. Thus, different approaches and mixes of policies and programs must be mounted to address health inequalities. These may include more precise targeting, but also greater attention to community-based dimensions of 'interdependence' between individual behaviours, key determinants, and community and institutional resources.

Improving the health of poor groups and improving their position relative to other groups are necessary elements in a strategy to reduce the socioeconomic gradient. However, neither is sufficient on its own. To reduce the socioeconomic gradient, health in other socioeconomic groups also needs to improve at a faster rate than in the highest socioeconomic group. Thus, policies to remedy health disadvantages, to close health gaps and to reduce health gradients need to be pursued together, and not at the expense of each other [52].

Protecting and improving overall levels of health in the South Australian population is no longer a sufficient justification for investment in health; this investment must also yield a more equal distribution of health between socioeconomic groups [1]. The inequalities in health that are reflected in the Social Health Atlas are, for the most part, avoidable and inequitable. In any given society, those in the best health set a standard which all should be able to enjoy. If this is so, it is those in the poorest groups who face the most profound denial of their health as a fundamental human right [52].

As outlined earlier, there is now substantial evidence that wellbeing is the result of complex interactions of the social, biological and ecological environments in which people live [57]. If these environments are supportive, they can provide a foundation for the development of competence and skills that underpin learning, behaviour and health throughout life. However, a lack of enabling social and environmental conditions results in poorer life outcomes for people [53, 58].

This situation, however, is not inevitable. There is a growing body of knowledge that can provide direction for developing policies to reduce inequities in modern societies. The socioeconomic environment is a powerful and potentially modifiable factor, and public policy is a key instrument to improve this environment, particularly in areas such as housing, taxation and social security, work environments, urban design, pollution control, educational achievement, and early childhood development [8]. So, health services, such as the CNAHS, should work with those from other sectors in order to bring about the improvements in health that are necessary for their communities.

A focus on the environmental context of life in no way implies that other factors such as genetics, lifestyles or use of services do not figure in determining health and wellbeing; rather, it highlights a greater understanding in recent years of the hidden social factors that underpin differences in the likelihood of having a healthy and fulfilling life [59]. Health inequalities, an ageing population and changing patterns of disease present challenges that will require new responses from the health care system, its workforce and its ways of delivering services. However, to achieve good health for every segment of the population, we should also address the behavioural, social and environmental factors that determine health, and make a real shift from a narrow focus on illness, to a broader focus on health and wellbeing.

DATA PRESENTATION

The indicators presented are those to be included in the third edition of the Social Atlas of South Australia, which has been recently provided to the Department of Health for review, prior to release.

The majority of the indicators presented relate to the years around the 2001 Census, in part reflecting the time needed to put together such a large set of indicators. Where later data exist, those produced in this atlas for earlier years are likely to reflect a geographic pattern that remains current in 2005.

Each of the selected indicators is presented over two pages. Following a brief description of the purpose of the indicator, the text describes the geographic variation in the characteristic in the map; a graph shows how the characteristic varies by socioeconomic status; and a table provides the numbers and percentages on which the analysis is based. The table also includes comparative figures for the sub-regions within the CNAHS, for Southern Adelaide Health Service, and for the total of the metropolitan regions and the State.

Areas

The Central Northern Region covers the central, western, eastern and northern suburbs of the Adelaide Statistical Division incorporating the Local Government Areas (LGAs) of Adelaide, Prospect, Walkerville, Burnside, Campbelltown, Charles Sturt, Norwood-Payneham-St Peters, Playford, Port Adelaide-Enfield, Salisbury, Tea Tree Gully, Unley, West Torrens and Adelaide Hills.

These 14 LGAs are divided, by the Australian Bureau of Statistics) into 37 Statistical Local Areas (SLAs) for the collection and publication of data. The names of the SLAs are shown in a key map at the end of this atlas.

The SLAs have been grouped into three sub-regions, developed by the region to aid strategic planning work. The sub-regions are Northern, Western and Eastern, and are shown on the maps by a thicker line, overlaid on the SLA boundaries.

These are shown in Map 1 on page 5 and in the fold out Key Map at the end of the report.

Reference is made to the 'metropolitan regions', covering the Central Northern Adelaide Health Service and the Southern Adelaide Health Service: reference is also made on occasion to Metropolitan Adelaide, which comprises these two regions and Gawler.

Socioeconomic Groupings of Areas: Quintiles

In addition to mapping the geographic distribution of the population, the SLAs in the CNAHS region have been aggregated into five groups of similar socioeconomic status: throughout the report, these groups are called quintiles. Each of the five quintiles is made up of SLAs of similar socioeconomic status: a more detailed description is provided in the box (opposite page). Each indicator has been calculated for the quintiles and is presented in a graph and a table in the report. In this way, comparisons can be made between the populations living in areas of different socioeconomic status.

The sub-regional totals for each variable are also shown with the totals for the quintiles, as are the total for the CNAHS, Southern, the metropolitan regional and South Australian totals.

Construction of the socioeconomic groupings of areas: the quintiles

The five groups have been constructed using the Australian Bureau of Statistics (ABS) Index of Relative Socio-Economic Disadvantage (IRSD) as the measure of each the socioeconomic status of each SLA. The SLAs in the region were ranked in order of their IRSD score, then five groups were formed, each with around 20% of the region's population. The first quintile comprises SLAs with the highest IRSD scores (most advantaged areas) and the last quintile comprises areas with the lowest IRSD scores (most disadvantaged areas).

The IRSD is one of four Socio-Economic Indexes for Areas (SEIFA) produced by the ABS following the 2001 Census using data variables collected in the Census.

DATA DEFINITIONS

Definitions of the Census data mapped are in the Appendix.

Definitions of the other indicators are on the PHIDU web site, together with the data on which this report is based (www.publichealth.gov.au).

Standardised Ratios

Where the comparisons between areas for an indicator are likely to be affected by variations in the age profile of the area, the data have been age-standardised. This effectively means any differences in age-standardised rates between areas are reflecting the influence of factors other than age. In this atlas, the age-standardised data are presented as an index, with the South Australia or the metropolitan regions[1] as 100; an index of 110 in an area means the standardised ratio is 10% higher (for an area of its population size and structure) in the area than expected from the State rates. An index of 85 means the standardised ratio is 15% lower (for an area of its population size and structure) in the area than expected from the State rates.

Where a ratio for an area varies significantly from the State rate, the degree of statistical significance is indicated by asterisks. A single asterisk indicates that the ratio is statistically significant at the 5% confidence level, that is, that the likelihood of the observed ratio being due to chance or random error is 5%. A double asterisk indicates that the observed ratio is statistically significant at the 1% confidence level.

Rate Ratio

The graph of the socioeconomic groupings of areas in the CNAHS includes a 'rate ratio', which shows the differential between the average percentage or standardised ratio for that indicator (eg. low income families) in the most disadvantaged areas (Quintile 5) and the most advantaged areas (Quintile 1). The statistical significance of rate ratios is shown with an asterisk(s), as described above.

DATA SOURCES

A summary table describing the data sources is in the Appendix.

More details of the sources are on the PHIDU web site, together with the data on which this report is based (www.publichealth.gov.au).

[1] Data were standardised to the metropolitan regions where data were not available for the State as a whole (eg. domiciliary care and community health services and the estimates of chronic diseases)

STATISTICAL OVERVIEW

Current and Projected Population

The population in the CNAHS region is expected to grow only marginally over the years from 2005 to 2020; however, this low overall growth hides substantial variations in growth at older ages. For example, over the five years from 2005 to 2010, the population is projected to grow by just 1.5% or 0.3% per annum (Table 3). Growth rates in the next two five-year periods are lower, at 1.2% and 1.0%. The overall growth of 1.5% in the five years to 2010 is comprised of small declines at ages below 45 years (and, for females, at ages 75 to 84 years) and growth in the 65 to 74 years and 85 years and over age groups (in the latter group the growth is substantial). Notably, the growth in the population of older males is above that for females, with the number of males at a lower level than for females. The low level of growth to 2010 in the 75 to 84 year age group in the proportion of population who are males, and the small decline for females, reflect low birth rates in the 1930s and loss of life in the Second War World.

As the cohorts age, growth is more pronounced from 2010 to 2015, for both males and females, in the 65 to 74 and 75 to 84 year age groups, but lower in the 85 years and over age group. In the five years to 2020, the strongest growth for males is projected to be at 75 to 84 years, whereas for females it is in the 65 to 74 year age group. By 2020, growth at the oldest ages is projected to have slowed considerably in comparison with the earlier periods.

Table 3: Projected Resident Population in CNAHS, selected years, 2005 to 2020

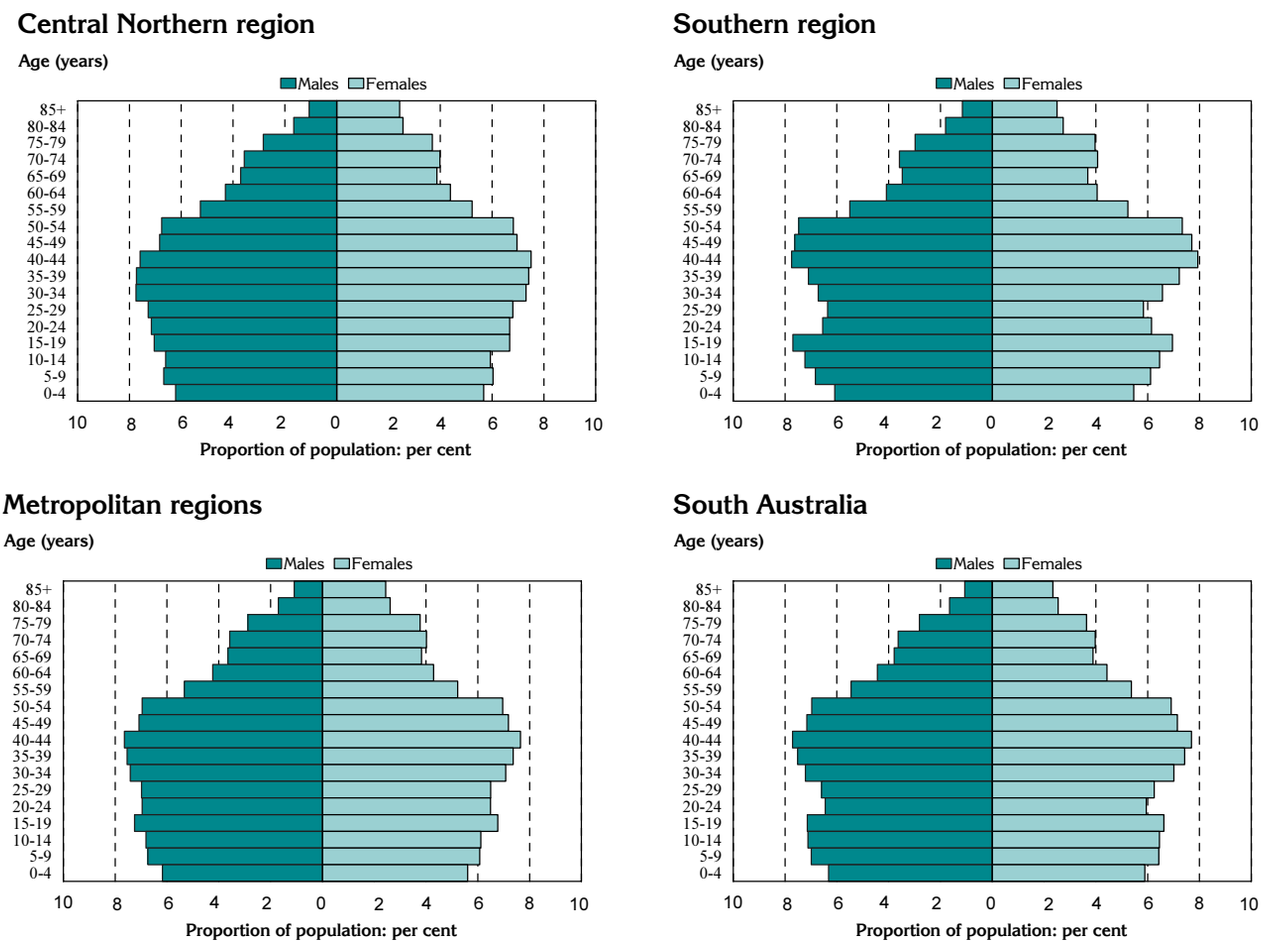
Sex and age	2005	2010		2015		2020	
	Number	Number	Change	Number	Change	Number	Change
Males							
0-24	124,716	120,486	-3.4	115,749	-3.9	110,923	-4.2
25-44	112,492	110,131	-2.1	108,870	-1.1	108,154	-0.7
45-64	93,618	101,048	7.9	102,416	1.4	103,297	0.9
65-74	27,473	31,015	12.9	37,823	22.0	42,622	12.7
75-84	18,792	19,164	2.0	20,543	7.2	24,049	17.1
85+	4,676	6,355	35.9	7,937	24.9	8,722	9.9
Total	**381,767**	**388,199**	**1.7**	**393,338**	**1.3**	**397,767**	**1.1**
Females							
0-24	119,869	115,120	-4.0	110,326	-4.2	105,471	-4.4
25-44	109,954	107,707	-2.0	106,213	-1.4	104,916	-1.2
45-64	98,426	105,868	7.6	106,220	0.3	106,040	-0.2
65-74	30,803	34,030	10.5	41,572	22.2	47,571	14.4
75-84	25,602	24,861	-2.9	25,702	3.4	28,985	12.8
85+	10,458	13,029	24.6	14,832	13.8	15,457	4.2
Total	**395,112**	**400,615**	**1.4**	**404,865**	**1.1**	**408,440**	**0.9**
Persons							
0-24	244,585	235,606	-3.7	226,075	-4.0	216,394	-4.3
25-44	222,446	217,838	-2.1	215,083	-1.3	213,070	-0.9
45-64	192,044	206,916	7.7	208,636	0.8	209,337	0.3
65-74	58,276	65,045	11.6	79,395	22.1	90,193	13.6
75-84	44,394	44,025	-0.8	46,245	5.0	53,034	14.7
85+	15,134	19,384	28.1	22,769	17.5	24,179	6.2
Total	**776,879**	**788,814**	**1.5**	**798,203**	**1.2**	**806,207**	**1.0**

Source: Compiled from ABS Population Projections 2005 to 2050 (unpublished)

Age and Sex

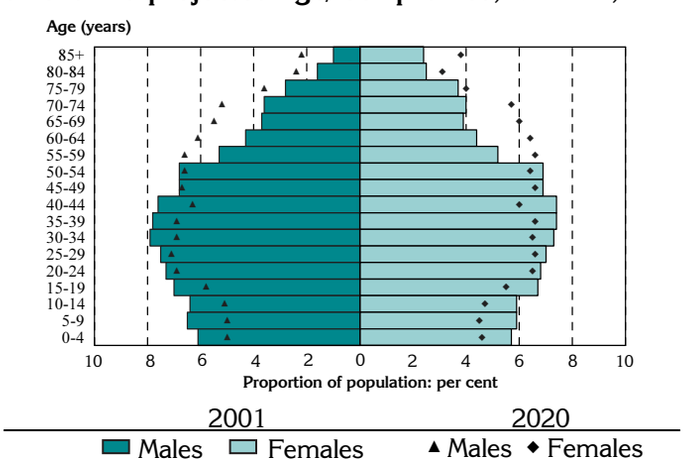
The age profile of males and females in the CNAHS region (Figure 3) is notably different from that in the Southern region, from the 5 to 9 year age group through to the 35 to 39 year age group. The main differences for males are the lower proportions at ages 5 to 19 years in CNAHS, and the higher proportions through to 39 years of age. For females, the differences are most marked in the age groups 10 to 14 and 15 to 19 years (lower), and from 20 to 34 years of age (higher). For females, there are also smaller differences at older ages.

Figure 3: Age and sex profiles, metropolitan regions and South Australia, 2001



Source: Compiled from ABS Estimated Resident Population, 2001

Figure 4: Current and projected age/ sex profiles, CNAHS, 2001 and 2020

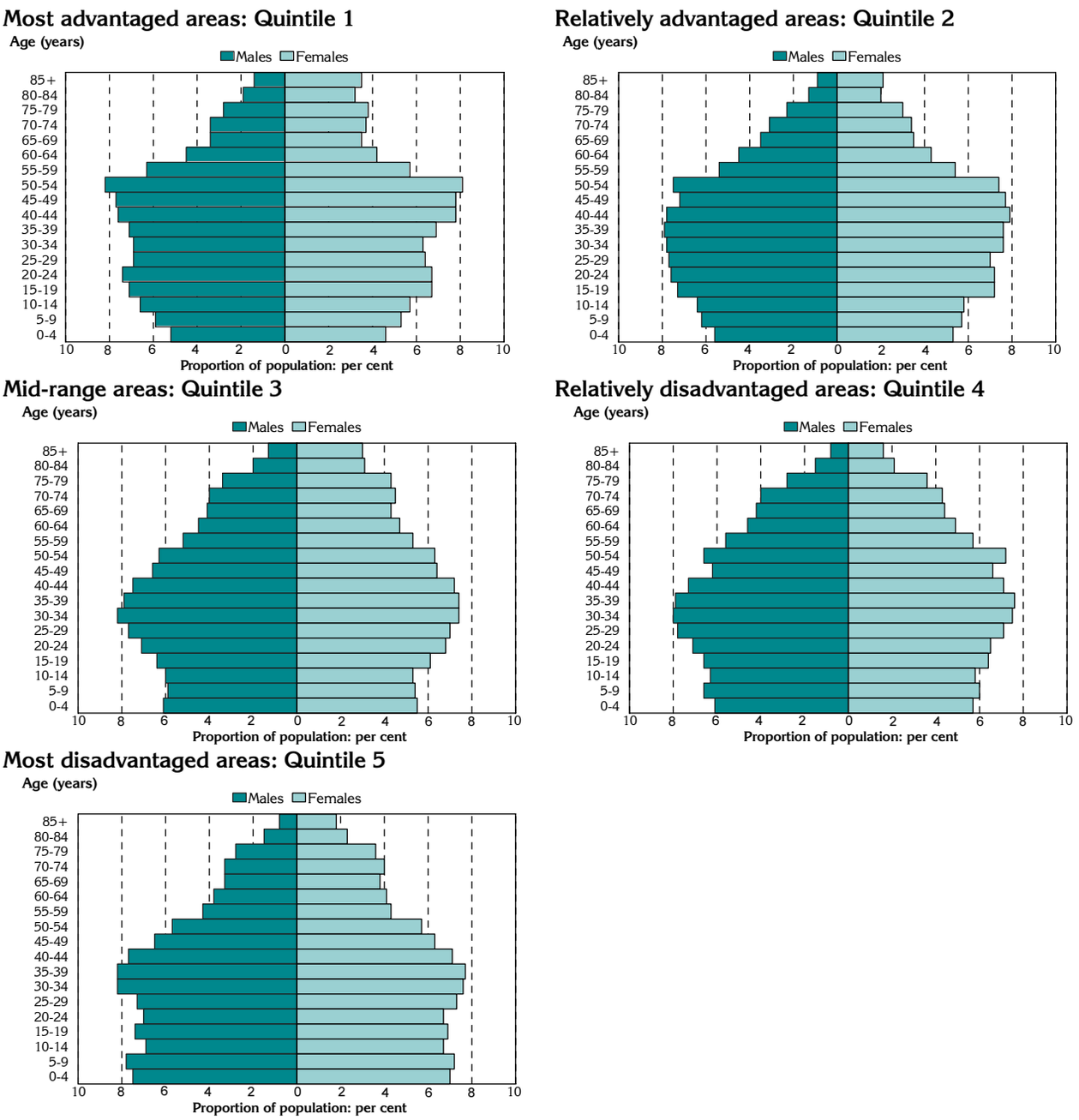


Source: Compiled from ABS Estimated Resident Population 2001 and ABS Population Projections 2005 to 2050 (unpublished)

The projected population for the CNAHS region (Figure 4, above) clearly shows the substantial change in population structure expected over the next 20 years. By 2020 the projections show smaller population shares at younger ages and larger population shares at older ages, with a clear turnaround from the 55 to 59 year age group.

When examined by socioeconomic groupings of areas, the age profiles of males and females in the CNAHS region (Figure 5) also differ notably. The most advantaged areas (Quintile 1) have the highest proportions of their population at older ages (and in particular the oldest ages) and the lowest proportions at younger ages. The population in the most disadvantaged areas is younger, with higher numbers at the youngest ages (reflecting a higher total fertility rate), but with smaller proportions of teenagers and young adults, likely to be a reflection of higher death rates at these ages.

Figure 5: Age and sex profiles, socioeconomic groupings of areas, CNAHS, 2001



Source: Compiled from ABS Estimated Resident population, 2001