The South Australian Department for Health and Ageing has made every effort to ensure that the information included in the report is up-to-date as at time of publication and does not accept responsibility for any errors or omissions.

Data within this report is accurate as of the date gathered however data, comparisons and trends are subject to change with time.

References to Aboriginal or Indigenous people within this report should be presumed to always include Torres Strait Islander people.

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<tr>
<td>ABS</td>
<td>Australian Bureau of Statistics</td>
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<td>ACSQHC</td>
<td>Australian Commission on Safety and Quality in Health Care</td>
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<td>ADIS</td>
<td>Alcohol and Drug Information Service</td>
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<td>ADWG</td>
<td>Australian Drinking Water Guidelines</td>
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<td>AEDI</td>
<td>Australian Early Development Index</td>
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<td>AHMPPI</td>
<td>Australian Health Management Plan for Pandemic Influenza</td>
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<td>AHPPC</td>
<td>Australian Health Protection Principle Committee</td>
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<td>AHS</td>
<td>Australian Health Survey</td>
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<td>AIHW</td>
<td>Australian Institute of Health and Welfare</td>
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<td>ASGS</td>
<td>Australian Statistical Geography Standard</td>
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<td>BBV</td>
<td>blood-borne virus</td>
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<td>BMI</td>
<td>Body Mass Index</td>
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<td>CALD</td>
<td>Culturally and Linguistically Diverse</td>
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<td>CaFHS</td>
<td>Child and Family Health Service</td>
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<td>CATI</td>
<td>Computer Assisted Telephone Interviewing</td>
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<td>CDCB</td>
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<td>CIV</td>
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<td>Council of Australian Governments</td>
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<td>Childhood Obesity Prevention and Lifestyle</td>
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<td>DALY</td>
<td>Disability Adjusted Life Year</td>
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<td>DFEEST</td>
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<td>DECD</td>
<td>Department For Education and Child Development</td>
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<td>DEWNR</td>
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<td>Department for Planning, Transport and Infrastructure</td>
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<td>Commonwealth Department of Sustainability, Environment, Water, Pollution and Communities</td>
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<td>Environmental Health Officer</td>
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<td>Early Intervention Pilot Program</td>
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<td>HCW</td>
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<td>HELPPI</td>
<td>Healthy Eating Local Policies and Programs</td>
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HiAP  Health in All Policies
HLA  Health Lens Analysis
HOS  Health Omnibus survey
iRASD  Index of Relative Socio-economic Advantage and Disadvantage
KID  Kessler Psychological Distress Scale
LGA  Local Government Association
LHN  Local Health Network
MoU  Memorandum of Understanding
MRU  Metropolitan Referral Unit
MVEV  Murray Valley Encephalitis Virus
NBCSP  National Bowel Cancer Screening Program
NCD  Non-communicable disease
NHMRC  National Health and Medical Research Council
NIP  National Immunisation Program
NSQHS  National Safety and Quality Health Service
OPAL  Obesity Prevention And Lifestyle Program
PANORAMA  Physical Activity Nutrition Observatory: Research and Monitoring Alliance
P&EH Act  Public and Environmental Health Act 1987
PROS  Population Research and Outcome Studies
RHD  Rheumatic Heart Disease
RMP  Risk Management Plan
RRV  Ross River virus
SAAHS  South Australian Aboriginal Health Survey
SACSP  SA Cervix Screening Program
SADS  South Australian Dental Service
SAMSS  South Australian Monitoring and Surveillance System
SASP  South Australia's Strategic Plan
SASPS  South Australian Suicide Prevention Strategy
SDC  Social Development Committee
SDS  School Dental Service
SEIFA  Socio-Economic Indexes for Areas
SES  State Emergency Service
SRER  Start Right Eat Right
STI  Sexually Transmitted Infection
TODS  Transit-Oriented Developments
VET  Vocational Education and Training
WHO  World Health Organization
WMS  Wastewater Management Section
ZEC  Zone Emergency Centre
ZEMC  Zone Emergency Management Centre
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August 2013

Hon Jack Snelling MP
Minister for Health and Ageing
Level 9, Citi Centre
11 Hindmarsh Square
ADELAIDE SA 5000

Dear Minister

RE: STATE OF PUBLIC HEALTH FOR SOUTH AUSTRALIA 2012 REPORT

Pursuant to Section 23 of the South Australian Public Health Act 2011, (the SA Public Health Act) I provide you with this report on public health trends, activities and indicators in South Australia, the implementation of the new State Public Health Plan and implementation of the SA Public Health Act.

The SA Public Health Act was approved by Parliament in June 2011 and is the result of a review of the Public and Environmental Health Act 1987. The new Act provides a modernised, flexible legislative framework, so that South Australia can be better prepared to respond to new public health challenges in the 21st Century as well as traditional hazards.

The new legislation brings South Australia into line with international best practice in public health and places this state at the forefront of Australian legislation in this area.

Under the SA Public Health Act the Chief Public Health Officer is required to report on Public Health to the Minister every two years. This report describes the strength, scope and diversity of public health functions, including the prevention and control of communicable disease and non-communicable disease, epidemiology, environmental health, health risk factors and the numerous agencies providing public health services.

This report also goes further to reflect the objects and principles of the SA Public Health Act. It recognises that effective public health requires effective partnerships across many different agencies, sectors and services. It recognises the need to redefine the indicators of public health outcomes to reflect the collective effort and partnerships in public health. For the first time indicators for the social determinants of health, such as children’s development, urban design, income and employment have been integrated into the public health reporting framework. Non-communicable disease and health risk factors also feature as a key component to the public health response required in South Australia.

Under the new Act, the notable partnership between the Department for Health and Ageing (SA Health) and local government is paramount. Local Councils are public health authorities for their area charged with the promotion of proper standards of public and environmental health. Local Councils consistently attain a high standard of output in this field.

I would also note the establishment of the new South Australian Public Health Council which was appointed by the Governor of South Australia on 23 February 2012.

I acknowledge the work of the many public health practitioners contributing to the health and wellbeing of all South Australians and I commend the STATE OF PUBLIC HEALTH FOR SOUTH AUSTRALIA 2012 REPORT to you.

Yours sincerely

Dr Stephen Christley
Chief Public Health Officer
Presiding Member
South Australian Public Health Council
“The function of protecting and developing health must rank even above that of restoring it when it is impaired.”

– Hippocrates

This is the first Chief Public Health Officer’s Report and has been developed to meet the requirements of Section 23 of the SA Public Health Act and covers the period from 30 June 2011 to 31 December 2012.

As required by the SA Public Health Act, the report addresses public health trends, activities and indicators in South Australia, the implementation of the State Public Health Plan and the administration of the SA Public Health Act.

Public health means the health of individuals in the context of the wider health of the community. Environmental health, health protection and control of communicable disease remain important underpinnings of public health action. However health challenges in the 21st century also include those illnesses impacted upon by our physical and social environment such as cardiovascular disease and cancer and also depression and mental illness.

These require public health to face new challenges that arise out of the way our communities are organised and the circumstances people find themselves in.

This report shows that South Australians generally enjoy good health. It also reveals some adverse trends in health and variation in health outcomes. In nearly every case, when measured, the most disadvantaged in our community demonstrate the poorest health status. This is a significant challenge which requires partnership and collaboration across a wide range of sectors, partners and stakeholders.

The SA Public Health Act and the State Public Health Plan provide a framework for public health action, services and strategies to underpin community wellbeing, recognising the role of state and local government and other public health partners in building healthier communities. Consequently, this report incorporates health themes and indicators that draw on information from a wide range of sources and recognises that public health and community wellbeing are a shared concern and are impacted by many different social, economic and environmental factors.

Importantly, the principles recognised under the SA Public Health Act include participation, prevention and partnership. These along with the other principles articulated in the SA Public Health Act form the core values which underpin the work of public health. Meeting the challenges of public health in the 21st century will require an ongoing commitment to these values. I believe the contents of this report demonstrate and affirm this commitment.

Dr Stephen Christley
Chief Public Health Officer
Public health is something that every society has sought to protect and improve throughout history. Collectively we have always worked to make sure that our communities are designed and function in ways to keep us healthy through protective measures as well as strategies that maintain and improve our health.

The SA Public Health Act defines public health as follows:

Section (3) (1)
Public health means the health of individuals in the context of the wider community;…

(2) Without limiting the definition of public health in subsection (1), public health may involve a combination of policies, programs and safeguards designed –

(a) to protect, maintain or promote the health of the community at large, including where 1 or more persons may be the focus of any safeguards, action or response; or

(b) to prevent or reduce the incidence of disease, injury or disability within the community

South Australia in the 21st century still faces significant public health challenges – making sure that infectious diseases are under control through effective immunisation and other prevention programs; remaining vigilant and prepared to respond to new or re-emerging infectious conditions, particularly those that threaten to become pandemics; and dealing with the growing wave of non-communicable conditions that arise out of a range of common risk factors (for example, overweight and obesity, reduced opportunities for physical activity, overabundant availability of energy-dense, nutrition-poor foods in combination with poor access to nutritious food).

Further risk factors that threaten our health are related to the excessive use of alcohol and the continuing threat posed by tobacco. There already exist a wide range of specific public health programs and strategies aimed at reducing these risk factors. They include specific health-promotion programs, information and social marketing strategies, locally initiated community projects, and policy and regulation controls. In addition, it has been well understood and long known that improving community capacity, resilience, connectedness and the general social, economic and environmental conditions of our communities will significantly improve the opportunities for better health for all.

Globally this link between health, community capacity and the general social, economic and environmental determinants has been identified by the World Health Organization (WHO) through the Commission on the Social Determinants of Health. The determinants of health and wellbeing include the social, economic and physical environment, as well as individual behaviours and characteristics. Addressing the social determinants of health can achieve multiple public policy outcomes. In our present government structures, sectors other than health are responsible for many policy decisions that shape the impact these determinants have on health and wellbeing.

Major gains in population health, reduction in health service cost as well as impact in other areas of public policy, will be achieved through influencing the social determinants of health.

Figure 1 shows the wide spectrum of actions that impact on public health – from taking action on the determinants of health at the earliest level of prevention and specific public health actions designed to address prevention and remediation of identified public health threats, through to dealing with the presence of the preventable burden of diseases and injuries once they have occurred. No one agency or sphere of government has responsibility for the whole spectrum. The public health planning system as described in the SA Public Health Act covers this spectrum and is based on intersectoral cooperation and partnerships.
The spectrum of public health action

Wider determinants of health includes:
- Physical environment (air quality, water quality, noise levels)
- Safe food and water
- Food security
- Access to green space
- Urban form and transport
- Housing quality
- Social networks and social inclusion
- Employment
- Educational opportunities
- Participation in recreational and cultural activities
- Community participation opportunities

Action on Determinants

Specific Actions to Protect and Promote health. Often the domain of State Government non-health sectors as well as Local Government.

Core Public Health Services and Strategies

Specific actions on the Preventable Burden of Disease. Often the domain of agencies providing specific health or health care related services.

Preventable Burden of Disease includes:
- Communicable diseases
- Cardiovascular conditions
- Diabetes
- Certain cancers
- Certain musculo-skeletal conditions
- Chronic respiratory conditions
- Conditions related to tobacco, alcohol and drug misuse
- Mental illness
- Preventable injuries
- Poor oral health
Section 23 (1) (c) requires this report to provide information on the administration of the South Australian Public Health Act 2011. This first report will detail the process of review and development of the SA Public Health Act together with the progressive implementation of its provisions.

Review and Development

The SA Public Health Act repeals and replaces the Public and Environmental Health Act 1987 (P&EH Act). The review of the P&EH Act commenced in 2000 with the release of a discussion paper. This discussion paper drew responses principally from Local Government, public health practitioners and academics and concerned individuals. Work on this review was suspended as priorities for legislative reform were necessarily shifted to the need for national reform of food safety legislation. This reform was of particular significance to South Australia due to the Garibaldi food poisoning events of the late 1990s.

The State Government recommitted to a review of the P&EH Act which recommenced in 2006. This recommenced review incorporated the work of the 2000 review. Because change to public health legislation would have particular implications for Local Councils it was conducted under the terms of the State/Local Government Agreement. A joint consultative committee was established made up of staff from the Department for Health and Ageing (SA Health) and nominees from the Local Government Association (LGA) and Environmental Health Australia (EHA) which is the professional body representing Environmental Health Officers.

A discussion paper and draft Bill were released for public comment in August 2009. There was broad support for the policy directions contained within the draft Bill. At the close of the consultation process there followed a further period of discussions and negotiations with the LGA and EHA through the joint consultative committee, together with further discussions with a range of stakeholders who had made submissions raising specific points needing further exploration. This process led to a small range of modifications to the final Bill which was introduced into the South Australian House of Assembly in September 2010. The Bill was passed with a small range of amendments in June 2011.

Key features of the South Australian Public Health Act 2011

Key features of the SA Public Health Act are summarised in Table 1.

Table 1 – Key features of the SA Public Health Act

<table>
<thead>
<tr>
<th>Part 1 Preliminary</th>
<th>For the first time in South Australian legislation, the SA Public Health Act defines the scope of public health</th>
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<tr>
<td>Part 2 Objects Principles and Interaction with other Acts</td>
<td>For the first time in South Australia, the legislation incorporates a series of objectives specifying the purpose of public health. Establishes a series of Principles to guide the actions of those charged with the administration of the SA Public Health Act. These Principles include: &gt; Precautionary principle &gt; Principle of proportionate regulation &gt; Sustainability principle &gt; Principle of prevention &gt; Population focus principle &gt; Participation principle &gt; Partnership principle &gt; Equity principle Section 14 also introduces a range of principles which apply human rights provisions required by the World Health Organization’s International Health Regulations, to the exercise of necessary coercive powers required to protect public health.</td>
</tr>
</tbody>
</table>
| Part 3 Administration | Establishes a clear role for the Minister for Health and Ageing to advance the objects of the SA Public Health Act and confirms the Minister's role as the primary source of advice to Government about health preservation, protection and promotion.

For the first time in South Australian, legislation the SA Public Health Act establishes the statutory role of Chief Public Health Officer.

Establishes the South Australian Public Health Council to provide strategic advice on key public health issues.

Confirms Local Councils as public health authorities for their areas with a range of specific functions for the protection and promotion of health.

Establishes a scheme for state and local authorised officers for the purposes of administering the SA Public Health Act and exercising specific powers. |
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<tr>
<td>Part 4 Public Health Plans</td>
<td>For the first time in South Australian legislation, the SA Public Health Act establishes a system of public health planning including the development of a State Public Health Plan with complementary regional public health plans by Local Councils.</td>
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<tr>
<td>Part 5 Public Health Policies</td>
<td>Establishes a system for the development of formal public health policies as subsidiary legislation. These policies are developed for the prevention and management of specific risks to public health.</td>
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<tr>
<td>Part 6 General Duty</td>
<td>For the first time in South Australia establishes, a statutory general duty for everyone to take reasonable steps not to harm public health. This is a central feature of the health protection function of the SA Public Health Act.</td>
</tr>
<tr>
<td>Part 7 General Public Health Offences</td>
<td>Establishes a scheme for determining offences for material and serious risks to public health.</td>
</tr>
<tr>
<td>Part 8 Prevention of Non-communicable Conditions</td>
<td>For the first time in Australian public health legislation, establishes a scheme for the declaration by the Minister of non-communicable conditions of public health concern. Declarations give rise to the development of codes of practice for industry and other sectors of society for preventing or reducing the incidence of non-communicable conditions.</td>
</tr>
<tr>
<td>Part 9 Notifiable Conditions and Contaminants</td>
<td>Continues the scheme for the mandatory notification of diseases or medical conditions. Introduces emergency measures enabling the Minister to declare a condition to be a notifiable condition. Provides a range of powers to prevent the spread of diseases constituting notifiable conditions where necessary. For the first time in South Australian legislation establishes a scheme for the mandatory notification of contaminants in the environment of public health concern.</td>
</tr>
<tr>
<td>Part 10 Controlled Notifiable Conditions</td>
<td>Continues the scheme for the declaration of diseases or medical conditions to be controlled notifiable conditions. Introduces emergency measures enabling the Minister to declare a condition to be a controlled notifiable condition. Provides for a graded response for the management of persons who have or who are suspected of having a controlled notifiable condition which poses a risk to public health (this includes the application of powers to direct and detain where necessary). Provides for a system of independent judicial review where orders are made. Provides for the recognition of interstate public health orders made under corresponding legislation in other jurisdictions.</td>
</tr>
<tr>
<td>Part 11 Management of Significant Emergencies</td>
<td>Continues the scheme for the management of significant public health emergencies which articulates with the provisions of the Emergency Management Act 2004.</td>
</tr>
<tr>
<td>Part 12 Notices and Emergency Situations</td>
<td>Provides a uniform procedure for issuing notices under the SA Public Health Act and procedures for taking action in urgent circumstances. Describes the process for reviews and appeals against compliance notices under Part 6 (the General Duty). This includes an application to an independent Public Health Review Panel and/or an appeal to the District Court.</td>
</tr>
<tr>
<td>Part 13 Miscellaneous</td>
<td>Provides a range of measures for the exercise of powers and provisions under the SA Public Health Act including the regulation making power.</td>
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Implementation

Resources and Commencement

During Parliamentary debates the LGA sought and received a public assurance from the Minister for Health and Ageing that Local Councils would be materially assisted to implement the new Act. Following discussions with the Joint Consultative Committee an implementation plan for the SA Public Health Act was developed and funded. This led to a Service Agreement between SA Health and the LGA which committed $1.26 million over five years, in the first instance, to ensure the effective implementation of the SA Public Health Act and the retention of public health capacity within the LGA to provide ongoing, sustainable support to Councils. This funding was complemented by a reorientation of internal SA Health resources within Public Health Services to ensure there was a dedicated focus assisting in the implementation of the SA Public Health Act. This amounted to the equivalent of $980,000 over 5 years. Additional funding in 2011-2012 of $77,000 was also provided to the LGA for the development of guidance materials to assist Local Councils undertake public health planning under the provisions of Section 51 of the SA Public Health Act.

By agreement with the LGA it was decided to commence the SA Public Health Act in stages over 2012-2013. This staged approach allowed for the necessary training and capacity development required by the public health workforce particularly within Local Government as well as the provision of briefings and information to Councils more generally concerning their role under the legislation.

The Table 2 describes the stages of commencement of the legislation.

**Table 2 – Stages of the commencement of the legislation**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Date</th>
<th>Sections</th>
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<tbody>
<tr>
<td>Stage 1</td>
<td>February 2012</td>
<td>Parts 1-3 Interpretation, objects, principles, Administration (partial) role of Minister, Chief Public Health Officer, South Australian Public Health Council &amp; Local Councils. Section 50 State Public Health Plan. Part 5 Public Health Policies, Part 8 Prevention of Non-communicable conditions, Part 12 Notices &amp; Emergency Situations, Part 13 Miscellaneous, Schedule 1</td>
</tr>
<tr>
<td>Stage 2</td>
<td>September 2012</td>
<td>Part 9 Notifiable conditions and contaminants (including remade regulations), Part 10 Controlled notifiable conditions (including remade regulations), remade Cervical Cancer regulations, Part 10 Management of Significant Emergencies</td>
</tr>
<tr>
<td>Stage 3 (A)</td>
<td>December 2012 – January 2013</td>
<td>State Authorised Officers Sections 51-52 Regional public health plans and reporting on regional public health plans</td>
</tr>
<tr>
<td>Stage 3 (B)</td>
<td>June 2013</td>
<td>General duty, public health offences, Part 12 Notices &amp; Emergency Situations, local authorised officers, Re-made Legionella, Waste Control &amp; General Regulations</td>
</tr>
</tbody>
</table>

Local Government

Local Government has a long standing role and responsibility for the administration of public health laws within its communities. This role is a partnership in collaboration with SA Health operating at the state level with Local Government operating at the neighbourhood level.

The 68 Councils which make up Local Government in South Australia spend more than $1.7 billion a year, about half of which goes on roads and drainage, but also includes waste and recycling, sport, recreation and cultural activities and on library and information services. Figure 2 provides and indicative breakdown of Local Government expenditure by area. Many of these areas have a significant impact on public health.
The South Australian Public Health Act 2011 replaces the Public and Environmental Health Act 1987 and for Local Government it is now the most important piece of public health legislation. The SA Public Health Act recognises and supports a broad and emerging view of public health while maintaining its capacity to respond to long-established problems. In addition to its specific provisions, the SA Public Health Act, and the policies that accompany it, takes account of the fact that the community's health and wellbeing is affected by many fields of regulatory activity, a number of which are undertaken at a Local Government level. This gives the SA Public Health Act a new co-ordination role via its broad objects and more specifically via its public health planning provisions. This does not mean that Councils have prime responsibility for every public health issue identified in their community, but they are best placed to recognise and understand them within the context of the other issues, needs and priorities of their communities.

The public health functions of Local Government are primarily set out in Section 37 of the SA Public Health Act.

Some functions are specific and re-state Local Government’s continuing and traditional role in public health, such as by ensuring that ‘adequate sanitation measures are in place in its area.’

Other functions are broader and reflect the outcomes based approach and the general objectives of reducing risks to public health that is the hallmark of the new Act (‘to have adequate measures in place within its area to ensure that activities do not adversely affect public health’).

Some functions envisage co-ordination or the creating of links between Local Government’s various roles or with other agencies. Most importantly the links between planning and public health are expressed as a specific function, namely: ‘to assess activities and development, or proposed activities or development, within its area in order to determine and respond to public health impacts (or potential public health impacts).’

Co-ordination between Local Government and SA Health is envisaged generally in some functions (such as ‘to cooperate with other authorities involved in the administration of this Act’). Others relate to specific issues notably immunisation. Here a separate section (Section 38) establishes that ‘a council must provide, or support the provision of, immunisation programs for the protection of public health within its area’ and that SA Health will support these services.
Some specific functions in other parts of the SA Public Health Act, such as the preparation and maintenance of state and regional public health plans, further illustrate the importance of partnerships between Councils and also with SA Health as the central body responsible for the State Public Health Plan on behalf of the Minister. More generally, many initiatives and functions undertaken in the interests of public health envisage collaboration between agencies.

Beyond the particular provisions and expectations of the SA Public Health Act, Local Government provides an extensive range of public and environmental health services. Some exist through other public health legislation such as the *Food Act 2001* and its accompanying responsibilities for hygiene and safety. More generally, Councils also provide a significant but often unrecognised contribution to public health by providing public and social infrastructure such as roads and recreational facilities. This also includes community services such as playgrounds, sporting facilities, parks and lighting and public services such as home and community care, libraries and emergency management. All of these contribute to the health and wellbeing of individuals and their communities. Indeed, many of the day-to-day functions of Councils can be seen to have a role in advancing public health. Table 3 describes some key activities of Local Government and describes their links to public health objectives.

**Table 3 – Links between local government activities and public health**

<table>
<thead>
<tr>
<th>Local Government activities</th>
<th>Public health link</th>
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<tbody>
<tr>
<td>Waste management (refuse, onsite effluent, stormwater)</td>
<td>Communicable disease prevention.</td>
</tr>
<tr>
<td>Environmental Health</td>
<td>Safe food, safe water, control of vectors and pests. Immunisation.</td>
</tr>
<tr>
<td>Building inspection</td>
<td>Safe and suitable accommodation and swimming pool fencing.</td>
</tr>
<tr>
<td>Planning and development approval</td>
<td>Separation of incompatible land uses including management of contaminated land.</td>
</tr>
<tr>
<td>Infrastructure (footpaths, sporting facilities, reserves, playgrounds, parks, shade etc.)</td>
<td>Improved liveability. Provision of space and facilities for physical activity. Skin cancer prevention.</td>
</tr>
<tr>
<td>Animal management (collection of dogs wandering at large)</td>
<td>Community safety.</td>
</tr>
<tr>
<td>Sport and recreation</td>
<td>Physical activity/fitness.</td>
</tr>
<tr>
<td>Community services</td>
<td>Healthy eating. Social infrastructure. Social inclusion.</td>
</tr>
<tr>
<td>Emergency management</td>
<td>Community wellbeing.</td>
</tr>
</tbody>
</table>

SA Health is working collaboratively with the LGA on the implementation of the SA Public Health Act. The LGA is a membership organisation for all Councils in South Australia and is the voice of Local Government in this State. All 68 Councils are members of the Association, as is Anangu Pitjantjatjara Yankunytjatjara.

Funding has been made available to provide advice and support to Councils to implement the SA Public Health Act and to help Councils undertake public health planning. In addition a comprehensive workforce development program is underway and supported by guidelines prepared to ensure the consistent application of the SA Public Health Act across Local Government and in coordination with relevant State Government Departments.

Resources prepared in consultation with Local Government include:

- Guidelines – Regional Public Health Planning
- Guidelines – Principles to be recognised under the SA Public Health Act
- Guidelines – General duty; Notices and emergency situations; Offences
Workforce development is being coordinated and/or delivered through the LGA. A Public Health Short Course is being delivered on the administration of the SA Public Health Act and the application of the objects, principles and powers contained within the SA Public Health Act. The Course has been attended by more than 80 per cent of South Australia's 146 Environmental Health Officers (authorised officers) in preparation for the commencement of section 44 of the SA Public Health Act (Local authorised officers) and Part 12 Division 2 (Notices and emergency situations) in June 2013.

Appointment of Chief Public Health Officer

On 23 February 2012 the Governor of South Australia appointed Dr Stephen Christley as South Australia's first statutory Chief Public Health Officer.

Dr Christley is also Executive Director of Public Health and Clinical Systems in the Department for Health and Ageing. Dr Christley has extensive public health experience within South Australia and interstate and is responsible for Public Health, Communicable Disease Control, Safety and Quality and Emergency Management for the Department of Health and Ageing.

The Chief Public Health Officer's function is described in section 21 of the SA Public Health Act.

### 21 – Functions of Chief Public Health Officer

(1) The Chief Public Health Officer’s functions are as follows:

- (a) to develop and implement strategies to protect or promote public health;
- (b) to ensure that this Act, and any designated health legislation, are complied with;
- (c) to advise the Minister and the Chief Executive of the Department about proposed legislative or administrative changes related to public health, and about other matters relevant to public health;
- (d) to establish and maintain a network of health practitioners and agencies designed to foster collaboration and coordination to promote public health and the furtherance of the objects of this Act;
- (e) at the request of the Minister or on the Chief Public Health Officer's own initiative, to investigate and report on matters of public health significance;
- (f) after advising the Minister and the Chief Executive of the Department, to make public statements on matters relevant to public health;
- (g) any other functions assigned to the Chief Public Health Officer by this Act or any other Act or by the Minister.

South Australian Public Health Council

The Governor of South Australia also established the South Australian Public Health Council on 23 February 2012. This Council replaces the Public and Environmental Health Council under the previous P&EH Act. Membership of the new South Australian Public Health Council is broader than the previous council and it has a more strategic advisory role to the Chief Public Health Officer, who is the presiding member. The functions of the South Australian Public Health Council are described in section 31 of the SA Public Health Act.
31 – Functions of SAPHC

SAPHC’s functions are as follows:

(a) to assist and advise the Chief Public Health Officer in relation to –
   (i) the protection and promotion of public health; and
   (ii) the development and maintenance of a system of strategic planning for public health at the local, regional and State wide levels; and
   (iii) the development of health plans under this Act; and
   (iv) strategies to ensure that a sufficiently trained and skilled workforce is in place for the purposes of this Act; and
   (v) programs to promote public health research in the State; and
   (vi) the preparation of the biennial report under Division 2; and
   (vii) the setting of standards and qualifications for authorised officers;

(b) any other functions assigned to SAPHC by this or any other Act or by the Minister or the Chief Public Health Officer.

Membership of the South Australian Public Health Council

Members of the inaugural South Australian Public Health Council are listed in Table 4.

Table 4 – Members of the South Australian Public Health Council

<table>
<thead>
<tr>
<th>Membership</th>
<th>Member</th>
<th>Deputy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presiding Member (ex officio)</td>
<td>Dr Stephen Christley</td>
<td>Dr Kevin Buckett</td>
</tr>
<tr>
<td>Chief Public Health Officer</td>
<td>Chief Public Health Officer.</td>
<td>Director Public Health</td>
</tr>
<tr>
<td></td>
<td>Executive Director Public Health and Clinical Systems</td>
<td>SA Health</td>
</tr>
<tr>
<td>Local Government Association Nominee</td>
<td>Mr Declan Moore</td>
<td>Councillor Susan Lonie</td>
</tr>
<tr>
<td></td>
<td>Deputy Chief Executive West Torrens Council</td>
<td>Holdfast Bay Council</td>
</tr>
<tr>
<td>Local Government Association Nominee</td>
<td>Dr Michael Henningsen</td>
<td>Councillor Jill Whittaker</td>
</tr>
<tr>
<td></td>
<td>Councillor City of Adelaide</td>
<td>Campbelltown Council</td>
</tr>
<tr>
<td>Public Health Qualifications</td>
<td>Dr Christopher Reynolds</td>
<td>Adj Assoc Professor Lester Wright</td>
</tr>
<tr>
<td>Public Health Qualifications</td>
<td>Professor Robyn McDermott</td>
<td>Dr Katina D’Onise</td>
</tr>
<tr>
<td>Environmental Protection Agency</td>
<td>Ms Susan Churchman</td>
<td>Mr Peter Dolan</td>
</tr>
<tr>
<td>Presiding Member Nominee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Health Australia nominee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ministerial Nominee with Health Promotion Experience</td>
<td>Ms Terri Lamorree</td>
<td>Ms Christine Morris</td>
</tr>
<tr>
<td></td>
<td>OPAL Manager West Torrens Council</td>
<td>Director Health Promotion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>South Australian Dental Service</td>
</tr>
<tr>
<td>Ministerial Nominee with experience in the Prevention and control of Communicable Diseases</td>
<td>Dr Ann Koehler</td>
<td>Dr Douglas Shaw</td>
</tr>
<tr>
<td></td>
<td>Director</td>
<td>Communicable Disease Control Branch</td>
</tr>
<tr>
<td></td>
<td>Communicable Disease Control Branch SA Health</td>
<td></td>
</tr>
<tr>
<td>Ministerial Nominee with experience in nongovernment community sector activities relevant to Public Health</td>
<td>Dr Amanda Rischbeith</td>
<td>Ms Wendy Keech</td>
</tr>
<tr>
<td></td>
<td>Chief Executive National Heart Foundation – SA Branch</td>
<td>National Heart Foundation – SA Branch</td>
</tr>
<tr>
<td>Environmental Health Australia nominee</td>
<td>Ms Susan Bennett</td>
<td>Mr Rebekah Schubert</td>
</tr>
</tbody>
</table>
Regulations, Policies, Guidance, Information, Workforce Capacity Development and Plans

Regulations, policies, guidance materials, information, workforce capacity development strategies and plans have been developed to support the implementation of the SA Public Health Act (see Table 5). These have been developed jointly and in consultation with the LGA and EHA.

Table 5 – Regulations, policies, guidance materials, information, workforce capacity development strategies and plans developed to support the implementation of the SA Public Health Act

| Regulations | South Australian Public Health (Notifiable and Controlled Notifiable Conditions) Regulations 2012 were remade in September 2012. This provided the opportunity to consolidate the listing of notifiable and controlled notifiable conditions in one regulation, to review and refresh the listing by removing several conditions no longer relevant in the South Australian context and further clarifying others. South Australian Public Health (Cervical and Related Cancer Screening) Regulations were remade and adjusted to bring them into line with the provisions of the SA Public Health Act. The South Australian Public Health (Legionella) Regulations, South Australian Public Health (General Regulations) and South Australian Public Health (Waste Control) Regulations were remade and brought into line with the provisions of the SA Public Health Act. |
| Policies | To date two Public Health Policies are being developed under the provisions of Part 5 of the SA Public Health Act:  
> The Severe Domestic Squalor Public Health Policy.  
> The Remediation of Clandestine Drug Laboratories Public Health Policy.  
Once final consultation has occurred these Public Health Policies will be referred to the Minister for his consideration and possible tabling in Parliament pursuant to section 55 of the SA Public Health Act. |
| Guidance Materials | Guidance materials have been developed in the following areas under the provisions of Section 15 of the SA Public Health Act:  
> Guidance on the application of Principles to be recognised under the SA Public Health Act (Sections 5-13)  
> Guidance on the application of Principles in Section 14 to Parts 10 (Controlled Notifiable Conditions)-11 (Management of Significant Emergencies).  
> Guidance on the application of Part (General Duty) and Part 12 (Notices and Emergency Situations), specifically addressing procedures to be undertaken by authorised officers  
> Guidance on the application of General Regulations and Legionella Regulations  
> Protocols for the functioning of Case Management and Co-ordination Advisory Panels.  
> Resource materials to support the public health planning function as outlined in Section 50-52. |
| Information | The LGA as part of the Joint implementation plan, has developed a range of information papers for Local Councils on specific subjects.  
Briefings have been provided jointly by the LGA and SA Health staff to Local Councils throughout the State on the provisions of the SA Public Health Act.  
The LGA regularly updates Local Councils on activities related to the SA Public Health Act through its Circulars. |
| Workforce Development | The LGA and SA Health have developed a three-day Public Health Short Course for authorised officers under the SA Public Health Act. This short course has been repeated over late 2012 through 2013, the aim being to offer this training to 100 per cent of the workforce. Once this target is achieved it is planned to offer the short course bi-annually for newly authorised officers or those seeking to refresh their understanding of the provisions of the SA Public Health Act.  
Planning is underway in conjunction with the LGA for further workforce development aimed at other staff within Local Government whose roles are relevant to public health. |
| Plans | The State Public Health Plan has been developed pursuant to Section 50.  
The Public Health Emergency Management Plan has been reviewed and aligned to the provisions of Part 11. This Plan is part of a suite of Plans constituting the State Emergency Management Plan prepared under the Emergency Management Act, 2004. |
Across Government Procedures

Section 17 (1) (e) of the SA Public Health Act identifies the Minister for Health and Ageing as the primary source of advice for Government concerning health preservation protection and promotion. It also provides for the Minister to develop or adopt procedures for the provision of this advice and to ensure the Minister is consulted by other branches of Government where there may be issues which have a significant impact on public health (section 17 (2)).

The purpose of these parts of Section 17 is to provide the framework for ensuring that decisions of Government (where relevant) are able to incorporate consideration of the health implications of any policy or measure planned to be undertaken. As such it provides the Government with an opportunity to systematically assess and incorporate issues which may be needed to preserve, protect or promote health as part of the overall development of Government proposals. This section provides the legislative basis for integrating Health in All Policies approaches, as well as other related assessment procedures, into the fabric of standard government development and decision-making processes.

This scheme is based on a similar scheme established in Quebec’s Public Health Act 2001. South Australia and the Province of Quebec have had a formal Public Health Partnership Agreement since 2008, and the development of the SA Public Health Act has benefitted from this ongoing partnership.

On behalf of the Minister, SA Health is liaising with the Department of Premier and Cabinet to ensure that these procedures are developed in line with other governance consultation, communication, appraisal and decision making processes to ensure an efficient and streamlined service across Government agencies can be provided.
Implementing the State Public Health Plan

Section 23 (1) (b) of the SA Public Health Act requires a report on the implementation of the State Public Health Plan. The State Public Health Plan is part of a system of public health planning described in Section 50-52 of the SA Public Health Act.

The State Public Health Plan is required to address a range of factors as specified in section 50 (2)-(4) of the SA Public Health Act.

Part 4 – Public health plans
Division 1 – State Public Health Plan
50 – State Public Health Plan

(1) The Minister must prepare and maintain a plan to be called the State Public Health Plan.

(2) The State Public Health Plan is to set out principles and policies for achieving the objects of this Act and implementing the principles established under this Act.

(3) In connection with the operation of subsection (2), the State Public Health Plan should –

(a) –

(i) comprehensively assess the state of public health in South Australia; and

(ii) identify existing and potential public health risks and develop strategies for addressing and eliminating or reducing those risks; and

(b) identify opportunities and outline strategies for promoting public health in this State; and

(c) include information about issues identified in regional public health plans established under this Part or any other plan or policy that the Minister considers to be appropriate.

(4) The State Public Health Plan may also take into account any plan, policy or strategy determined to be appropriate by the Minister.

State Public Health Plan

The first State Public Health Plan was developed through 2012 and released in draft form for public consultation in January 2013. The development process included initial extensive consultation with Local Governments, other State Government agencies, the university sector and public health researchers, particularly in the first instance to identify a relevant range of data sets and indicators to support public health planning. Additionally, workshops were held with the South Australian Public Health Council to assist in determining the shape and scope of the Plan.
Concurrent with the development of the State Public Health Plan, SA Health commissioned the LGA to develop draft guidance materials for public health planning by Local Councils to be adopted by the Minister pursuant to Section 51(6) of the SA Public Health Act. The LGA recruited 22 Councils to assist in the development and piloting of these guidance materials (see Table 6).

Table 6 – Councils Participating in the Development of Public Health Planning Guidance Materials

<table>
<thead>
<tr>
<th>Councils Participating in the Development of Public Health Planning Guidance Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Project Pilot Councils</strong></td>
</tr>
<tr>
<td>Adelaide City Council</td>
</tr>
<tr>
<td>Coorong District Council</td>
</tr>
<tr>
<td>District Council of the Yorke Peninsula</td>
</tr>
<tr>
<td>Eastern Health Authority (representing its constituent Councils: the City of Burnside, Campbelltown City Council, the City of Norwood Payneham &amp; St Peters, the City of Prospect and the Corporation of the Town of Walkerville)</td>
</tr>
<tr>
<td>City of Marion</td>
</tr>
<tr>
<td>Mid Murray Council</td>
</tr>
<tr>
<td>City of Playford</td>
</tr>
<tr>
<td>Wattle Range Council</td>
</tr>
<tr>
<td>City of West Torrens</td>
</tr>
<tr>
<td>Whyalla City Council</td>
</tr>
<tr>
<td><strong>Project Reference and Case-Study Councils</strong></td>
</tr>
<tr>
<td>Adelaide Hills Council</td>
</tr>
<tr>
<td>Alexandrina Council</td>
</tr>
<tr>
<td>City of Charles Sturt</td>
</tr>
<tr>
<td>District Council of Mt Barker</td>
</tr>
<tr>
<td>City of Holdfast Bay</td>
</tr>
<tr>
<td>City of Port Adelaide Enfield</td>
</tr>
<tr>
<td>City of Salisbury</td>
</tr>
<tr>
<td>City of Tea Tree Gully</td>
</tr>
<tr>
<td>City of Unley</td>
</tr>
</tbody>
</table>

The significance of the State Public Health Plan is that it recognises that the health sector acting alone cannot fully or sufficiently address the public health issues of the community. It provides an intersectoral framework for planning congruent with a contemporary understanding of how best to protect and improve public health and prevent the development of significant public health risks. That is, it provides a clear framework for public health action and co-operation between spheres of government as well as across State Government agencies, the non-government sector and the community. Highlights and priorities of the State Public Health Plan are presented in Table 7.
Table 7 – Highlights and priorities of the State Public Health Plan

<table>
<thead>
<tr>
<th>Highlights of the State Public Health Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vision</td>
</tr>
<tr>
<td>Priorities</td>
</tr>
<tr>
<td>Four Action Areas</td>
</tr>
</tbody>
</table>

The public consultation period on the State Public Health Plan concluded in March 2013. Submissions were received from Local Councils, non-government organisations, professional associations, community groups, individuals active in public health or Local Government and other State and Commonwealth Government agencies. There was broad support for the approach, vision, priorities and general directions contained in the Plan. The final version of the Plan, in response to a general pattern of comments, contained more detail concerning State Government actions and undertakings.

The State Public Health Plan sets the framework for subsequent public health planning by Local Governments. Local Councils undertake public health planning consistent with and having regard to the State Public Health Plan.

The provisions for public health planning by Local Councils commenced on 1 January 2013. The SA Public Health Act provides a flexible system for public health planning which provides an opportunity to integrate these provisions into their requirements for undertaking strategic management plans under the provisions of Section 122 of the Local Government Act 1999. This option not only provides an efficient means for Councils to undertake public health planning by eliminating the need for duplication of processes, it also ensures that public health issues are effectively identified and integrated across all relevant functions of Councils rather than being regarded as a separate and siloed function.

Additionally the SA Public Health Act provides for a scheme whereby Councils can apply to the Minister to undertake public health planning jointly, where they identify sufficient common interests (Section 51 (1)). Preliminary indications are that there are a significant number of Councils who are intending to take up this option. By committing to joint planning it is expected that Councils will be able to enhance their capacity to deliver on the goals of their joint plans. By agreeing to plan as a group however, does not diminish an individual Council’s capacity to identify and respond to the particular needs of its community. The SA Public Health Act provides for a Council, even after determining to plan as part of a group of Councils, to be able to identify a public health issue or issues which are specific to its area and to plan separately for them whilst still participating in an overall joint plan with other Councils (Section 51 (4)).
Taken together the provisions outlined in Section 51 provide a flexible public health planning system which promotes consistency with the State Public Health Plan yet ensures that Councils can plan in an efficient and flexible way which enhances their capacity without losing their ability to respond to local needs and conditions.

Section 52 of the SA Public Health Act requires Councils to report every two years on the progress of their plan. This time period halves the reporting requirement under the repealed P&EH Act. With the commencement of this section on 1 January 2013 the first report is therefore due at the beginning of 2015. The State Public Health Plan recommends that Councils take the first year (2013) to develop and submit their plans, thereby allowing a year to undertake and provide the first report of their plans at the end of 2014.

Because this is the first planning cycle, the State Public Health Plan further recommends that Councils first iteration of their plans be based on three factors:

1. Consistency and regard to the SA Public Health Act and the State Public Health Plan
2. An assessment of public health issues of their communities (including any further community consultation deemed necessary)
3. An audit of a Council’s existing suite of plans using these above elements to identify relevant public health issues, objectives and strategies.

Developing a public health plan in this way provides the most effective opportunity for a Council, or group of Councils, to integrate public health planning requirements into their strategic management planning processes under Section 122 of the Local Government Act 1999. Similarly, by adopting the time frames for planning and reporting recommended in the State Public Health Plan, a Council, or group of Councils, are in a position to align the public health planning cycle under the SA Public Health Act with their requirements to commence reviewing their other strategic management plans within two years of the next Council elections (due in October 2014).

**Public Health Partner Authorities**

Unique in the Australian context, the SA Public Health Act provides for the declaration of Public Health Partner Authorities. This is based on a similar legislative scheme operating in the United Kingdom. Public Health Partner Authorities are so designated by agreement with the organisation concerned and the Minister (Section 51 (23)). A Public Health Partner Authority can be a State Government agency or a non-government organisation; it can also be a commercial enterprise. By agreeing to be formally designated as a Public Health Partner Authority, an organisation is agreeing to participate in public health planning and, by further agreement, to take responsibility for an aspect of a public health plan (e.g., a strategy, priority or goal) that is relevant to the organisation’s function or role (Section 51(18)). A Public Health Partner Authority also has regard to the State Public Health Plan or Regional Public Health Plan (in so far as it is relevant and reasonable) when it is performing a relevant function (Section 51(22)).

SA Health has advanced discussions with a range of government and non-government agencies during the implementation of the SA Public Health Act, with a view to securing formal agreements for the designation of Public Health Partner Authorities. The finalisation of the State Public Health Plan and the confirmation of its vision and priorities has provided a concrete reference point for organisations to relate to, thus facilitating the completion of this step.

The focus of these discussions, in the first instance, has been those organisations who are directly participating in achieving the State Government’s strategic priority of “Safe Communities, Healthy Neighbourhoods”. This priority, one of seven strategic priorities announced by the Governor in February 2012, identified public health planning (both the State Public Health Plan and planning by Local Councils) as a driver for achieving outcomes. A further focus has been discussions with those organisations that identify clear links with their mandate and the goals of public health planning. An early adopter organisation is the Department of Environment Water and Natural Resources (DEWNR). DEWNR was the first organisation to agree to become a Public Health Partner Authority because it recognised the clear link between a healthy environment and a healthy community.
The State of our Public Health
The State of our Public Health

Like the rest of Australia, most South Australians enjoy a high standard of health compared with most other similar countries. We are living longer and healthier lives than at most times in the past. But this good picture is not the complete story. There are concerning trends, particularly as they relate to the increasing emergence and incidence of non-communicable conditions such as cardiovascular illness, diabetes, certain forms of cancer and arthritis. Many of these conditions are associated with modern life, particularly the challenges of overweight, obesity, lack of physical activity and an overabundance of energy-dense nutrition-poor foods.

In this section you will find a snapshot of some relevant statistics and key features of the health of South Australians.

A note on reporting

This section presents data on selected topics at multiple levels:

- National and state-level comparisons
- State-wide data
- Information pertaining to SA4 regions (only where available and appropriate)

The Australian Statistical Geography Standard (ASGS) is the Australian Bureau of Statistics’ (ABS) new geographical framework, effective from July 2011. The SA4 regions are the largest sub-state statistical regions of the ASGS. Where regional comparisons are provided within this section, the data is presented according to the seven South Australian SA4 regions (see Figure 3).

The SA4 regions are:

- Adelaide – Central and Hills
- Adelaide – North
- Adelaide – South
- Adelaide – West
- Barossa – Yorke – Mid North
- South Australia – Outback
- South Australia – South East
Figure 3 – Map of the seven South Australian SA4 regions
Summary highlights from the data

> The 10 disease categories contributing to almost 90 per cent of the total disease burden in South Australia remained the same between 1999-2001 and 2006-2008, and at least eight of those are associated with known risk factors, biomedical and/or social risk factors and determinants.

> Cancer and cardiovascular disease continue to contribute the greatest burden of disease in South Australia, 19 per cent and 17.5 per cent respectively.

> Infectious and parasitic diseases that once dominated the disease burden in Australia in the 19th century now only contributes 1.6 per cent of the total South Australian disease burden in 2006-2008.

> There is a marked difference across socioeconomic status. Those living in more disadvantaged areas report poorer outcomes for almost all risk factors with the exception of alcohol consumption.

> Diabetes prevalence is projected to increase two to threefold over the next 25 years because of expected increases in the prevalence of obesity, along with other demographic changes.

> Rates of children's asthma are declining. Since 2003 the proportion of children aged 2-17 years who reported an asthma diagnosis has fallen from 20.7 per cent to 12 per cent in 2011.

> Smoking rates in South Australia are declining. Since 2002 the proportion of South Australians aged 15 years and over who are current smokers has declined from 23.6 per cent to 17.6 per cent in 2011.

> Children's overweight and obesity rates have remained stable since 2004.

> Adults overweight and obesity rates have increased from 55.6 per cent in 2003 to 59.1 per cent in 2012.

> There are over 50 community gardens in South Australia.

> The proportion of South Australians meeting physical activity recommendations decreases with age. Over half of people aged 18 to 29 years (55.1 per cent) reported meeting physical activity recommendations, while 28.6 per cent of people aged 65 years and over met physical activity recommendations.

> South Australians aged 20-29 years have the greatest proportion of people at risk of alcohol related harm from a single drinking occasion (67.2 per cent) compares to those aged 60 years and over who had the lowest proportion (23.9 per cent).

> The Australian Early Development Index (AEDI) examines early childhood development In South Australia, between 2009 and 2012 the proportion of children (in their first year of schooling) identified as developmentally vulnerable on at least one domain has increased, compared to the Australian rate where there has been a decrease in children developmentally vulnerable in one or more domain.

> In 2012, a greater proportion of South Australian boys are considered developmentally vulnerable on one or more domains (28 per cent) compared to girls (15.7 per cent).

> There are increasing rates of sexually transmissible infections in South Australia, with numbers of notifications of genital chlamydia and gonorrhoea more than doubling since 2002.

> In 2012, there were 5,039 cases of genital chlamydia notified making this the most commonly notified sexually transmitted disease in South Australia. This figure is 14 per cent higher than the number of notifications reported in 2010 and is 36 per cent higher than the number of notifications reported in 2008.

> Over the past 10 years South Australia has achieved high vaccine coverage rates in children, with the percentage of children in the state fully immunised by the time they are two years of age being equal to or greater than the Australian average.
South Australia’s population
1. South Australia’s population

South Australia’s population has continued to grow since 1996 and various population projections have been published suggesting that both Australia’s population and the median population age will continue to increase for some time.

The population of South Australia has a median age of 39.5 years and a faster ageing population than any other mainland state. By 2031 more than 20 per cent of our state’s population (approximately 440 000 people) will be aged over 65 years old. Public health policies and interventions that aim to reduce morbidity and disability into old age are therefore increasingly important for ensuring quality of life for an increasing proportion of the Australian and South Australian population.

1.1 Our population

South Australia’s population grew by 12.24 per cent (1 422 522 to 1 596 569) from 1996 to 2011 and in the same period, the population age profile changed significantly (Figure 4). The proportion of the population aged 50 over years increased, while the proportion of the population aged less than 50 years reduced (Figure 5).

Figure 4 – South Australian population by gender 1996, 2001, 2006 and 2011

![South Australian population by gender 1996, 2001, 2006 and 2011](Image)


Figure 5 – South Australian population by age and gender 1996 and 2011

![South Australian population by age and gender 1996 and 2011](Image)

In 2011, 76.7 per cent of South Australians lived in the Adelaide Central and Hills, North, South and West SA4 regions; 6.7 per cent in the Barossa – Yorke – Mid North region, 11.1 per cent in the South East region; and 5.3 per cent in the Outback SA4 regions (Figure 6).

Figure 6 – South Australia’s population by SA4 region


1.2 Distribution of population by age and gender

Figures 7 to 13 describe the age and gender distribution for the SA4 regions of South Australia.

Adelaide – North had the greatest proportion of residents under the age of 30 years with 21 per cent of males and 20.1 per cent of females in this age group, compared to Barossa – Yorke – Mid North which had 17.4 per cent of males and 16.2 per cent of females and South Australia – South East which had 17.6 per cent of males and 16.6 per cent of females aged under 30 years.

Conversely, Barossa – Yorke – Mid North and South Australia – South East had the greatest proportion of residents aged between 60 and 80 years with 11.0 per cent of males and 10.8 per cent of females in Barossa – Yorke – Mid North and 10.8 per cent of males and 10.9 per cent of females in South Australia – South East being in the 60-80 year age group. This compares to Adelaide – North where 7.2 per cent of males and 7.9 per cent of females were in this age group.

Figure 7 – Adelaide – Central and Hills population by age and gender

Figure 8 – Adelaide – North population by age and gender

1.3 Aboriginal and Torres Strait Islander population

The SA Public Health Act recognises that action designed to improve the public health of communities needs to have regard to “special or vulnerable groups” within communities (Section 4 91) (f)). The SA Public Health Act specifically identifies Aboriginal people as a population requiring this particular focus when developing policies, strategies, programs and campaigns designed to improve the public health of communities. This seeks to acknowledge the systemic and entrenched disadvantage experienced by South Australia’s Aboriginal population.

Aboriginal Australians experience disproportionate levels of educational, employment and social disadvantage. Many Aboriginal Australians also experience poorer health than other Australians, often dying at much younger ages. A healthy beginning in a nurturing environment, with protection from physical and mental abuse, and opportunities for personal development – such as education and employment – are all important for a long and happy life.\(^5\)

According to the Australian Bureau of statistics (ABS), the preliminary estimated resident Aboriginal population\(^6\) of South Australia, as at 30 June 2011, was approximately 37 000 people, accounting for nearly 6 per cent of Australia’s Aboriginal population. Aboriginal people represent 2.3 per cent of the South Australia population, which is slightly lower than the proportion of Aboriginal people in the total Australian population (3.0 per cent).

There is a marked difference in the age profile between Aboriginal and Non-Aboriginal South Australians with the Aboriginal population being much younger than the Non-Aboriginal population (see Figure 14). According to the 2011 Census, approximately 50 per cent of Aboriginal South Australians were aged between 0 and 19 years. In the same age group for Non-Aboriginal South Australians, only 24 per cent of individuals were represented. At the other end of the age spectrum, 6.5 per cent of Aboriginal South Australians were aged 65 years and over, compared to 16.2 per cent of Non-Aboriginal South Australians.

Figure 14 – Aboriginal and Non-Aboriginal South Australians, age distribution

Figure 15 describes the proportion of South Australian residents by SA4 who reported being of Aboriginal and/or Torres Strait Islander decent. The area with the greatest proportion of Aboriginal residents was South Australia – Outback (10.1 per cent), compared to Adelaide-Central and Hills which had the lowest reported Aboriginal population (0.5 per cent).

**Figure 15 – Proportion of Aboriginal and Torres Strait Islanders by SA4 region in South Australia**

Note: 3.9 per cent of South Australian’s surveyed did not report whether they identified as Aboriginal and/or Torres Strait Islander. Source: ABS Census, 2011.
1.4 Cultural and linguistic diversity

Language spoken at home – Top 10

In 2011 the predominant language spoken at home in all regions of South Australia was English. The lowest proportion of those speaking English at home were located in Western Adelaide (68.81 per cent), while the highest proportion of those speaking English at home were located in the Barossa – Yorke – Mid North (94.56 per cent). Table 8 outlines the top 10 languages spoken at home, by SA4 region, in South Australia. This data demonstrates that although English is the predominant language spoken across the state, there remains a great diversity of languages spoken at home in South Australia.

Table 8 – Top 10 languages spoken at home in SA4 regions.

<table>
<thead>
<tr>
<th>Adelaide – Central and Hills</th>
<th>Adelaide – North</th>
<th>Adelaide – South</th>
<th>Adelaide – West</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 76.23%</td>
<td>English 79.37%</td>
<td>English 86.75%</td>
<td>English 68.81%</td>
</tr>
<tr>
<td>Italian 4.60%</td>
<td>Not stated 4.05%</td>
<td>Not stated 3.31%</td>
<td>Greek 4.64%</td>
</tr>
<tr>
<td>Chinese 4.13%</td>
<td>Mon-Khmer 2.55%</td>
<td>Chinese 1.38%</td>
<td>Italian 4.38%</td>
</tr>
<tr>
<td>Not stated 4.01%</td>
<td>Italian 1.73%</td>
<td>Greek 1.11%</td>
<td>Not stated 4.16%</td>
</tr>
<tr>
<td>Greek 2.13%</td>
<td>Indo-Aryan 1.57%</td>
<td>Indo-Aryan 0.84%</td>
<td>Mon-Khmer 3.47%</td>
</tr>
<tr>
<td>Indo-Aryan 1.81%</td>
<td>Chinese 1.38%</td>
<td>Italian 0.73%</td>
<td>Chinese 2.61%</td>
</tr>
<tr>
<td>German and Related Languages 0.64%</td>
<td>Iranian 0.96%</td>
<td>Southeast Asian Austronesian Languages 0.59%</td>
<td>South Slavic 2.11%</td>
</tr>
<tr>
<td>Korean 0.58%</td>
<td>Greek 0.96%</td>
<td>German and Related Languages 0.56%</td>
<td>Indo-Aryan 2.05%</td>
</tr>
<tr>
<td>Southeast Asian Austronesian Languages 0.57%</td>
<td>South Slavic 0.85%</td>
<td>Middle Eastern Semitic Languages 0.53%</td>
<td>Southeast Asian Austronesian Languages 0.89%</td>
</tr>
<tr>
<td>Middle Eastern Semitic Languages 0.56%</td>
<td>African Languages 0.82%</td>
<td>West Slavic 0.52%</td>
<td>African Languages 0.84%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Barossa – Yorke – Mid North</th>
<th>South Australia – Outback</th>
<th>South Australia – South East</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 94.56%</td>
<td>English 86.41%</td>
<td>English 90.92%</td>
</tr>
<tr>
<td>Not stated 3.10%</td>
<td>Not stated 6.47%</td>
<td>Not stated 4.19%</td>
</tr>
<tr>
<td>Italian 0.40%</td>
<td>Western Desert Language 2.64%</td>
<td>Greek 0.69%</td>
</tr>
<tr>
<td>German and Related Languages 0.36%</td>
<td>Southeast Asian Austronesian Languages 0.46%</td>
<td>Italian 0.59%</td>
</tr>
<tr>
<td>Greek 0.20%</td>
<td>Dutch and Related Languages 0.45%</td>
<td>Indo-Aryan 0.47%</td>
</tr>
<tr>
<td>Southeast Asian Austronesian Languages 0.19%</td>
<td>South Slavic 0.41%</td>
<td>Chinese 0.34%</td>
</tr>
<tr>
<td>Dutch and Related Languages 0.18%</td>
<td>Greek 0.38%</td>
<td>German and Related Languages 0.34%</td>
</tr>
<tr>
<td>Indo-Aryan 0.09%</td>
<td>Indo-Aryan 0.35%</td>
<td>Southeast Asian Austronesian Languages 0.31%</td>
</tr>
<tr>
<td>Chinese 0.09%</td>
<td>Italian 0.35%</td>
<td>Dutch and Related Languages 0.28%</td>
</tr>
<tr>
<td>Supplementary codes 0.08%</td>
<td>German and Related Languages 0.26%</td>
<td>Iranian 0.21%</td>
</tr>
</tbody>
</table>

Country of birth – top 10

From Table 9 it is evident that in 2011 the majority of people in each SA4 region were born in Australia. The region with the greatest proportion of Australian born residents was the Barossa – Yorke – Mid North region (86.12 per cent) and the region with the lowest proportion of Australian Born residents was Adelaide – West (67.04 per cent). The second most common country of birth was consistently England with Adelaide South having the greatest proportion of residents born in England (8.94 per cent) and Adelaide-West had the lowest proportion of residents born in England (3.99 per cent).

Table 9 – Top 10 countries of birth in SA4 regions.

<table>
<thead>
<tr>
<th>Country</th>
<th>Adelaide – Central and Hills</th>
<th>Adelaide – North</th>
<th>Adelaide – South</th>
<th>Adelaide – West</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>69.51%</td>
<td>69.80%</td>
<td>73.28%</td>
<td>67.04%</td>
</tr>
<tr>
<td>England</td>
<td>5.34%</td>
<td>8.08%</td>
<td>8.94%</td>
<td>4.88%</td>
</tr>
<tr>
<td>Not stated</td>
<td>4.35%</td>
<td>4.63%</td>
<td>3.89%</td>
<td>England 3.99%</td>
</tr>
<tr>
<td>Italy</td>
<td>2.82%</td>
<td>India 1.39%</td>
<td>Scotland 1.18%</td>
<td>Italy 2.72%</td>
</tr>
<tr>
<td>China*</td>
<td>2.26%</td>
<td>Vietnam 1.27%</td>
<td>New Zealand 0.99%</td>
<td>Vietnam 2.35%</td>
</tr>
<tr>
<td>India</td>
<td>1.64%</td>
<td>Italy 1.06%</td>
<td>Germany 0.81%</td>
<td>India 2.30%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1.26%</td>
<td>Scotland 1.06%</td>
<td>China* 0.79%</td>
<td>Greece 1.87%</td>
</tr>
<tr>
<td>New Zealand</td>
<td>0.83%</td>
<td>China* 0.82%</td>
<td>India 0.78%</td>
<td>China* 1.47%</td>
</tr>
<tr>
<td>Greece</td>
<td>0.80%</td>
<td>Philippines 0.81%</td>
<td>South Africa 0.57%</td>
<td>Philippines 0.78%</td>
</tr>
<tr>
<td>Germany</td>
<td>0.78%</td>
<td>Germany 0.74%</td>
<td>Netherlands 0.56%</td>
<td>New Zealand 0.74%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country</th>
<th>Barossa – Yorke – Mid North</th>
<th>South Australia – Outback</th>
<th>South Australia – South East</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>86.12%</td>
<td>Australia 82.39%</td>
<td>Australia 83.03%</td>
</tr>
<tr>
<td>England</td>
<td>5.06%</td>
<td>Not stated 6.48%</td>
<td>Not stated 4.83%</td>
</tr>
<tr>
<td>Not stated</td>
<td>4.06%</td>
<td>England 3.78%</td>
<td>England 4.78%</td>
</tr>
<tr>
<td>New Zealand</td>
<td>0.57%</td>
<td>Scotland 1.01%</td>
<td>New Zealand 0.92%</td>
</tr>
<tr>
<td>Germany</td>
<td>0.54%</td>
<td>New Zealand 0.75%</td>
<td>Germany 0.58%</td>
</tr>
<tr>
<td>Scotland</td>
<td>0.54%</td>
<td>Germany 0.55%</td>
<td>Netherlands 0.58%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.44%</td>
<td>Philippines 0.51%</td>
<td>Scotland 0.55%</td>
</tr>
<tr>
<td>Philippines</td>
<td>0.25%</td>
<td>South Africa 0.50%</td>
<td>Italy 0.41%</td>
</tr>
<tr>
<td>Italy</td>
<td>0.24%</td>
<td>Netherlands 0.37%</td>
<td>India 0.41%</td>
</tr>
<tr>
<td>United States of America</td>
<td>0.15%</td>
<td>India 0.31%</td>
<td>Philippines 0.37%</td>
</tr>
</tbody>
</table>

*Excludes Taiwan and Special Administrative Regions of the People’s Republic of China (SARs). SARs are territories that fall within the sovereignty of the People’s Republic of China, which do not, however, form part of Mainland China.
The social determinants of health and wellbeing
2. The social determinants of health and wellbeing

The social determinants of health are the circumstances in which people are born, grow up, live, work and age, and the systems put in place to deal with illness. These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics. These determinants are largely outside the direct control of the health sector.

Different groups in society face different life circumstances. Disadvantaged groups, who generally have the worst health, are also more likely to experience lower incomes and intergenerational poverty, poor employment conditions, lower housing security, reduced access to or uptake of early learning and other education opportunities, racism, discrimination, isolation and poor neighbourhood conditions. These conditions and circumstances are often termed the social determinants of health or the ‘causes of the causes’.

A snapshot of social determinant indicators in South Australia

The SA Public Health Act establishes principles that guide and the administration of the SA Public Health Act.

Of particular relevance and importance to giving mandate to act on the social determinants of health are the principles of equity and partnership.

The partnership principle recognises that the determinants of the public's health are spread throughout the community and that there are often multiple layers of causes involving several areas of responsibility, policy mandates or authority.

The equity principle concerns the issues of health disparities and guides those who are working under the SA Public Health Act to develop strategies to minimise or alleviate them.

It is envisioned that the social determinants of health will comprise an ongoing and critical component of public health indicators for planning, monitoring and reporting moving forward. This report has focussed on a selection of health determinant statistics to portray a snapshot of social determinant status for South Australia and its citizens, including:

- Socio-economic status
- Employment
- Household Income
- Children’s Development
- Planning and urban design
2.1 Socio-economic distribution

There is a well-established link between socio-economic disadvantage and poor health outcomes. Those who are most socio-economically disadvantaged are twice as likely to have a long-term health condition as those who are the least disadvantaged. Put another way, the most poor are twice as likely to suffer chronic illness and will die on average three years earlier than the most affluent. Assessment of socio-economic measures is therefore an extremely valuable source of information for public health planning.

A note on SEIFA

Socio-Economic Indexes for Areas (SEIFA) is a product developed by the ABS that ranks areas in Australia according to relative socio-economic advantage and disadvantage which comprises four indices. This report has used the Index of Relative Socio-economic Advantage and Disadvantage (IRSAD). This index is a general socio-economic index that was created using measures of relative disadvantage as well as measures of relative advantage from the 2011 Census. There are 21 measures included, such as: low or high income, internet connection, occupation and education. This index does not include Indigenous status.

A low score indicates relatively greater disadvantage and a lack of advantage in general. For example, an area could have a low score if there are (among other things): many households with low incomes, or many people in unskilled occupations; and few households with high incomes, or few people in skilled occupations.

A high score indicates a relative lack of disadvantage and greater advantage in general. For example, an area may have a high score if there are (among other things): many households with high incomes, or many people in skilled occupations; and few households with low incomes, or few people in unskilled occupations.

South Australia – Index of Relative Socio-economic Advantage and Disadvantage

In 2011, 57.2 per cent of South Australians were living in an area with a SEIFA of less than 1 000, this compares to 54.3 per cent of people in Australia who lived in an area with a SEIFA of less than 1 000 (Figure 16).

Figure 16 – Index of Relative Socio-economic Advantage and Disadvantage for Australia and South Australia

Local-Level comparisons

In South Australia, the areas that had the greatest proportion of people living in an area with a SIEFA of less than 1 000 were Barossa-Yorke-Mid North (63.2 per cent), Adelaide-West (61.9 per cent), Outback South Australia (61.8 per cent) and Adelaide-North (61.4 per cent), these proportions are markedly higher than those in Adelaide-South and Adelaide-Central and Hills who had 37.0 per cent and 17.8 per cent of people living in an area with SEIFA less than 1 000 respectively (Figures 17 to 23).


Figure 17 – Index of Relative Socio-economic Advantage and Disadvantage for Adelaide – Central and Hills

Figure 18 – Index of Relative Socio-economic Advantage and Disadvantage for Adelaide – North


Figure 19 – Index of Relative Socio-economic Advantage and Disadvantage Adelaide – South

Figure 20 – Index of Relative Socio-economic Advantage and Disadvantage for Adelaide – West


Figure 21 – Index of Relative Socio-economic Advantage and Disadvantage for Barossa – Yorke – Mid North

Figure 22 – Index of Relative Socio-economic Advantage and Disadvantage for South Australia – Outback


Figure 23 – Index of Relative Socio-economic Advantage and Disadvantage for South Australia – South East

2.2 Employment status

Employment and working conditions have powerful effects on health and wellbeing. When these are good, they can provide financial security, social status, personal development, social relations and self-esteem, and protection from physical and mental illness. It is well known that health influences the participation of individuals in the labour force. Rates of unemployment and not being in the labour force are very high for both males and females in low socio-economic groups and especially when they have problems with their health.

Table 10 describes the employment status of South Australian residents at the time of the 2011 Census. The area with the greatest proportion of residents in full-time and part-time employment was Adelaide – Central and Hills (29.34 per cent and 17.28 per cent respectively). South Australia – South East had the lowest proportion of residents in full-time employment (25.27 per cent) and South Australia – Outback had the lowest proportion of residents in part-time employment (13.12 per cent). South Australia – Outback also had the greatest proportion of residents who worked away from home (3.37 per cent).

Adelaide – North had the greatest proportion of residents who were unemployed and looking for full-time work (2.04 per cent) compared to Adelaide-Central and Hills (1.28 per cent).

Table 10 – Employment status in South Australia by SA4 region

<table>
<thead>
<tr>
<th>Area</th>
<th>Employed, worked full-time</th>
<th>Employed, worked part-time</th>
<th>Employed, away from work</th>
<th>Unemployed, looking for full-time work</th>
<th>Unemployed, looking for part-time work</th>
<th>Not in the labour force</th>
<th>Not stated</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide – Central and Hills</td>
<td>29.34%</td>
<td>17.28%</td>
<td>2.83%</td>
<td>1.28%</td>
<td>1.27%</td>
<td>28.17%</td>
<td>3.53%</td>
<td>16.31%</td>
</tr>
<tr>
<td>Adelaide – North</td>
<td>27.82%</td>
<td>14.10%</td>
<td>2.83%</td>
<td>2.04%</td>
<td>1.20%</td>
<td>28.63%</td>
<td>3.63%</td>
<td>19.74%</td>
</tr>
<tr>
<td>Adelaide – South</td>
<td>28.56%</td>
<td>16.85%</td>
<td>2.97%</td>
<td>1.59%</td>
<td>1.15%</td>
<td>28.17%</td>
<td>3.08%</td>
<td>17.62%</td>
</tr>
<tr>
<td>Adelaide – West</td>
<td>28.21%</td>
<td>15.20%</td>
<td>2.80%</td>
<td>1.77%</td>
<td>1.14%</td>
<td>30.79%</td>
<td>4.27%</td>
<td>15.82%</td>
</tr>
<tr>
<td>Barossa - Yorke - Mid North</td>
<td>25.59%</td>
<td>14.86%</td>
<td>2.72%</td>
<td>1.43%</td>
<td>0.79%</td>
<td>32.76%</td>
<td>3.13%</td>
<td>18.73%</td>
</tr>
<tr>
<td>South Australia – Outback</td>
<td>28.47%</td>
<td>13.12%</td>
<td>3.37%</td>
<td>1.85%</td>
<td>0.79%</td>
<td>26.56%</td>
<td>5.41%</td>
<td>20.42%</td>
</tr>
<tr>
<td>South Australia – South East</td>
<td>25.27%</td>
<td>15.28%</td>
<td>3.25%</td>
<td>1.74%</td>
<td>0.93%</td>
<td>31.17%</td>
<td>3.85%</td>
<td>18.50%</td>
</tr>
</tbody>
</table>


2.3 Household annual income

There is an intrinsic link between health and wellbeing and affordable living. Having insufficient money to lead a healthy life is a highly significant cause of poor health outcomes. Where the cost of living is considered more affordable, and people from all backgrounds have access to the resources to meet the costs of accessing these fundamental conditions, health and wellbeing will prosper. Those who are vulnerable, who have challenges affording the fundamental conditions, are likely to not only have worse housing, educational and employment outcomes, but because of the interconnected nature of these conditions, will have poorer health outcomes, exacerbating the other vulnerabilities.

Table 11 describes the household income of South Australian residents at the time of the 2011 Census. The area with the greatest proportion of residents with a household income of $1 to $51,999 per annum was Adelaide-West (39.43 per cent) compared to Adelaide – Central and Hills with the lowest proportion of residents in this income bracket (30.67 per cent). On the other end of the income spectrum, Adelaide – Central and Hills had the greatest proportion of residents with a household income of greater than $130,000 per annum (18.23 per cent) compared to South Australia – South East with the lowest proportion of residents in this income bracket (4.68 per cent).
## Table 11 – Household income in South Australia by SA4 region

| Region                      | Negative Income | Nil Income | $1-$10 399 | $10 400-$15 599 | $15 600-$20 799 | $20 800-$31 199 | $31 200-$41 599 | $41 600-$64 999 | $65 000-$77 999 | $78 000-$103 999 | Partial income stated | All incomes not stated | Not applicable |
|-----------------------------|-----------------|------------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|---------------------|-------------------------|----------------------|
| Adelaide – Central and Hills| 0.27%           | 1.39%      | 1.55%       | 2.43%           | 5.48%           | 7.57%           | 6.92%           | 6.73%           | 6.67%            | 6.15%               | 9.58%                   |                       |
| Adelaide – North            | 0.18%           | 0.69%      | 1.42%       | 2.94%           | 6.80%           | 10.09%          | 9.40%           | 8.44%           | 8.51%            | 7.17%               | 10.84%                  |                       |
| Adelaide – South            | 0.19%           | 0.65%      | 1.28%       | 2.60%           | 6.42%           | 9.28%           | 8.47%           | 7.91%           | 7.63%            | 6.86%               | 10.41%                  |                       |
| Adelaide – West             | 0.24%           | 0.93%      | 1.57%       | 3.45%           | 8.22%           | 9.81%           | 8.76%           | 7.62%           | 7.57%            | 6.37%               | 9.31%                   |                       |
| Barossa – Yorke – Mid North | 0.31%           | 0.55%      | 1.49%       | 2.81%           | 7.49%           | 10.65%          | 8.49%           | 7.27%           | 6.12%            | 5.57%               | 7.23%                   |                       |
| South Australia – Outback   | 0.24%           | 0.69%      | 1.53%       | 3.24%           | 6.48%           | 8.75%           | 7.36%           | 6.36%           | 5.94%            | 5.66%               | 8.31%                   |                       |
| South Australia – South East| 0.34%           | 0.62%      | 1.58%       | 2.82%           | 6.91%           | 10.47%          | 9.02%           | 7.77%           | 6.57%            | 5.74%               | 7.16%                   |                       |
|                             |                 |            |             |                 |                 |                 |                 |                 |                  |                     |                         |                       |
|                             | $78 000-$103 999|           |             |                 |                 |                 |                 |                 |                  |                     |                         |                       |
|                             | $104 000-$129 999|          |             |                 |                 |                 |                 |                 |                  |                     |                         |                       |
|                             | $130 000-$155 999|         |             |                 |                 |                 |                 |                 |                  |                     |                         |                       |
|                             | $156 000-$181 999|        |             |                 |                 |                 |                 |                 |                  |                     |                         |                       |
|                             | $182 000-$207 999|        |             |                 |                 |                 |                 |                 |                  |                     |                         |                       |
|                             | $208 000-$259 999|        |             |                 |                 |                 |                 |                 |                  |                     |                         |                       |
|                             | $260 000 or more |        |             |                 |                 |                 |                 |                 |                  |                     |                         |                       |

2.4 Child development

Early childhood is the most important developmental phase of life and arguably the most important determinant of population health outcomes. Healthy early childhood development, which includes physical, social, emotional, and cognitive development, strongly influences wellbeing, obesity, mental health, heart disease, literacy, criminality and economic participation throughout life. The nurturing qualities of the environments where children grow up live and learn matter. Not all families have the same opportunities, capacity or resources to provide nurturing environments. Children with high levels of social and emotional wellbeing are more likely to successfully negotiate physical, intellectual and social challenges during childhood and adolescence.

As a population measure the Australian Early Development Index (AEDI) examines early childhood development across the whole community, providing a snapshot of how children in the local area have developed by the time they start school. Together with other socio-demographic and community information the AEDI results are a powerful tool for influencing planning and policy around early childhood development. The AEDI results can help governments and communities understand what is working well and what needs to be improved or developed to better support children and their families.

A note on the AEDI

The AEDI is a full population census of children’s health and development in their first year of formal full-time schooling. It provides a comprehensive map of early developmental outcomes across Australia. Teachers completed the AEDI Checklists for children in their first year of formal full-time school. Checklists were completed by teachers based on their knowledge and observation of the children in their class, along with demographic information from school enrolment forms. The AEDI measures five areas of early childhood development from information collected through a teacher-completed checklist:

- Physical Health and Wellbeing
- Social Competence
- Emotional Maturity
- Language and Cognitive Skills (school-based)
- Communication Skills and General Knowledge

In Australia, according to AEDI data there was a decrease in the proportion of children who were considered developmentally vulnerable between 2009 and 2012 across all AEDI domains with the exception of Physical Health and Wellbeing which remained stable at 9.3 per cent.

In South Australia, there was an increase in the proportion of children considered developmentally vulnerable between 2009 and 2012 for Physical Health and Wellbeing (10.0 per cent to 10.2 per cent), Social Competence (10.1 per cent to 11.3 per cent), Language and Cognitive skills (6.1 per cent to 6.8 per cent) and Communication and General Knowledge (8.0 per cent to 8.9 per cent). There was an improvement in the proportion of those considered developmentally vulnerable for the AEDI domain of Emotional Maturity (10.3 per cent to 9.3 per cent; see Table 12).
Table 12 – Proportion of Australian and South Australian Children identified as developmentally vulnerable by AEDI domain, 2009 and 2012

<table>
<thead>
<tr>
<th>AEDI domain</th>
<th>Australia</th>
<th></th>
<th>South Australia</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2009</td>
<td>2012</td>
<td>2009</td>
<td>2012</td>
</tr>
<tr>
<td>Physical Health &amp; Well-being</td>
<td>9.3</td>
<td>9.3</td>
<td>10</td>
<td>10.2</td>
</tr>
<tr>
<td>Social Competence</td>
<td>9.5</td>
<td>9.3</td>
<td>10.1</td>
<td>11.3</td>
</tr>
<tr>
<td>Emotional Maturity</td>
<td>8.9</td>
<td>7.6</td>
<td>10.3</td>
<td>9.3</td>
</tr>
<tr>
<td>Language &amp; Cognitive Skills</td>
<td>8.9</td>
<td>6.8</td>
<td>6.1</td>
<td>6.8</td>
</tr>
<tr>
<td>Communication &amp; General Knowledge</td>
<td>9.2</td>
<td>9</td>
<td>8</td>
<td>8.9</td>
</tr>
</tbody>
</table>

Source: Australian Early Development Index, 2012.

Table 13 demonstrates the proportion of boys and girls who were identified as vulnerable for each AEDI domain. Consistently, for all domains, there was a greater proportion of boys identified as developmentally vulnerable relative to girls. There have been significant improvements in most domains for boys in all other Australian States combined (except South Australia) from 2009 to 2012, with a significant decrease in the proportion of boys identified as developmentally vulnerable for Social Competence, Emotional Maturity, Language & Cognitive Skills and Communication & General Knowledge. In South Australia, this pattern of improvement is not seen, with increases in the proportion of South Australian boys identified as developmentally vulnerable for Social Competence, Emotional Maturity, Language & Cognitive Skills and Communication & General Knowledge.

For girls, in all other states combined (except South Australia) between 2009 and 2012 there was a significant decrease in the proportion of girls who were identified as developmentally vulnerable for Social Competence, Emotional Maturity and Language & Cognitive Skills. In South Australia, there was a significant increase in the proportion of girls identified as developmentally vulnerable for Social Competence but no other significant increases or decreases.

Table 13 – Proportion of children developmentally vulnerable by AEDI domain, Australian State and gender, 2009 and 2012.

<table>
<thead>
<tr>
<th>AEDI domain</th>
<th>All other states*</th>
<th></th>
<th>South Australia</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys (%)</td>
<td>Girls (%)</td>
<td>Boys (%)</td>
<td>Girls (%)</td>
</tr>
<tr>
<td>Physical Health &amp; Well Being</td>
<td>11.7</td>
<td>11.8</td>
<td>6.8</td>
<td>6.6</td>
</tr>
<tr>
<td>Social Competence</td>
<td>12.9</td>
<td>12.5</td>
<td>5.9</td>
<td>5.7</td>
</tr>
<tr>
<td>Emotional Maturity</td>
<td>13.3</td>
<td>11.7</td>
<td>4.2</td>
<td>3.3</td>
</tr>
<tr>
<td>Language &amp; Cognitive Skills</td>
<td>11.5</td>
<td>8.5</td>
<td>6.6</td>
<td>5</td>
</tr>
<tr>
<td>Communication &amp; General Knowledge</td>
<td>11.8</td>
<td>11.2</td>
<td>6.7</td>
<td>6.6</td>
</tr>
</tbody>
</table>

Source: Australian Early Development Index, 2012.

* All other states refers to all Australian states and territories excluding South Australia
Figure 24 demonstrates the change between 2009 and 2012 in the proportion of Australian and South Australian children who are considered developmentally vulnerable on one or more AEDI domains.

In Australia, there was a significant decrease in the proportion of children developmentally vulnerable on one or more domains (23.6 per cent to 22.0 per cent) between 2009 and 2012.

In South Australia there was a significant increase in the proportion of children developmentally vulnerable on one or more domains (22.8 per cent to 23.7 per cent) between 2009 and 2012.

Figure 24 – The change between 2009 and 2012 of the proportion of children who are considered developmentally vulnerable on one or more domains

Table 14 demonstrates the proportion of children who are considered developmentally vulnerable on one or more AEDI domains by gender. For both South Australia and all other states combined there was a greater proportion of boys who were identified as developmentally vulnerable on one or more AEDI domains. Between 2009 and 2012 there was a significant improvement in the both boys and girls in all other states, however in South Australia there was a significant increase in the proportion of both boys and girls who were identified as developmentally vulnerable on one or more AEDI domains.

Table 14 – Proportion of children who are considered developmentally vulnerable on one or more AEDI domains by sex, 2009 and 2012

<table>
<thead>
<tr>
<th></th>
<th>2009 Boys (%)</th>
<th>2009 Girls (%)</th>
<th>2012 Boys (%)</th>
<th>2012 Girls (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All other States*</td>
<td>30.2</td>
<td>16.8</td>
<td>28</td>
<td>15.7</td>
</tr>
<tr>
<td>South Australia</td>
<td>29.6</td>
<td>15.9</td>
<td>30.7</td>
<td>17</td>
</tr>
</tbody>
</table>

* Note: all other states refers to all Australian states and territories excluding South Australia

Source: Australian Early Development Index, 2012.
2.5 Planning and urban design

The link between where we live, work and play is inextricably linked to our health and wellbeing. Planning, designing, protecting and sustaining our environment has immediate impact on long term benefits for population health. For example well-planned neighbourhoods can increase the number of people who walk or cycle to shops, schools, parks, services, facilities and public transport. This supports healthier lifestyles for local residents, a more socially vibrant local neighbourhood and brings with it associated economic and environmental benefits.¹⁵

Designing spaces for health

Obesogenic environments have been defined as “the sum of influences that the surroundings, opportunities, or conditions of life have on promoting obesity in individuals or populations”. Many interventions to date have placed responsibility for overweight or obesity with the individual, as an alternative, an ecological systems perspective recognises the additional influence of the environment. Changing the environment to make the healthy choice, the easy choice, is a key part of obesity prevention. Better monitoring of physical activity and food environments will assist in developing healthier environments.

There are a range of features that should be considered when creating healthy urban environments. These include the provision of integrated and accessible walking and cycling infrastructure that connects people to local destinations, public transport and quality public open spaces, functional and attractive street networks, supporting infrastructure such as furniture, signage and landscaping that promote safety, comfort and provide opportunity for social interaction, access to healthy food and well-designed residential areas with higher density and mixed uses.

Adopting an integrated life course approach to planning and delivering healthy communities, ensures all members of the community are considered and a range of design issues such as access, crime prevention, shade provision, water sensitive urban design and road user safety are adequately addressed.

In South Australia, recognition of urban form as a key determinant of health, wellbeing and disease has seen innovative partnerships linking planning, transport and health agencies in policy-making, system change, infrastructure investment and development. There is currently strong engagement with a range of partners, including state and local government and non-government agencies, to plan, design and build healthier communities.

Experience and evidence shows that broad multi-sectoral collaboration is crucial for success. The 30 Year Plan for Greater Adelaide along with a number of state and local government policy documents recognise the importance of investing in this area and reflect the supporting evidence. Turning these documents into action is the next step. There are two large collaborative projects that have been delivered by the South Australian Active Living Coalition - Healthy by Design SA and the Streets for People Compendium for South Australian Practice - that have achieved broad engagement. These resources, along with other guidance documents, are ready for endorsement and adoption by appropriate agencies and practitioners.

This section will present four case studies as examples of indicators for healthy spaces in urban design:

1. Playgrounds
2. Environments supportive of drinking water
3. Proximity to fast food restaurants
4. Community gardens in South Australia

A note on the following three case studies

The Obesity Prevention And Lifestyle (OPAL) program is a federal, state and local government childhood obesity prevention program. The aim of OPAL is ‘to improve the eating and activity patterns of children through families and communities in OPAL regions, and thereby increase the proportion of 0-18 year olds in the healthy weight range.’
1. Playgrounds

As backyards get smaller\(^{17}\) there is an increasing need and reliance on the provision of public open space for family recreation purposes. Children and adolescents with access to recreational facilities and programs, usually near their home, are more active than those without such access\(^{18}\). Evidence is promising that the provision of recreation facilities including green space and playgrounds for activity, imagination play and experimentation, increases children’s physical activity\(^{19}\).

Playgrounds provide opportunities for families to be more physically active. Perceived park aesthetics, condition and safety maybe associated with the park use and physical activity within the park\(^{20}\). More information is needed to inform us about what makes a healthy park and playground environment. The monitoring of recreation environments including parks and playgrounds will provide information back to policymakers to inform decisions about how to improve parks and playgrounds and the health and wellbeing of the South Australian community.

An ideal playground might include the following:

> An environment that provides for structured and unstructured play – a range of safe play equipment that children can engage in full range of movement but also green space (trees and lawn) where children can run around, play with balls or investigate.

> An environment that engages both the mind and the body. Allows children to think, experiment, problem-solve and provides educational opportunities but also requires the full range of movement and energy expenditure.

> A play space that is connected – within close proximity of families with children of the appropriate age to use the playground but also has bike paths and walking trails for ease of use and access.

> A playground that allows for social engagement between children and within families – tables and chairs, barbecue facilities.

> Playgrounds that meet the needs of the local families (e.g., a playground with equipment for 1-5 year olds has families with children 1-5 years in close proximity) such that families are encouraged to use the facilities thereby increasing neighbourhood safety.

In the Playford South OPAL Community playgrounds are being monitored over time. The proportion of green space was estimated and the quality and types of playground equipment was assessed. Of the 25 playgrounds surveyed in Playford South, Fremont Park (see Figure 25), ticks many of the boxes as a quality playground. It provides:

> Drinking water facilities

> Disability access and play equipment

> Mixed use of structured and unstructured play environments – two playgrounds within a much larger park

> Mixed age targets for equipment

> Facilities that support social engagement – barbecue and seating facilities for families

> Connection with bike paths and walking trails

*Figure 25 – Fremont Park, the Playford South Obesity Prevention and Lifestyle Community playground*
2. Environments Supportive of Drinking Water

Studies in obesity prevention have identified reduction in consumption of sugar sweetened beverages as a lever for change. At the individual level this requires water being the first choice to quench thirst and at the environmental level this requires the provision of and easy access to fresh and clean drinking water. Increases in consumption of fluoridated tap water have added benefits for improved dental health.

Interventions to increase water consumption instead of soft drinks may include:

> Provision of drinking water fountains with water bottle refill options.
> Reducing the price point of water in comparison with soft drinks.
> Supermarkets could include water as an option on end of aisle displays when sugar sweetened beverages are on display.
> Provision of water for sale as an alternative to soft drinks.
> Provision of filtered tap water if concerns about taste are an issue.
> Sporting clubs and associations could sell team branded water bottles as a fundraiser.
> School policies allowing children to have a drinking water bottle on their desk or in close proximity for ready access throughout the day.

At the environment level people are more likely to use drinking water fountains if they are clean, have good drainage and not located near toilets or where recycled or bore water is in use.

Water fountains are being installed and monitored across OPAL communities (see Figure 26 for an example from Fremont Park, City of Playford). Locations include playgrounds, skate parks and main streets of some shopping precincts. The increase in access to attractive drinking water fountains will assist in making water the first choice for community members.

**Figure 26 – OPAL drinking water fountain installed in Fremont Park, City of Playford**
3. Proximity of fast food outlets to schools and residence (Playford and Charles Sturt Focus)

The food environment is another element in the complex picture of possible contributors to obesogenic environments. The availability, proximity and balance of healthy and unhealthy food outlets and options provide possible areas for public health intervention.

Fast food outlets are defined as selling foods with ready availability, use, consumption and sold through food outlets for quick availability or take-away. The OPAL fast food outlet category includes both ‘Takeaway Foods’ outlets which have limited sit-down eating and provided substantial trade in takeaway food and beverages and petrol station food marts. The majority of fast food products have been found to be higher in total fat, saturated fat and sugar content and do not meet the criteria of a healthy option.

Evidence is contested about proximity of fast food outlets from schools and residence and the relationship with overweight and obesity. Some researchers have found that students with fast food outlets near their schools consumed fewer servings of fruit and vegetables, drank more sugar sweetened beverages and were more likely to be overweight or obese; others have not found this relationship. Nevertheless fast-food restaurants have been found to be concentrated within a short walking distance from schools, exposing children to poor-quality food environments within close proximity of their school. It has been suggested that setting planning rules around the location of snack and fast food outlets is one example of actions to improve the consumer food environment. In addition, the WHO has recommended that settings where children gather should be free from all forms of marketing of foods high in saturated fats, trans-fatty acids, free sugars, or salt.

The frequency of different types of food retail outlets across a metropolitan, a rural and a remote OPAL community can be seen in Figures 27, 28 and 29.

Figure 27 – Frequency of Food Outlets in Playford South, a metropolitan OPAL community
The proximity of fast food outlets to schools and residence was also examined within two metropolitan OPAL communities – Charles Sturt and Playford South (see Figures 30 and 30a). Table 15 illustrates that within these two communities fast food outlets were in closer proximity to schools and residences than alternative healthier outlets (including supermarkets, green grocer, bakers, butcher, fresh poultry or fish, health foods/nuts and yoghurt shops).
Table 15 – Average distance (metres) of school and residence to fast food outlet and healthier outlets

<table>
<thead>
<tr>
<th>Distance (m)</th>
<th>Residence</th>
<th>Fast Food</th>
<th>Healthier Outlet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charles Sturt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>836</td>
<td>692</td>
<td>824</td>
</tr>
<tr>
<td>Residence</td>
<td>528</td>
<td></td>
<td>623</td>
</tr>
<tr>
<td>Playford South</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>932</td>
<td>427</td>
<td>456</td>
</tr>
<tr>
<td>Residence</td>
<td>758</td>
<td></td>
<td>917</td>
</tr>
</tbody>
</table>

Figure 30 – Proximity of fast food outlets to residents and schools in Playford South OPAL Community
4. Community gardens

There are over 50 community gardens in South Australia. Community gardens are at the heart of healthy and sustainable neighbourhoods. By improving people's diets and physical activity levels, and by combating social isolation, community gardens improve a neighbourhood's all-round physical and mental health. Studies have shown that people involved in community gardens are over three times as likely to eat the recommended amount of fresh fruit and vegetables. [www.environment.sa.gov.au/botanicgardens](http://www.environment.sa.gov.au/botanicgardens)

As part of the South Australian Eat Well Be Active Strategy 2011-2016, DEWNR has committed to healthy weight policy action which included, amongst other key strategies:
> Continuing to work with partner organisations to support local communities to adopt healthy eating habits through the Kitchen Garden program, and

> Pursuing opportunities to expand the Kitchen Garden program into schools and homes across the state, particularly focussing on disadvantaged communities.

The Kitchen Garden Initiative is a strategic priority for the Botanic Gardens of Adelaide. The program promotes the development of kitchen gardens in homes, schools and communities in Adelaide and aims to develop a social, cultural and environmental understanding of where food comes from, with a horticultural, cultural and global perspective.

Kitchen gardening literally brings the Australian Curriculum to life. Students are active and engaged with the environment and each other in a seasonal feast of experiences. From discovering healthy eating through growing and cooking, to understanding sustainable systems, a kitchen garden’s harvest is abundant. Kitchen gardens welcome parental and community involvement and can be a hub of activity and celebration.

The Kitchen Garden program has reached around 10,000 people through support for community gardens, direct contact with schools and through events in the Botanic Gardens. A major effort has been put into delivering ‘Train the trainer’ programs to support organisations to deliver their own Magic Harvest program, which encourages people to grow and cook healthy food at home. The Initiative has been delivered in partnership with Natural Resources Adelaide and Mount Lofty Ranges, Department for Education and Child Development (DECD), Santos, SA Health, and the Nursery and Garden Industry Association.

The program has expanded its work beyond community gardens by establishing a website with resources for home, community and school gardeners. The website currently reaches 1,500 people per month, with substantial growth each month. A monthly newsletter is distributed to around 500 people providing advice and support. Subscriptions are increasing by 5 per cent each month.

The Botanic Gardens also established and promoted a wheat crop in the city and a farmers trail for schools, which were highly utilised by schools looking at the origins of food. The Botanic Gardens continues to explore opportunities to work with DECD to support edible gardening programs in schools beyond current capacity.

2.6 Public health action on the social determinants of health

2.6.1 Health in All Policies

The South Australian Health in All Policies (HiAP) approach, established in 2007, aims to address the determinants of health through cross-sectoral action on complex policy areas. Health and wellbeing have an enormous influence on our overall quality of life. Considering health impacts across policy domains such as agriculture, education, the environment, fiscal policies, housing and transport will improve the overall population health. Major gains in population health reduce health service costs and have positive impacts in other areas and other goals of public policy. Incorporating a focus on population health into the policy development process of various sectors and agencies has allowed the South Australian government to address the social determinants of health in a more systematic manner.

The HiAP unit has undertaken a significant program of work with partners across government, which includes projects focusing on numerous South Australian Strategic Plan targets and Strategic Cabinet Priorities. These partnership projects are or have addressed both a variety of social determinants, and complex social policy issues such as early engagement in literacy, health and wellbeing issues of overseas students, mobility, road safety and drivers licensing for Aboriginal people, cycling and walking policy and infrastructure, community planning and sustainability, and water security, to name a few.
The health lens analysis (HLA) process provides a mechanism for examining the connections and interactions between policy and health outcomes in a systematic and collaborative manner, which results in evidence-based recommendations to guide mutually beneficial policy outcomes.

Significant outcomes resulting from some of the completed health lens analysis projects include:

> The development and publication of the Transit-oriented developments...through a health lens – A guide for Healthy Urban Developments (see Figure 31, available from http://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/health+reform/health+in+all+policies) highlights how positive health outcomes can be incorporated into the planning and design of urban developments. Key learnings from the guide have been incorporated into the South Australian Planning Policy Library. A public interface document “Healthy connected communities: creating healthy urban villages for the future” was also developed to sit alongside the Guidance (Partner agencies were Department of Planning and Local Government, Department for Transport, Energy and Infrastructure; SA Health; Land Management Corporation).

Figure 31 – Transit-orientated developments...through a health lens

> The Castle Plaza Transit-oriented developments (TODs) project with Marion City Council which aimed to increase the potential for an improved urban environment to support health and wellbeing at and around the Castle Plaza site, tested the applicability of the ‘Healthy TODs Principles’ (from the TODs Guide) as a guide in a local government development assessment process. The project resulted in a greater focus on the engagement of community in the Castle Plaza Development Plan Amendment, and an extensive Social Audit being undertaken to support the redevelopment of the area. It also required the development of a new methodology, the Wellbeing and Sustainability Impact Assessment Tool, which has been used in the rebuild of Christchurch, New Zealand.

> The Healthy Weight health lens project saw eight South Australian Government Departments sign-off on policy commitments for their agency which supported healthy eating and physical activity. These were incorporated into the South Australian Eat Well Be Active Strategy 2011-2016.

> A paper developed jointly with the Cycling and Walking Section, Department of Planning, Transport and Infrastructure (DPTI) under the Active Transport project around the need for an economic assessment for cycling and walking infrastructure in South Australia influenced and informed the national agenda. Infrastructure Australia subsequently called for a nationally accepted methodology for evaluating the economic benefits of cycling and walking. This work will be beneficial for South Australia in bidding for Infrastructure Australia’s funding and in making strong economic cases for cycling and walking project submissions to South Australian Treasury.
Other HiAP projects have also:

> Influenced the development of a Indicators of Healthy Migrant Settlement for the then Department of Trade and Economic Development; SA Health; Multicultural SA (Attorney-General's Department), and

> The development of a Digital Inclusion Framework with Department of Further Education, Employment, Science and Technology.

> In addition, evaluation has demonstrated that staff from across government who have engaged in HiAP projects have a greater understanding of the role their agency's policies play in contributing to the health and wellbeing of the South Australian population, and how policies can be shaped to achieve mutually beneficial outcomes for their agencies and health.

> In 2011 the Government of South Australia and the WHO convened a highly successful Summer School on HiAP. As a result, WHO requested the Health in All Policies Unit and Professor Ilona Kickbusch to develop a training manual based on the curriculum used. The Summer School Training Manual is jointly produced by the SA Government and WHO and will be ready for release in 2013.

> An assessment of linkages between each of the Seven Cabinet Strategic Priority areas and the health and wellbeing of the population, particularly impacting on chronic disease, was undertaken. This assessment identified potential health impacts, and highlighted opportunities for the priority area to improve population health as well as achieve the priorities public policy objectives.

**Future directions**

**Health lens analysis projects**

SA Health will work closely with the Department of the Premier and Cabinet, and continue to be guided by relevant Cabinet Task Force and Senior Officers Groups and the Senior Management Council regarding partnerships for agreed SASP targets and Cabinet's seven strategic priorities work programs.

> ‘Learning or Earning’ is a health lens project that supports vulnerable young people to successfully transition from education to further training and employment, with the Department of Further Education, Science and Technology as the partner agency.

> Areas of longer term work are emerging for the HiAP Unit as a result of the Health Lens Analysis conducted across the Seven Strategic Priorities project. Two cross-government initiatives are being proposed as key activities to achieve milestones in the following strategic priority areas: Every Chance for Every Child and Safe Communities, Healthy Neighbourhoods.

**Capacity-building strategy for HiAP**

A two-year HiAP capacity-building strategy will be developed, with the aim of building on the work that facilitates healthy public policy development and supports policy practitioners both within and outside SA Health in undertaking an HiAP approach. The strategy will also include actions for translating the thinking and philosophies underpinning the HiAP approach in creating intersectoral partnerships to support the objectives of South Australia's Health Care Plan and implementation of the South Australian Public Health Plan.

The strategy will build on existing information resources and tools such as the HiAP Summer School training manual, the HiAP website (http://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/health+reform/health+in+all+policies) and Listserv Communication Strategy. It will aim to expand the HiAP community of practice and partnerships.
2.6.2 Aboriginal Children’s Services under Closing the Gap

Three programs are included in this area and when considered together these programs aim to cover the eight key domains of a Health and Wellbeing Framework developed by SA Health in 2008. These are:

> Strengthen child and family-friendly communities
> Maximise children’s healthy eating
> Promote active play
> Increase safety of the environment
> Promote children’s self-care
> Protect child and maternal health and well-being
> Support and strengthen parent capacity
> Increase equitable access to health services

The majority of funding for these programs is from the Council of Australian Government’s National Partnership Agreement on Closing the Gap in Indigenous Health Outcomes. The aim is to improve the health and wellbeing of young Aboriginal children through partnerships with the early education sector and through new ways of supporting Aboriginal families and children.

Children’s Centres Aboriginal Health Promotion Officers program

SA Health employs seven health promotion officers across metropolitan and country areas through Local Health Networks. Their work includes engaging Aboriginal children and families in early education settings and to promote/ provide culturally appropriate health promotion policies, programs and practice in Children’s Centres.

Over 2011-12, health promotion officers have expanded their services and now also work in other early childhood settings to engage Aboriginal families that would otherwise not access a designated Children’s Centre. For example, established and supported playgroups have been provided to the Davenport and Gerard communities through local partnerships with Children Centre staff. This has meant that children who would never have accessed mainstream preschool have been able to benefit from quality early childhood education services. A comprehensive range of health promotion programs and activities, focusing primarily on physical activity, healthy eating, oral and ear health and self-care, have been initiated and facilitated by the health promotion officers. As an example of the scope of this program, the number of Aboriginal families engaging in health promotion activities and programs in the Children’s Centres and other early childhood settings during the last quarter of 2012 was approximately 460.

Strengthening Families program

SA Health also fund the Strengthening Families Program in the Murraylands and in Salisbury. These programs aim to work in a culturally appropriate way with high-risk families in order to reduce the number of children notified for abuse or neglect. The two sites employ a new service model which focuses on engagement and support for Aboriginal families by predominantly Aboriginal workers. The level of community engagement has been very significant in both sites and may also explain some of the success of this model.
The Under Fives Ear Health program (also incorporating Aboriginal Ear Health Promotion)

In the 12 months since the introduction of the program there has been an extremely low re-notification rate (6.6%) for the Strengthening Families Team based at Salisbury. Similarly there have only been five re-notifications in Murraylands over the same time period, despite having a higher intake of Tier 1 and Tier 2 clients. As a comparison, the Keeping Them Safe report, 2004, suggested that 12-month re-notifications for Aboriginal children living in South Australia were as high as one in four.

Aboriginal Children’s services

The work described above will continue into 2013-14 pending ongoing funding under the Council of Australian Government’s National Partnership Agreement on Closing the Gap in Indigenous Health Outcomes. The work focusing on ear health has the potential to be expanded pending results of the pilot program.
Disease and illness
3. Disease and illness

Poor health imposes a huge cost on South Australians; it reduces the quality and length of life for those affected and adds pressures to the lives of carers and families. Chronic diseases are among the most prevalent, costly and preventable of all health problems and remain the major cause of death and disability among South Australian adults.

Many chronic conditions can be prevented or at least improved, but this cannot be achieved by the health system alone. Changes are required in our social, physical and economic environments, and to the conditions, that create ill-health, to ensure healthy environments for South Australians.

3.1 The Burden of Disease

A note about the South Australian Burden of Disease Study

The South Australian Burden of Disease Study gathers the best available evidence (which may be uncertain or incomplete) on the distribution and severity of a comprehensive list of illnesses and injuries in South Australia. Estimates of illness and death due to each condition (such as stroke, motor vehicle accident) are available. The Study also provides estimates of the contribution of major risk factors (such as smoking) to the overall burden. Data is available through the South Australian Burden of Disease Study for two time periods: 1999-2001 and 2006-2008. It should be noted that data from the 2006-2008 period is considered provisional.

Describing the burden due to each condition or risk factor using the same measures enables decision makers, planners and the public to compare illnesses, risk factors and population groups to see where the greatest burden lies and where there is the greatest need for action.

The Disability Adjusted Life Year (DALY) – Is an indicator of life expectancy combining mortality and morbidity into one summary measure of population health to account for the number of years lived in less than optimum health. It is a health gap measure developed for calculating the global burden of disease.

South Australians’ total life expectancy at birth continued to increase in the decade to 2008 (by 2.0 years or 2.6 per cent among males and 1.5 years or 1.8 per cent among females). After allowing for the amount of life lost to illness and injury, healthy life expectancy also increased albeit by lesser amounts (1.4 years or 2.1 per cent among males and 1.2 years or 1.5 per cent among females).32
South Australian burden of disease estimates (see Table 16) show that the average amount of health loss occurring in the State reduced overall by almost 2 per cent in the period between 1999-2001 to 2006-2008. Premature mortality reduced markedly from 74.5 years per 1,000 persons in 1999-2001 to 67.7 in 2006-2008. On the other hand, the morbid illness associated with disease and injury conditions increased by around 5 per cent in the same period. Within this rate of healthy life years, new instances of non-communicable diseases such as cancer and cardiovascular conditions increased by more than 10 per cent.

### Table 16 – Premature mortality and morbidity in South Australia

<table>
<thead>
<tr>
<th>Three yearly average crude rates per 1 000 persons</th>
<th>1999-2001</th>
<th>2006-2008</th>
<th>Absolute change</th>
<th>Relative change</th>
</tr>
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<tbody>
<tr>
<td><strong>Premature mortality</strong></td>
<td>74.5</td>
<td>67.7</td>
<td>-6.8</td>
<td>-9.1%</td>
</tr>
<tr>
<td><strong>Morbidity</strong></td>
<td>78.8</td>
<td>82.8</td>
<td>4.0</td>
<td>5.1%</td>
</tr>
<tr>
<td><strong>Total health loss</strong></td>
<td>153.2</td>
<td>150.5</td>
<td>-2.8</td>
<td>-1.8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Morbidity</strong></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicable &amp; Maternal</td>
<td>2.6</td>
<td>2.4</td>
<td>-0.2</td>
<td>-9.0%</td>
</tr>
<tr>
<td>Non-Communicable</td>
<td>73.9</td>
<td>78.0</td>
<td>4.1</td>
<td>5.6%</td>
</tr>
<tr>
<td>Injuries</td>
<td>2.3</td>
<td>2.5</td>
<td>0.2</td>
<td>7.1%</td>
</tr>
<tr>
<td>Total</td>
<td>78.8</td>
<td>82.8</td>
<td>4.0</td>
<td>5.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Morbidity due to Non-Communicable conditions</strong></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Malignant neoplasms (cancer)</td>
<td>5.4</td>
<td>6.0</td>
<td>0.7</td>
<td>12.1%</td>
</tr>
<tr>
<td>Other neoplasms (non-cancerous)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.0</td>
<td>-2.5%</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>6.7</td>
<td>7.3</td>
<td>0.6</td>
<td>9.3%</td>
</tr>
<tr>
<td>Endocrine and metabolic disorders</td>
<td>1.0</td>
<td>1.2</td>
<td>0.1</td>
<td>13.4%</td>
</tr>
<tr>
<td>Mental disorders</td>
<td>17.1</td>
<td>16.9</td>
<td>-0.3</td>
<td>-1.5%</td>
</tr>
<tr>
<td>Nervous system and sense organ disorders</td>
<td>16.0</td>
<td>17.6</td>
<td>1.6</td>
<td>9.9%</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>6.6</td>
<td>7.3</td>
<td>0.8</td>
<td>11.4%</td>
</tr>
<tr>
<td>Chronic respiratory disease</td>
<td>7.6</td>
<td>7.8</td>
<td>0.2</td>
<td>2.8%</td>
</tr>
<tr>
<td>Diseases of the digestive system</td>
<td>2.2</td>
<td>2.3</td>
<td>0.1</td>
<td>2.9%</td>
</tr>
<tr>
<td>Genitourinary diseases</td>
<td>2.3</td>
<td>2.1</td>
<td>-0.2</td>
<td>-8.6%</td>
</tr>
<tr>
<td>Skin diseases</td>
<td>0.9</td>
<td>0.9</td>
<td>0.0</td>
<td>1.4%</td>
</tr>
<tr>
<td>Musculoskeletal diseases</td>
<td>5.2</td>
<td>5.6</td>
<td>0.4</td>
<td>7.1%</td>
</tr>
<tr>
<td>Congenital anomalies</td>
<td>1.0</td>
<td>1.1</td>
<td>0.1</td>
<td>11.6%</td>
</tr>
<tr>
<td>Oral conditions</td>
<td>1.2</td>
<td>1.3</td>
<td>0.0</td>
<td>3.8%</td>
</tr>
<tr>
<td>Ill-defined conditions</td>
<td>0.4</td>
<td>0.4</td>
<td>0.0</td>
<td>-1.2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>73.9</strong></td>
<td><strong>78.0</strong></td>
<td><strong>4.1</strong></td>
<td><strong>5.6%</strong></td>
</tr>
</tbody>
</table>

*Source: South Australian Burden of Disease Study.*
The 10 disease categories contributing to almost 90 per cent of the total disease burden in South Australia remained the same between 1999-2001 and 2006-2008. (see Table 17).

Infectious and parasitic diseases that once dominated the disease burden in Australia in the 19th century now only contribute 1.6 per cent of the total South Australian disease burden in 2006-2008 (see Table 17), and this was comprised of: 77 per cent resulting from the combination of HIV/AIDS (17 per cent), hepatitis B&C (28.6 per cent), septicemia (11.1 per cent), diarrhoeal diseases (6.3 per cent), chlamydia (4.8 per cent), meningitis (4.5 per cent) and other sexually transmitted diseases (2.3 per cent).

The overall estimated impact of each disease category (morbidity and mortality) is estimated in yearly average estimated DALYs over three year periods, as shown in Table 17.

### Table 17 – Top 10 Disability adjusted Life Year disease categories in South Australia

<table>
<thead>
<tr>
<th>Category</th>
<th>1999-2001</th>
<th>2006-2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular disease</td>
<td>Rank</td>
<td>DALY</td>
</tr>
<tr>
<td>Malignant neoplasms (cancer)</td>
<td>1</td>
<td>45 193.7</td>
</tr>
<tr>
<td>Nervous system and sense organ disorders</td>
<td>2</td>
<td>42 834.0</td>
</tr>
<tr>
<td>Mental disorders</td>
<td>3</td>
<td>28 172.9</td>
</tr>
<tr>
<td>Chronic respiratory disease</td>
<td>4</td>
<td>27 146.4</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>5</td>
<td>12 583.1</td>
</tr>
<tr>
<td>Unintentional injuries</td>
<td>6</td>
<td>9 880.0</td>
</tr>
<tr>
<td>Musculoskeletal diseases</td>
<td>7</td>
<td>8 528.9</td>
</tr>
<tr>
<td>Diseases of the digestive system</td>
<td>8</td>
<td>7 182.5</td>
</tr>
<tr>
<td>Genitourinary diseases</td>
<td>9</td>
<td>6 027.6</td>
</tr>
<tr>
<td>Total Top 10</td>
<td></td>
<td>89.1</td>
</tr>
<tr>
<td>Infectious and parasitic diseases</td>
<td>10</td>
<td>2 148.6</td>
</tr>
<tr>
<td>Total DALY</td>
<td></td>
<td>230 087.1</td>
</tr>
</tbody>
</table>

Source: South Australian Burden of Disease Study.

### Burden of disease at a regional level

#### Adelaide – Central and Hills

In the Adelaide – Central and Hills SA4 region, estimates show that the average amount of health loss reduced overall by 16 per cent in the period between 1999-2001 to 2006-2008 (see Table 18). Premature mortality reduced by 19 per cent from 76.8 years per 1 000 persons in 1999-2001 to 62.50 in 2006-2008. In the same period, the morbidity illness associated with disease and injury conditions increased by 3 per cent.

### Table 18 – Premature mortality and morbidity in Adelaide – Central and Hills

<table>
<thead>
<tr>
<th>Category</th>
<th>1999-2001</th>
<th>2006-2009</th>
<th>Absolute change</th>
<th>Relative change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premature mortality</td>
<td>76.8</td>
<td>62.5</td>
<td>-14.3</td>
<td>-19%</td>
</tr>
<tr>
<td>Morbidity</td>
<td>72.0</td>
<td>74.1</td>
<td>2.1</td>
<td>3%</td>
</tr>
<tr>
<td>Total health loss</td>
<td>148.8</td>
<td>136.6</td>
<td>-12.2</td>
<td>-16%</td>
</tr>
</tbody>
</table>

Source: South Australian Burden of Disease Study.
In Table 19, the top 10 categories contributing to the disease burden for the Adelaide – Central and Hills Region remained the same between 1999-2001 and 2006-2009 and they are consistent with the overall South Australian disease burden. There is variation in the ranking order with cancer presenting the highest DALY in 2006-2009, replacing cardiovascular disease, the highest DALY in 1999-2001, which is also consistent with the overall South Australian data.

Table 19 – Top 10 Disability adjusted Life Year disease categories in Adelaide – Central and Hills

<table>
<thead>
<tr>
<th>Three Year Average Estimates</th>
<th>1999-2001</th>
<th>2006-2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>DALY</td>
<td>% of total</td>
</tr>
<tr>
<td>1</td>
<td>Cardiovascular disease</td>
<td>8 361.3</td>
</tr>
<tr>
<td>2</td>
<td>Malignant neoplasms (cancer)</td>
<td>7 259.3</td>
</tr>
<tr>
<td>3</td>
<td>Nervous system and sense organ disorders</td>
<td>5 143.2</td>
</tr>
<tr>
<td>4</td>
<td>Mental disorders</td>
<td>4 236.1</td>
</tr>
<tr>
<td>5</td>
<td>Chronic respiratory disease</td>
<td>2 599.4</td>
</tr>
<tr>
<td>6</td>
<td>Diabetes mellitus</td>
<td>1 802.2</td>
</tr>
<tr>
<td>7</td>
<td>Musculoskeletal diseases</td>
<td>1 445.4</td>
</tr>
<tr>
<td>8</td>
<td>Unintentional injuries</td>
<td>1 322.6</td>
</tr>
<tr>
<td>9</td>
<td>Diseases of the digestive system</td>
<td>1 258.2</td>
</tr>
<tr>
<td>10</td>
<td>Genitourinary diseases</td>
<td>1 088.2</td>
</tr>
<tr>
<td>Total Top 10</td>
<td></td>
<td>89.4%</td>
</tr>
<tr>
<td>Infectious and parasitic disease</td>
<td></td>
<td>395.5</td>
</tr>
<tr>
<td>Total DALY</td>
<td></td>
<td>38 771.5</td>
</tr>
</tbody>
</table>

Source: South Australian Burden of Disease Study.

Adelaide – North

In the Adelaide – North SA4 region, estimates show that the average amount of health loss increased overall by 3 per cent in the period between 1999-2001 to 2006-2008 (see Table 20). Premature mortality had a slight decrease of 2 per cent from 63.6 years per 1,000 persons in 1999-2001 to 62.1 years per 1,000 persons in 2006-2008. In the same period, the morbid illness associated with disease and injury conditions increased by 5 per cent.

Table 20 – Premature mortality and morbidity in Adelaide – North

<table>
<thead>
<tr>
<th>Three yearly average crude rates per 1 000 persons</th>
<th>1999-2001</th>
<th>2006-2009</th>
<th>Absolute change</th>
<th>Relative change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premature mortality</td>
<td>63.6</td>
<td>62.1</td>
<td>-1.5</td>
<td>-2%</td>
</tr>
<tr>
<td>Morbidity</td>
<td>75.8</td>
<td>79.4</td>
<td>3.6</td>
<td>5%</td>
</tr>
<tr>
<td>Total health loss</td>
<td>139.4</td>
<td>141.5</td>
<td>2.1</td>
<td>3%</td>
</tr>
</tbody>
</table>

Source: South Australian Burden of Disease Study.
In Table 21, the top 10 categories contributing to the disease burden for the Adelaide – North region, remained the same between 1999-2001 and 2006-2009 and they are consistent with the overall South Australian disease burden. There is variation in the ranking order with cancer being the highest DALY in 2006-2009 replacing cardiovascular disease, the highest DALY in 1999-2001 which saw a marked decline from comprising over one quarter of the disease burden in 1999-2001 to less than one fifth in 2006-2009.

Table 21 – Top 10 Disability adjusted Life Year disease categories in Adelaide – North

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank</td>
<td>DALY</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>1</td>
<td>12 541.1</td>
</tr>
<tr>
<td>Malignant neoplasms (cancer)</td>
<td>2</td>
<td>8 709.5</td>
</tr>
<tr>
<td>Mental disorders</td>
<td>3</td>
<td>6 789.7</td>
</tr>
<tr>
<td>Nervous system and sense organ disorders</td>
<td>4</td>
<td>5 619.6</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>5</td>
<td>2 950.9</td>
</tr>
<tr>
<td>Unintentional injuries</td>
<td>6</td>
<td>2 007.8</td>
</tr>
<tr>
<td>Musculoskeletal diseases</td>
<td>7</td>
<td>1 871.2</td>
</tr>
<tr>
<td>Diseases of the digestive system</td>
<td>8</td>
<td>1 594.1</td>
</tr>
<tr>
<td>Intentional injuries</td>
<td>9</td>
<td>1 359.5</td>
</tr>
<tr>
<td>Genitourinary diseases</td>
<td>10</td>
<td>1 346.8</td>
</tr>
<tr>
<td>Total Top 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>469.7</td>
</tr>
</tbody>
</table>

| Total DALY                    | 49 280.8  | 54 034.3 |

Source: South Australian Burden of Disease Study.

Adelaide – South

In the Adelaide – South region, estimates show that the average amount of health loss reduced overall by 3 per cent in the period between 1999-2001 and 2006-2008 (see Table 22). Premature mortality reduced 9 per cent from 69 years per 1 000 persons in 1999-2001 to 62.8 in 2006-2008 years per 1 000 persons. In the same period, the morbid illness associated with disease and injury conditions increased by 6 per cent.

Table 22 – Premature mortality and morbidity in Adelaide – South

<table>
<thead>
<tr>
<th>Three yearly average crude rates per 1 000 persons</th>
<th>1999-2001</th>
<th>2006-2008</th>
<th>Absolute change</th>
<th>Relative change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premature mortality</td>
<td>69.0</td>
<td>62.8</td>
<td>-6.3</td>
<td>-9%</td>
</tr>
<tr>
<td>Morbidity</td>
<td>75.7</td>
<td>80.5</td>
<td>4.8</td>
<td>6%</td>
</tr>
<tr>
<td>Total health loss</td>
<td>144.7</td>
<td>143.3</td>
<td>-1.5</td>
<td>-3%</td>
</tr>
</tbody>
</table>
In Table 23, the top 10 categories contributing to the disease burden for the Adelaide – South region, remained the same between 1999-2001 and 2006-2009 and they are consistent with the overall South Australian disease burden. The ranking order also remained unchanged.

### Table 23 – Top 10 Disability adjusted Life Year disease categories in Adelaide – South

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank</td>
<td>DALY</td>
</tr>
<tr>
<td>Malignant neoplasms (cancer)</td>
<td>1</td>
<td>9 297.4</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>2</td>
<td>9 091.8</td>
</tr>
<tr>
<td>Nervous system and sense organ disorders</td>
<td>3</td>
<td>6 141.2</td>
</tr>
<tr>
<td>Mental disorders</td>
<td>4</td>
<td>5 454.6</td>
</tr>
<tr>
<td>Chronic respiratory disease</td>
<td>5</td>
<td>3 515.3</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>6</td>
<td>2 323.4</td>
</tr>
<tr>
<td>Musculoskeletal diseases</td>
<td>7</td>
<td>1 787.2</td>
</tr>
<tr>
<td>Unintentional injuries</td>
<td>8</td>
<td>1 460.9</td>
</tr>
<tr>
<td>Diseases of the digestive system</td>
<td>9</td>
<td>1 387.0</td>
</tr>
<tr>
<td>Genitourinary diseases</td>
<td>10</td>
<td>1 076.7</td>
</tr>
<tr>
<td>Total Top 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>89.0%</td>
<td></td>
</tr>
</tbody>
</table>

Infectious and parasitic disease 349.6 0.7% 471.3 0.9%

Total DALY 46 624.4 48 415.5

Source: South Australian Burden of Disease Study.

### Adelaide – West

In the Adelaide – West SA4 region, estimates show that the average amount of health loss reduced overall by 9 per cent in the period between 1999-2001 to 2006-2008 (see Table 24). Premature mortality reduced by 10 per cent from 85.7 years per 1 000 persons in 1999-2001 to 76.8 years per 1 000 persons in 2006-2008. In the same period, the morbid illness associated with disease and injury conditions increased slightly by 1 per cent.

### Table 24 Premature mortality and morbidity in Adelaide – West

<table>
<thead>
<tr>
<th>Three yearly average crude rates per 1 000 persons</th>
<th>1999-2001</th>
<th>2006-2009</th>
<th>Absolute change</th>
<th>Relative change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premature mortality</td>
<td>85.7</td>
<td>76.8</td>
<td>-8.9</td>
<td>-10%</td>
</tr>
<tr>
<td>Morbidity</td>
<td>85.1</td>
<td>86.1</td>
<td>1.0</td>
<td>1%</td>
</tr>
<tr>
<td>Total health loss</td>
<td>170.8</td>
<td>162.9</td>
<td>-7.9</td>
<td>-9%</td>
</tr>
</tbody>
</table>

Source: South Australian Burden of Disease Study.
In Table 25, the top 10 categories contributing to the disease burden for the Adelaide – West Region, remained the same between 1999-2001 and 2006-2009 and they are consistent with the overall South Australian disease burden. There is variation in the ranking order with cancer being the highest DALY in 2006-2009, replacing cardiovascular disease, the highest DALY in 1999-2001 which is also consistent with the overall South Australian data.

Table 25 – Top 10 Disability adjusted Life Year disease categories in Adelaide – West

<table>
<thead>
<tr>
<th>Three year average estimates</th>
<th>1999-2001</th>
<th>2006-2009</th>
<th>Absolute change</th>
<th>Relative change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular disease</td>
<td>7 524.1</td>
<td>6 314.07</td>
<td>-120.1</td>
<td>-2%</td>
</tr>
<tr>
<td>Malignant neoplasms (cancer)</td>
<td>6 966.9</td>
<td>6 815.4</td>
<td>-51.5</td>
<td>-1%</td>
</tr>
<tr>
<td>Nervous system and sense organ disorders</td>
<td>4 476.7</td>
<td>5 066.2</td>
<td>59.5</td>
<td>13%</td>
</tr>
<tr>
<td>Mental disorders</td>
<td>4 051.2</td>
<td>3 925.9</td>
<td>-25.3</td>
<td>-1%</td>
</tr>
<tr>
<td>Chronic respiratory disease</td>
<td>2 726.4</td>
<td>2 754.2</td>
<td>2.8</td>
<td>1%</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>2 043.5</td>
<td>2 151.1</td>
<td>109.6</td>
<td>5%</td>
</tr>
<tr>
<td>Musculoskeletal diseases</td>
<td>1 309.2</td>
<td>1 334.6</td>
<td>25.4</td>
<td>2%</td>
</tr>
<tr>
<td>Diseases of the digestive system</td>
<td>1 213.9</td>
<td>968.4</td>
<td>-245.5</td>
<td>-20%</td>
</tr>
<tr>
<td>Unintentional injuries</td>
<td>1 055.9</td>
<td>1 022.0</td>
<td>-33.9</td>
<td>-3%</td>
</tr>
<tr>
<td>Genitourinary diseases</td>
<td>1 001.1</td>
<td>1 001.5</td>
<td>0.4</td>
<td>0%</td>
</tr>
<tr>
<td>Total Top 10</td>
<td></td>
<td>90.2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Infectious and parasitic disease               | 351.3     | 451.0     | 99.7            | 28%                 |

Total DALY                                     | 35 881.2  | 34 952.0  | -99.2           | -3%                 |

Source: South Australian Burden of Disease Study.

Barossa – Yorke – Mid North

In the Barossa – Yorke – Mid North region, estimates show that the average amount of health loss decreased slightly by 1 per cent in the period between 1999-2001 to 2006-2008 (see Table 26). Premature mortality reduced by 8 per cent from 86.5 years per 1 000 persons in 1999-2001 to 79.4 years per 1 000 persons in 2006-2008. However, in the same period, the morbid illness associated with disease and injury conditions increased by 9 per cent.

Table 26 – Premature mortality and morbidity in Adelaide – Barossa – Yorke – Mid North

<table>
<thead>
<tr>
<th>Three yearly average crude rates per 1 000 persons</th>
<th>1999-2001</th>
<th>2006-2009</th>
<th>Absolute change</th>
<th>Relative change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premature mortality</td>
<td>86.5</td>
<td>79.4</td>
<td>-7.1</td>
<td>-8%</td>
</tr>
<tr>
<td>Morbidity</td>
<td>85.7</td>
<td>93.0</td>
<td>7.3</td>
<td>9%</td>
</tr>
<tr>
<td>Total health loss</td>
<td>172.2</td>
<td>171.4</td>
<td>-0.8</td>
<td>-0.5%</td>
</tr>
</tbody>
</table>

Source: South Australian Burden of Disease Study.
In Table 27, the top 10 categories contributing to the disease burden for the Barossa – Yorke – Mid North region remained the same between 1999-2001 and 2006-2009 and they are consistent with the overall South Australian disease burden. There is variation in the ranking order with cancer being the highest DALY in 2006-2009 replacing cardiovascular disease, the highest DALY in 1999-2001, which is also consistent with the overall South Australian data.

**Table 27 – Top 10 Disability adjusted Life Year disease categories in Adelaide – Barossa – Yorke – Mid North**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular disease</td>
<td>1</td>
<td>3 730.7</td>
<td>21.5%</td>
<td>2</td>
<td>3 275.8</td>
<td>17.8%</td>
</tr>
<tr>
<td>Malignant neoplasms (cancer)</td>
<td>2</td>
<td>3 188.0</td>
<td>18.4%</td>
<td>1</td>
<td>3 705.1</td>
<td>20.1%</td>
</tr>
<tr>
<td>Nervous system and sense organ disorders</td>
<td>3</td>
<td>2 092.3</td>
<td>12.0%</td>
<td>3</td>
<td>2 535.8</td>
<td>13.7%</td>
</tr>
<tr>
<td>Mental disorders</td>
<td>4</td>
<td>1 761.6</td>
<td>10.1%</td>
<td>4</td>
<td>1 777.6</td>
<td>9.6%</td>
</tr>
<tr>
<td>Chronic respiratory disease</td>
<td>5</td>
<td>1 252.3</td>
<td>7.2%</td>
<td>5</td>
<td>1 492.6</td>
<td>8.1%</td>
</tr>
<tr>
<td>Unintentional injuries</td>
<td>6</td>
<td>1 124.3</td>
<td>6.5%</td>
<td>7</td>
<td>1 053.3</td>
<td>5.7%</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>7</td>
<td>1 040.4</td>
<td>6.0%</td>
<td>6</td>
<td>1 158.3</td>
<td>6.9%</td>
</tr>
<tr>
<td>Musculoskeletal diseases</td>
<td>8</td>
<td>647.5</td>
<td>3.7%</td>
<td>8</td>
<td>725.2</td>
<td>3.9%</td>
</tr>
<tr>
<td>Diseases of the digestive system</td>
<td>9</td>
<td>551.2</td>
<td>3.9%</td>
<td>10</td>
<td>447.8</td>
<td>2.4%</td>
</tr>
<tr>
<td>Genitourinary diseases</td>
<td>10</td>
<td>447.6</td>
<td>2.6%</td>
<td>9</td>
<td>480.3</td>
<td>2.6%</td>
</tr>
<tr>
<td>Total Top 10</td>
<td></td>
<td></td>
<td>92.0%</td>
<td></td>
<td></td>
<td>90.8%</td>
</tr>
</tbody>
</table>

**Infectious and parasitic disease**

| Total DALY                      | 17 327.7 | 18 438.8 |

Source: South Australian Burden of Disease Study.

**South Australia – Outback**

In the South Australia – Outback region, estimates show that the average amount of health loss decreased overall by five per cent in the period between 1999-2001 to 2006-2008 (see Table 28). Premature mortality reduced by eight per cent from 77.8 years per 1 000 persons in 1999-2001 to 71.5 years in 2006-2008. In the same period, the morbidity associated with disease and injury conditions increased by three per cent.

**Table 28 – Premature mortality and morbidity in South Australia – Outback**

<table>
<thead>
<tr>
<th>Three yearly average crude rates per 1 000 persons</th>
<th>1999-2001</th>
<th>2006-2009</th>
<th>Absolute change</th>
<th>Relative change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premature mortality</td>
<td>77.8</td>
<td>71.5</td>
<td>-6.3</td>
<td>-8%</td>
</tr>
<tr>
<td>Morbidity</td>
<td>89.6</td>
<td>92.0</td>
<td>2.5</td>
<td>3%</td>
</tr>
<tr>
<td>Total health loss</td>
<td>167.4</td>
<td>163.5</td>
<td>-3.8</td>
<td>-5%</td>
</tr>
</tbody>
</table>

Source: South Australian Burden of Disease Study.
In Table 29, the top 10 categories contributing to the disease burden for the South Australia – Outback Region, remained fairly consistent between 1999-2001 and 2006-2009, with the inclusion of diseases of the digestive system replacing intentional injuries in 2006-2009. There is variation in the ranking order with cancer being the highest DALY in 2006-2009 replacing cardiovascular disease, the highest DALY in 1999-2001, which is also consistent with the overall South Australian data.

Table 29 – Top 10 Disability adjusted Life Year disease categories in South Australia – Outback

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank</td>
<td>DALY</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>1</td>
<td>2 615.5</td>
</tr>
<tr>
<td>Malignant neoplasms (cancer)</td>
<td>2</td>
<td>2 270.5</td>
</tr>
<tr>
<td>Mental disorders</td>
<td>3</td>
<td>1 791.9</td>
</tr>
<tr>
<td>Nervous system and sense organ disorders</td>
<td>4</td>
<td>1 475.9</td>
</tr>
<tr>
<td>Chronic respiratory disease</td>
<td>5</td>
<td>1 278.5</td>
</tr>
<tr>
<td>Unintentional injuries</td>
<td>6</td>
<td>1 020.2</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>7</td>
<td>845.4</td>
</tr>
<tr>
<td>Acute respiratory infections</td>
<td>8</td>
<td>514.9</td>
</tr>
<tr>
<td>Intentional injuries</td>
<td>9</td>
<td>480.6</td>
</tr>
<tr>
<td>Musculoskeletal diseases</td>
<td>10</td>
<td>450.1</td>
</tr>
<tr>
<td>Diseases of the digestive system</td>
<td></td>
<td>384.3</td>
</tr>
<tr>
<td>Total Top 10</td>
<td></td>
<td>88.0%</td>
</tr>
<tr>
<td>Infectious and parasitic disease</td>
<td></td>
<td>182.1</td>
</tr>
<tr>
<td>Total DALY</td>
<td></td>
<td>14 460.3</td>
</tr>
</tbody>
</table>

Source: South Australian Burden of Disease Study.

South Australia – South East

In the South Australia – South East region, estimates show that the average amount of health loss decreased overall by one per cent in the period between 1999-2001 to 2006-2008 (see Table 30). Premature mortality reduced by eight per cent from 78.8 years per 1 000 persons in 1999-2001 to 72.4 years per 1 000 persons in 2006-2008. In the same period, the morbid illness associated with disease and injury conditions increased by seven per cent.

Table 30 – Premature mortality and morbidity in South Australia – South East

<table>
<thead>
<tr>
<th>Three yearly average crude rates per 1000 persons</th>
<th>1999-2001</th>
<th>2006-2009</th>
<th>Absolute change</th>
<th>Relative change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premature mortality</td>
<td>78.8</td>
<td>72.4</td>
<td>-6.4</td>
<td>-8%</td>
</tr>
<tr>
<td>Morbidity</td>
<td>83.7</td>
<td>89.4</td>
<td>5.7</td>
<td>7%</td>
</tr>
<tr>
<td>Total health loss</td>
<td>162.5</td>
<td>161.8</td>
<td>-0.7</td>
<td>-1%</td>
</tr>
</tbody>
</table>

Source: South Australian Burden of Disease Study.
In Table 31, the top 10 categories contributing to the disease burden for the South Australia – South East region, remained the same between 1999-2001 and 2006-2009 and they are consistent with the overall South Australian disease burden. There is variation in the ranking order with cancer being the highest DALY in 2006-2009 replacing cardiovascular disease, the highest DALY in 1999-2001, which is also consistent with the overall South Australian data.

Table 31 – Top 10 Disability adjusted Life Year disease categories in South Australia – South East

<table>
<thead>
<tr>
<th>Three year average estimates</th>
<th>1999-2001</th>
<th>2006-08</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank</td>
<td>DALY</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>1</td>
<td>5315.7</td>
</tr>
<tr>
<td>Malignant neoplasms (cancer)</td>
<td>2</td>
<td>5121.3</td>
</tr>
<tr>
<td>Nervous system and sense organ disorders</td>
<td>3</td>
<td>3223.9</td>
</tr>
<tr>
<td>Mental disorders</td>
<td>4</td>
<td>3030.1</td>
</tr>
<tr>
<td>Chronic respiratory disease</td>
<td>5</td>
<td>1917.9</td>
</tr>
<tr>
<td>Unintentional injuries</td>
<td>6</td>
<td>1776.3</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>7</td>
<td>1570.2</td>
</tr>
<tr>
<td>Musculoskeletal diseases</td>
<td>8</td>
<td>1015.0</td>
</tr>
<tr>
<td>Diseases of the digestive system</td>
<td>9</td>
<td>793.7</td>
</tr>
<tr>
<td>Genitourinary diseases</td>
<td>10</td>
<td>662.0</td>
</tr>
<tr>
<td>Total Top 10</td>
<td></td>
<td>89.5%</td>
</tr>
<tr>
<td>Infectious and parasitic disease</td>
<td>187.4</td>
<td>0.7%</td>
</tr>
<tr>
<td>Total DALY</td>
<td>2724.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: South Australian Burden of Disease Study.

3.2 Self-assessed health status (SF1)

Self-assessed health status is a commonly used proxy measure of actual health status and provides insights into how people perceive their own health in relation to lifestyle behaviours or disease. Although the SF1 is a measure of perceived rather than actual health and is not without its limitations, research has indicated that self-assessed health status is a reasonable predictor of mortality and morbidity.
Results from the 2011-12 Australian Health Survey (AHS) indicate that there was no difference between the self-reported health status of South Australians compared to all Australians (aged 15 years and over). 55.8 per cent of South Australians rated their health status as either excellent or very good, compared to 55.6 per cent of all Australians (Figure 32).

**Figure 32 – Self-assessed health status of people aged 15 years and over, 2011-12.**

![Self-assessed health status graph](image)

Source: Australian Health Survey 2011-12.

The South Australian Monitoring and Surveillance System (SAMSS) monitors the self-assessed health status of South Australians aged 18 years and over. Since 2002 the proportion of South Australian adults with a self-assessed health status of excellent or very good has remained constant as can be noted in Figure 33. In 2012, 55.9 per cent of South Australians considered their health to be either excellent or very good.

**Figure 33 – Self-assessed health status of South Australians aged 18 years and over, July 2002 – December 2012**

![Self-assessed health status graph](image)

The difference in self-assessed health status between males and females is shown in Figure 34. A higher proportion of females (56.3 per cent) rated their health status as excellent or very good compared to males (55.3 per cent).

Figure 34 – Self-assessed health status of South Australians aged 18 years and over by sex, January 2008 – December 2012


The self-reported health status of South Australians decreased with age as shown in Figure 35. As age increased, the proportion of people indicating their health status was poor increased, while those who reported their health status as either excellent or very good decreased.

Figure 35 – Self-assessed health status of South Australians aged 18 years and over by age groups, January 2008 – December 2012

Self-assessed health status varied across socioeconomic groups (see Figure 36). South Australians who were in the lowest SEIFA category had the lowest proportion of people who rated their health status as excellent or very good (47.6 per cent), compared to those in the highest SEIFA category who reported the highest proportion of people with an excellent or very good health status (62.4 per cent).

Figure 36 – Self-assessed health status of South Australians aged 18 years and over by SEIFA, January 2008 – December 2012


Figure 37 presents the levels of self-assessed health status of South Australians by SA4 region. Those residing in the Adelaide – Central and Hills region had the highest proportion of people who reported their health status to be excellent or very good (60.6 per cent). People residing in the Barossa-Yorke-Mid North and South Australia – Outback regions reported the highest percentage of people with a fair or poor health status (19.1 per cent).

Figure 37 – Self-assessed health status of South Australians aged 18 years and over by SA4 region (2008-2012)

3.3 Mental health and wellbeing

Mental illness is one of the leading causes of non-fatal burden of disease and injury in Australia. In the case of depression, it is estimated it will be the second largest contributor to the world’s disease burden by 2020\textsuperscript{35}.

Mental illness is associated with increased exposure to health risk factors, poorer physical health, and higher rates of death from many causes including suicide. Mental health problems are responsible for a large proportion of disability cases, incur high direct and indirect costs, result in high numbers of hospitalisations, and impose a heavy burden of human suffering, including stigmatisation of people with mental disorders and their families\textsuperscript{33}.

A note on the Kessler 10 (K10) psychological distress scale.

One method of indicating a possible mental illness or quantifying the mental health and wellbeing of individuals and the population is by measuring levels of psychological distress using the Kessler 10 (K10) psychological distress scale\textsuperscript{36}. The K10 scale is designed to measure non-specific psychological distress, based on questions about level of nervousness, agitation, psychological fatigue and depression in the past 30 days.

Psychological distress is classified as scoring high or very high (a score of 22 or higher) using the K10 psychological distress scale.

3.3.1 The state of our mental health

The 2011-12 AHS assessed the levels of self-reported psychological distress in people aged 18 years and over. Psychological distress is classified as those with high or very high psychological distress (a score of 22 or higher) using the K10 psychological distress scale. The results found that there was a higher proportion of South Australians (11.3 per cent) with high or very high psychological distress compared to all Australians (10.8 per cent). There was a greater proportion of South Australian males with high or very high psychological distress (10.1 per cent) compared to all Australian males (8.8 per cent), however there was no difference between females (Figure 38).

Figure 38 – Proportion of adults aged 18 years and over with self-reported high or very high psychological distress

![Proportion of adults aged 18 years and over with self-reported high or very high psychological distress](image)

Source: Australian Health Survey: First Results, 2011-12 – South Australia.
State-wide Comparisons

SAMSS has monitored the proportion of South Australian adults aged 18 years and over who reported having psychological distress since 2002. Since 2002 the proportion of South Australian adults with psychological distress has decreased (Figure 39). In 2012, the proportion of South Australians with psychological distress was 8.9 per cent.

Figure 39 – Proportion of South Australian adults aged 18 years and over with psychological distress, July 2002 – December 2012.


In 2012, there were a greater proportion of females with psychological distress (10.0 per cent) compared to males (7.6 per cent) as shown in Figure 40.

Figure 40 – Proportion of South Australian adults aged 18 years and over with psychological distress by sex, December 2012.

Adults aged 18 to 29 years reported the highest levels of psychological distress (14.3 per cent) in 2012. Adults aged 65 years and over had the lowest proportion of people with psychological distress (5.8 per cent) as shown in Figure 41.

Figure 41 – Proportion of South Australian adults aged 18 years and over with psychological distress by age group, December 2012.


South Australians in the lowest SEIFA category reported the highest levels of psychological distress (13.9 per cent), followed by those in the low SEIFA category (9.2 per cent). The remaining SEIFA categories were all similar as can be noted in Figure 42.

Figure 42 – Proportion of South Australian adults aged 18 years and over with psychological distress by SEIFA, December 2012.

The proportion of people with psychological distress by SA4 region is shown in Figure 43. South Australians in the Adelaide-North region reported the highest proportion of people with psychological distress (10.0 per cent) compared to the Adelaide-Central & Hills region with the lowest proportion of psychological distress (6.9 per cent).

**Figure 43 – Proportion of South Australian adults aged 18 years and over with psychological distress by SA4 region, January 2008 – December 2012.**


**Public health action in improving our mental health**

**“Let’s Think Positive” campaign**

In August 2010 the Minister for Mental Health and Substance Abuse approved the statewide Mental Health Communications Strategy 2010-2012. A key objective of the strategy was to improve the public’s understanding and perceptions of mental illness and what it means for those affected, reducing associated stigma and fear and increasing acceptance and inclusion. To achieve this major objective and action one of the Social Inclusion Board’s recommendations, a mass media advertising campaign called ‘Let’s Think Positive’ was developed in 2011.

The Let’s Think Positive media campaign commenced in February 2012 to raise awareness of mental health illness in the community, which is critical to engendering community acceptance of mental health reform programs.

Funding by the Australian Government of $590 000 was allocated in 2011-12 to develop a series of television and radio advertisements and posters in public places such as bus stops. The campaign represents approximately one per cent of funding in relation to the mental health reforms of the National Partnership Agreement on Improving Public Hospital Services, which are targeted to provide services to mental health consumers designated sub-acute). SA Health is contributing an additional $110 000 to the initiative.

A further $350 000 from the National Partnership Agreement on Improving Public Hospital Services has been allocated in 2012-13 to complete the Let’s Think Positive campaign through the continuation of multimedia advertisements and public posters.
South Australian Suicide Prevention Strategy 2012-2016

Every suicide is a tragedy. The Government of South Australia’s significant concerns about the rate of suicide led to it mandating the development of a strategic plan that cuts across all sectors of the community.

SA Health plays a lead role in the development of the South Australian Suicide Prevention Strategy. This has involved working collaboratively with government departments, the non-government sector, and business and community groups. Suicide prevention is important to the wellbeing of all South Australians.

The State Government is committed to supporting safe communities of healthy neighbourhoods that are strong and supportive, are resilient in adversity and work together in times of need. The South Australian Suicide Prevention Strategy provides the state with a way forward to reduce the impact of suicide.

The SA Suicide Prevention Advisory Committee was established in April 2012 to oversee development of the South Australian Suicide Prevention Strategy and provide oversight of the comprehensive implementation plan, which was released in September 2012.

Suicide prevention in the context of the South Australian Suicide Prevention Strategy is all encompassing of awareness, prevention, intervention and postvention. The South Australian Suicide Prevention Strategy comprises seven goals that encompass a whole-of-community response, to:

1. provide a socially inclusive community of resilient individuals and supportive environments
2. provide a sustainable, coordinated approach to service delivery, resources and information within communities to prevent suicide
3. provide targeted suicide prevention initiatives, activities and programs
4. address, as a priority, the issues that affect regional South Australians
5. provide targeted postvention activities and programs
6. improve the evidence base and understanding of suicide and suicide prevention
7. implement standards and continuous practice improvement in suicide prevention

Work began in 2012 to develop community networks through Local Government; early work was with the Port Lincoln Council and the Mt Gambier Council.

SA Health have also released a consultation draft of ‘Guidelines for working with the suicidal person’.

The South Australian Suicide Prevention Strategy was released in September 2012, so outcomes for 2012 are not extensive; however, awareness has grown through the consultation process.

The South Australian Suicide Prevention Strategy has provided the federal government with confidence that SA has achieved a coordinated approach to suicide prevention. The South Australian Suicide Prevention Strategy enabled the department to attract $2.5 million in ‘Hot Spot’ funding for improved pedestrian crossings, lighting and fencing on the Noarlunga Railway line to reduce the suicide risk. It has also attracted federal funding for Mates in Construction, Wesley Lifeforce and Standby Response to begin work in SA. SA Health is working collaboratively with all these organisations.

Future directions

From the South Australian Suicide Prevention Strategy will be drawn specific strategies for children and youth, Aboriginal and Torres Strait Islander communities, men and older persons.

The implementation plan has been included in the South Australian Suicide Prevention Strategy and, over the next year, it will be required to provide a cross-government response to the actions and activities identified as necessary to achieve the outcomes over the life of the strategy.

Over the next five years SA Health will be working with the Commonwealth Government, State Government departments and Local Government to coordinate local responses.
3.4 Cardiovascular disease

Cardiovascular disease (CVD) covers all disease and conditions of the heart and blood vessels and includes ischemic heart disease, heart failure and stroke. CVD is not only the biggest killer in our community and second biggest cause of burden of illness and disability; it is also the most expensive disease group in terms of health-care expenditure. Despite steady improvement over the last three decades, cardiovascular disease remains one of the biggest causes of death in South Australia and continues to generate a considerable burden on the population in terms of illness and disability.

CVD is a public health concern because, outside of genetic and other bio-medical predictors, many of its causes arise out of the social and physical environment. That is, the way our communities are panned and organised and the opportunities for healthy living that people can access.

3.4.1 The state of cardiovascular disease in South Australia

Results from the 2011-12 AHS indicate that South Australians (of all ages) had a higher proportion of people with self-reported diagnosed heart, stroke and vascular disease (5.2 per cent) compared with the rest of Australia (4.7 per cent; Figure 44). This included people with ischaemic heart disease, cerebrovascular disease, oedema, heart failure, and diseases of the arteries, arterioles and capillaries.

Figure 44 Proportion of people with self-reported diagnosed heart, stroke and vascular disease

![Figure 44 Proportion of people with self-reported diagnosed heart, stroke and vascular disease]

Source: Australian Health Survey: First Results, 2011-12 – South Australia.
SAMSS monitors the proportion of South Australian adults aged 18 years and over with CVD by asking if they had ever been told by a doctor that they had a heart attack, angina, heart disease or stroke. Since 2002, the proportion of South Australian adults with CVD has decreased as can be noted in Figure 45. In 2012 the proportion of South Australian adults with CVD was 7.3 per cent.

**Figure 45 – Proportion of South Australian adults aged 18 years and over with CVD, July 2002 – December 2012**

![Graph showing the proportion of South Australian adults with CVD from 2002 to 2012.](source: SAMSS, 2012.)

There was a higher proportion of males with CVD (8.4%) compared to females (6.3%) as shown in Figure 46.

**Figure – 46 Proportion of South Australian adults aged 18 years and over with CVD by sex, December 2012**

![Bar chart showing the proportion of South Australian adults with CVD by sex.](source: SAMSS, 2012.)
South Australians aged 60 years and over had the highest proportion of people with CVD (20.5 per cent) compared to the other age groups as shown in Figure 47.

Figure 47 – Proportion of South Australian adults aged 18 years and over with CVD by age group, December 2012

There was a higher proportion of people with CVD in the lowest SEIFA area (8.6 per cent). As the SEIFA increased, the proportion of people with CVD decreased, with those residing in the highest SEIFA area reporting the lowest proportion of 6.4 per cent (Figure 48).

Figure 48 Proportion of South Australian adults aged 18 years and over with CVD by SEIFA category, January 2008 – December 2012

*Insufficient cases
The Adelaide – Central & Hills region has the lowest proportion of people with CVD (6.4 per cent), while those residing in the Barossa-Yorke-Mid North region had the highest proportion of CVD (8.8 per cent) as indicated in Figure 49.

Figure 49 – Proportion of South Australian adults aged 18 years and over with CVD by SA4 region, January 2008 – December 2012


3.5 Cancer

The number of cases of cancer diagnosed in Australia is projected to rise over the next decade for both males and females and is expected to reach about 150 000 in 2020 – an increase of almost 40 per cent from 2007. Increases in the number of cases diagnosed are due primarily to the ageing and increasing population and are expected to be most evident in older populations.

About 28 per cent of all deaths in South Australia are due to cancer, and more years of life are lost prematurely to cancer than to any other cause. Many different factors impact on individual health and population health. The socio-economic, environmental and behavioural factors which precede or predict rates of cancer also predict many other chronic diseases, such as heart disease and diabetes. Intervening to prevent cancer will also improve other health outcomes.

The state of cancer in Australia

Between 2004 and 2008, the average annual number of cancer cases diagnosed in Australia was 106 540 and on average, annually 8 768 of these cases were in South Australia. Figure 50 compares the age-standardised incidence (number of new cancer cases diagnosed in a given period) of all cancers nationally to those within South Australia and illustrates a comparable incidence rate, that is 488.2 cases per 100 000 versus 479.4 cases in South Australia, respectively. From 2006 to 2010 the average annual number of deaths from cancer in Australia was 41 166 with the average annual number of deaths in South Australia at 3 567.

Figure 50 compares the age-standardised mortality rate of all cancers nationally to those within South Australia and illustrates a comparable mortality rate that is 176.9 cases per 100 000 versus 177.7 cases in South Australia, respectively.
At a national level Prostate cancer is estimated to be the most common cancer in 2012 (18,560 cases), followed by bowel cancer (15,840), breast cancer (14,680), melanoma of the skin (12,510) and lung cancer (11,280). These cancers are expected to account for more than 60 per cent of all cancers estimated to be diagnosed in Australia in 201239.

Figure 50 – Incidence (2004-2006) and mortality (2006-2010) of all cancers combined, Australia and South Australia.


Most Common Cancers in South Australia

There are many types of cancer, varying by site of origin (primary site) and by tumour type (histology). This section describes the patterns of the most common invasive cancers by primary site in South Australia for 2009, examining them by using measures of incidence (new cases) and mortality (deaths), by both sex and age groups.
Incidence

Overall, the top five cancers recorded among persons in South Australia during 2009 were prostate, colorectal, female breast, lung and melanoma. These five cancers accounted for up to 61 per cent of all cancers. Prostate cancer continued to be the most common cancer recorded for persons, representing 19.4 per cent of all cancers, followed by colorectal cancer 13.2 per cent and female breast cancer 11.7 per cent (Table 32).

Table 32 – Most common cancers in South Australia in 2009

<table>
<thead>
<tr>
<th>Site name</th>
<th>New cases</th>
<th>Rate</th>
<th>Lifetime risk</th>
<th>% all Cancers</th>
<th>Deaths</th>
<th>Rate</th>
<th>Lifetime risk</th>
<th>% all Cancers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate</td>
<td>1804</td>
<td>91.2</td>
<td>1 in 13</td>
<td>19.4</td>
<td>278</td>
<td>12.6</td>
<td>1 in 204</td>
<td>7.9</td>
</tr>
<tr>
<td>Colorectal</td>
<td>1230</td>
<td>61.5</td>
<td>1 in 23</td>
<td>13.2</td>
<td>444</td>
<td>21.5</td>
<td>1 in 77</td>
<td>12.6</td>
</tr>
<tr>
<td>Female breast</td>
<td>1086</td>
<td>57.9</td>
<td>1 in 21</td>
<td>11.7</td>
<td>261</td>
<td>13.0</td>
<td>1 in 111</td>
<td>7.4</td>
</tr>
<tr>
<td>Lung</td>
<td>862</td>
<td>43.3</td>
<td>1 in 32</td>
<td>9.3</td>
<td>681</td>
<td>33.6</td>
<td>1 in 43</td>
<td>19.3</td>
</tr>
<tr>
<td>Melanoma</td>
<td>674</td>
<td>36.1</td>
<td>1 in 39</td>
<td>7.2</td>
<td>93</td>
<td>4.6</td>
<td>1 in 329</td>
<td>2.6</td>
</tr>
<tr>
<td>non-Hodgkin lymphomas</td>
<td>419</td>
<td>21.8</td>
<td>1 in 61</td>
<td>4.5</td>
<td>128</td>
<td>6.0</td>
<td>1 in 303</td>
<td>3.6</td>
</tr>
<tr>
<td>Leukaemia</td>
<td>282</td>
<td>14.6</td>
<td>1 in 99</td>
<td>3.0</td>
<td>133</td>
<td>6.3</td>
<td>1 in 303</td>
<td>3.8</td>
</tr>
<tr>
<td>Unknown primary</td>
<td>249</td>
<td>12.1</td>
<td>1 in 140</td>
<td>2.7</td>
<td>196</td>
<td>9.3</td>
<td>1 in 196</td>
<td>5.5</td>
</tr>
<tr>
<td>Uterus</td>
<td>218</td>
<td>11.1</td>
<td>1 in 103</td>
<td>2.3</td>
<td>29</td>
<td>1.4</td>
<td>1 in 1,044</td>
<td>0.8</td>
</tr>
<tr>
<td>Pancreas</td>
<td>216</td>
<td>10.6</td>
<td>1 in 130</td>
<td>2.3</td>
<td>175</td>
<td>8.6</td>
<td>1 in 187</td>
<td>5.0</td>
</tr>
<tr>
<td>All Cancers</td>
<td>9,297</td>
<td>478.3</td>
<td>1 in 3</td>
<td>100.0</td>
<td>3,533</td>
<td>171.8</td>
<td>1 in 10</td>
<td>100.0</td>
</tr>
</tbody>
</table>


Males

Prostate cancer was the most commonly reported cancer in males, accounting for 33.7 per cent of all cancers. Colorectal cancer (12.5 per cent), lung cancer (9.8 per cent), melanoma (7.2 per cent) and non-Hodgkin lymphomas (4.4 per cent) were the next most common cancers among males. These five cancers accounted for 68 per cent of all newly diagnosed cancers among males in 2009 (Table 33).

Table 33 – Most common cancers in South Australia 2009 – Males

<table>
<thead>
<tr>
<th>Site name</th>
<th>New cases</th>
<th>Rate</th>
<th>Lifetime risk</th>
<th>% all Cancers</th>
<th>Deaths</th>
<th>Rate</th>
<th>Lifetime risk</th>
<th>% all Cancers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate</td>
<td>1,804</td>
<td>196.9</td>
<td>1 in 7</td>
<td>33.7</td>
<td>278</td>
<td>31.1</td>
<td>1 in 98</td>
<td>13.9</td>
</tr>
<tr>
<td>Colorectal</td>
<td>667</td>
<td>73.6</td>
<td>1 in 19</td>
<td>12.5</td>
<td>235</td>
<td>26.0</td>
<td>1 in 63</td>
<td>11.8</td>
</tr>
<tr>
<td>Lung</td>
<td>523</td>
<td>58.2</td>
<td>1 in 26</td>
<td>9.8</td>
<td>420</td>
<td>46.7</td>
<td>1 in 33</td>
<td>21.0</td>
</tr>
<tr>
<td>Melanoma</td>
<td>385</td>
<td>44.2</td>
<td>1 in 33</td>
<td>7.2</td>
<td>64</td>
<td>7.0</td>
<td>1 in 249</td>
<td>3.2</td>
</tr>
<tr>
<td>non-Hodgkin lymphomas</td>
<td>235</td>
<td>26.4</td>
<td>1 in 52</td>
<td>4.4</td>
<td>62</td>
<td>8.6</td>
<td>1 in 276</td>
<td>3.1</td>
</tr>
<tr>
<td>Kidney</td>
<td>164</td>
<td>18.1</td>
<td>1 in 68</td>
<td>3.1</td>
<td>72</td>
<td>7.9</td>
<td>1 in 203</td>
<td>3.6</td>
</tr>
<tr>
<td>Bladder</td>
<td>161</td>
<td>18.0</td>
<td>1 in 95</td>
<td>3.0</td>
<td>83</td>
<td>9.3</td>
<td>1 in 267</td>
<td>4.2</td>
</tr>
<tr>
<td>Leukaemia</td>
<td>160</td>
<td>18.3</td>
<td>1 in 80</td>
<td>3.0</td>
<td>80</td>
<td>9.0</td>
<td>1 in 200</td>
<td>4.0</td>
</tr>
<tr>
<td>Unknown primary</td>
<td>126</td>
<td>14.0</td>
<td>1 in 136</td>
<td>2.4</td>
<td>93</td>
<td>10.4</td>
<td>1 in 215</td>
<td>4.7</td>
</tr>
<tr>
<td>Pancreas</td>
<td>115</td>
<td>12.5</td>
<td>1 in 109</td>
<td>2.1</td>
<td>99</td>
<td>10.9</td>
<td>1 in 144</td>
<td>5.0</td>
</tr>
<tr>
<td>All Cancers</td>
<td>5,349</td>
<td>594.8</td>
<td>1 in 3</td>
<td>100.0</td>
<td>1,997</td>
<td>221.9</td>
<td>1 in 8</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Females
Breast cancer remained the most commonly reported cancer in females, accounting for 27.5 per cent of all cancers, followed by colorectal (14.3 per cent), lung (8.6 per cent), melanoma (7.3 per cent) and uterus (5.5 per cent) being the next most common cancers in females. These five cancers accounted for 63 per cent of all cancers diagnosed among females in 2009 (Table 34).

Table 34 – Most common cancers in South Australia 2009 – Females

<table>
<thead>
<tr>
<th>Site name</th>
<th>Incidence</th>
<th>Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New cases</td>
<td>Rate</td>
</tr>
<tr>
<td>Breast</td>
<td>1086</td>
<td>111.4</td>
</tr>
<tr>
<td>Colorectal</td>
<td>563</td>
<td>50.8</td>
</tr>
<tr>
<td>Lung</td>
<td>339</td>
<td>31.7</td>
</tr>
<tr>
<td>Melanoma</td>
<td>289</td>
<td>29.5</td>
</tr>
<tr>
<td>Uterus</td>
<td>218</td>
<td>21.0</td>
</tr>
<tr>
<td>non-Hodgkin lymphomas</td>
<td>184</td>
<td>18.0</td>
</tr>
<tr>
<td>Unknown primary</td>
<td>123</td>
<td>10.8</td>
</tr>
<tr>
<td>Leukaemia</td>
<td>122</td>
<td>11.6</td>
</tr>
<tr>
<td>Ovary</td>
<td>103</td>
<td>10.3</td>
</tr>
<tr>
<td>Pancreas</td>
<td>101</td>
<td>9.2</td>
</tr>
<tr>
<td>All Cancers</td>
<td>3 948</td>
<td>384.4</td>
</tr>
</tbody>
</table>


Mortality
Lung cancer (19.3 per cent) and colorectal cancer (12.6 per cent) continued to be the leading causes of cancer death recorded for South Australian persons who died in 2009, followed by prostate (7.9 per cent), female breast (7.4 per cent) and unknown primary site (5.5 per cent; see Table 32).

Males
Lung cancer remained the leading cause of cancer death among South Australian males (21.0 per cent). Of the other cancer sites, prostate (13.9 per cent), colorectal (11.8 per cent), pancreas (5.0 per cent) and unknown primary (4.7 per cent) were also leading causes of death from cancer among males (see Table 33).

Females
Breast cancer (17.0 per cent), lung cancer (17.0 per cent) and colorectal cancer (13.6 per cent) were the leading causes of cancer deaths among females in South Australia during 2009. Other common cancers that were recorded as the cause of death among females were unknown primary site (6.7 per cent), pancreas (4.9 per cent) and ovary (4.4 per cent; see Table 34).
Most common cancers by age

Cancer was predominantly a disease of older South Australians with 60 per cent occurring in the 65 years and over age group. The relatively few cancers which occurred in the 0-44 age group account for only 6.9 per cent of all cancers (641 cases).

In people aged 0 to 14 years, leukaemias (nine cases), cancers of the brain (seven cases), Non-Hodgkin’s lymphomas (four cases), other endocrine (four cases) and soft tissue (four cases) accounted for 75.7 per cent of all cancers within this group.

For people in the 15 to 44 year age group, female breast (116 cases), melanoma (103 cases), colorectal (45 cases), testis (41 cases), non-Hodgkin’s lymphoma (39 cases), and thyroid (30 cases) were the most commonly reported cancer sites accounting for 61.9 per cent of all cancers in this age group.

For people in the 45 to 64 year age group, the most common cancer sites reported included prostate (611 cases), female breast (522 cases), colorectal (355 cases), melanoma (245 cases) and lung (213 cases). These accounted for 63.1 per cent of all cancers in this age group.

In those aged 65 years and over, it was the most common cancers overall that predominated (61.5 per cent), with prostate (1 191 cases), colorectal (830 cases), lung (633 cases), female breast (448 cases) and melanoma (326 cases).

Cancer deaths were very rare in the 0-14 age group (four deaths). For those aged 15 to 44 years, there were 71 deaths caused by cancer, with the most commonly reported sites being female breast (nine deaths), brain (10 deaths), colorectal (10 deaths), and lymphoma (three deaths). For those aged 45 to 64 years, there were 784 deaths attributed to cancer, and those most frequently recorded were lung (157 deaths), colorectal (99 deaths) and female breast (94) cancers. There were 2 674 deaths caused by cancer among those aged 65 years and over, and the most commonly reported sites were prostate (263 deaths), colorectal (335 deaths), lung (519 deaths), unknown primary site (160 deaths) and female breast (158 deaths).

Age and sex differences

There were more cancer cases occurring among males (5 349) compared to females (3 984) in South Australia. This disparity was true across a broad range of cancer sites with breast and thyroid being the two important exceptions. The age-standardised incidence rate for 2009 for all invasive cancers combined was 594.8 cases per 100 000 for males and 384.4 cases per 100 000 for females, resulting in an age-adjusted male-female ratio of 1.55.

Below the age of 55, female cases (898) outnumber male cases (754). This trend reverses from 55 years of age, when male cases predominate (60 per cent of cases). This is due largely to female breast cancer cases in the 35 to 54 age group and then prostate and lung cancer in the over 55 year age group.

The detailed age breakdown of new cancer diagnoses for 2009 was 0-14 (0.4 per cent of all cancers), 15-44 (6.5 per cent), 45-64 (33.2 per cent) and 65+ (60.0 per cent). This pattern of age breakdown has been fairly consistent over the last 20 years. Similarly, the percentage of deaths caused by cancer also increased towards the older age groups.

Deaths from cancer generally increase with age for both sexes, with the majority of cancer deaths occurring from the age of 65 (75.7 per cent). For each of these age groups, the percentage of deaths caused by cancer was 65-69 (10.1 per cent), 70-74 (12.8 per cent), 75-79 (14.0 per cent), 80-84 (18.2 per cent) and 85 years and over (20.6 per cent). The likelihood of dying from cancer was similar for males and females up to and including the age of 54 years. However, after the age of 55 years the percentage of male deaths was higher and increased more steeply in males.
Action on Cancer Detection and Prevention

3.6 Screening

3.6.1 Breast cancer screening

BreastScreen SA is a population-based, state-wide breast cancer screening mammography program funded by both the State and Commonwealth governments.

In line with the objectives of the BreastScreen Australia Quality Improvement Program, BreastScreen SA aims to reduce illness and death resulting from breast cancer through organised screening to detect cases of unsuspected breast cancer in women, enabling intervention at an early stage. Breast cancer screening mammography, which involves the taking of breast X-rays (mammograms) every two years, is primarily recommended for women aged 50-69 years without breast symptoms; however, women from the age of 40 years are eligible to attend.

The target participation rate for women in the target age group is >70 per cent. The age standardised participation rate for women in South Australia aged 50-69 years for 2009-2010 was 56.4 per cent, which was above the national rate of 55 per cent (see Figure 51).

Figure 51 – Age standardised participation rates of eligible women aged 50-69 in BreastScreen Australia.

There has been a decreasing trend in participation rates since 2003 due to population growth in the target age group (2-3 per cent increase each year), radiography workforce shortages affecting screening capacity, and finite screening capacity.

For South Australian women in 2008, the lifetime risk of developing breast cancer before the age of 75 years was 1 in 10, making it the most commonly reported cancer for this population group and accounting for 27.6 per cent of all cancers diagnosed. However, the chance of dying from breast cancer before the same age was much less (around 1 in 65), accounting for 14.7 per cent of all cancer deaths in women in 2008.

In 2008 screen-detected invasive breast cancers represented 35.5 per cent of all such cancers diagnosed in South Australia for women aged 40 years and older, and 49.3 per cent for women aged 50-69 years in SA.

Findings from a comprehensive case control evaluation published in 2008 indicate that participation in breast screening in SA is associated with a reduction in breast cancer mortality of up to 41 per cent. The report also suggests that there is a greater reduction in risk of breast cancer death when women attend regularly at BreastScreen SA for a screening mammogram. The study found that women, who had at least three rounds of screening, at least 30 months apart in the period leading up to their diagnosis, reduced their risk of breast cancer death by up to 53 per cent.
BreastScreen SA data indicates that, in the 2011 calendar year, there were 427 screen-detected breast cancers among screened women aged 40 years and older.

In 2012, 77,946 screening mammograms were provided. Of these, 56,745 (72.8 per cent) were provided at the six fixed screening clinics in the Adelaide metropolitan area, and 21,201 (27.2 per cent) by the three mobile screening units. Of the total number of screening mammograms, 79.1 per cent were provided to women in the target age group of 50–69 years. New clients represented 13.3 per cent of all screening mammograms performed in 2012.

In 2012, BreastScreen SA recalled 1,962 women to attend assessment of a screen-detected abnormality. The total recall to assessment rate for women with screen-detected abnormalities was 2.5 per cent, which is one of the lowest recall rates in Australia.

The closure of screening clinics for some periods during 2012, due to planned building works associated with the introduction of digital mammography, resulted in a decline during 2012 in the proportion of women screened within the required time (target is >90 per cent women screened in 28 calendar days). Notwithstanding these planned closures, 78.1 per cent of women were screened in the required time.

In 2011 and 2012 major initiatives for BreastScreen SA included:

- achieving four years’ accreditation, with commendation, in May 2011 from the BreastScreen Australia National Quality Management Committee – the highest recognition possible
- approval in June 2011 of the Digital Business Case, a State and Commonwealth government initiative to replace existing analogue infrastructure with digital technology, with a project completion date of June 2013
- conversion of four fixed clinics to digital between January 2012 and April 2012
- conversion of the remaining analogue fixed clinic to digital in October 2012, operating as a new dedicated screening clinic in the eastern metropolitan area
- implementing digital technology in early November 2012 in the assessment clinic, which is now operating full-time
- replacing Mobile Screening Unit 3 with a digital unit in October 2012, with operations commencing in January 2013
- employment of special recruitment strategies aimed at Indigenous, culturally and linguistically diverse (CALD) women and those with special needs
- launching of a media campaign in August 2012 to promote breast cancer screening following the increase in capacity afforded by the introduction of digital technology
- commencement of a project for replacement of the BreastScreen SA client information system.

In December 2012, following stringent internal routine quality assurance activities which identified a lower than expected cancer detection rate under digital technology, a system-wide review of BreastScreen SA was commissioned with the two-fold purpose of identifying any cancers which may have escaped detection (and so enable women to receive appropriate care as soon as possible) and to determine the cause of the lower than expected cancer detection rates. The scope of the review included the re-reading by independent external radiologists of 53,104 digital mammograms with a normal result, the undertaking of a root cause analysis and six separate lines of inquiry conducted by external subject matter experts.

The final report of the BreastScreen SA Review dated 17 May 2013 includes a number of key recommendations which focus on, amongst other measures, the development of a quality improvement plan and the implementation of quality assurance activities at BreastScreen SA.

**Future directions**

BreastScreen SA and SA Health are committed to implementing all the recommendations related to the root cause analysis and the review of digital mammography re-reads to ensure BreastScreen SA continues to provide their clients with a high quality service. A number of these recommendations have already been implemented or are currently underway.

BreastScreen SA will progress with completing replacement of the existing client information system during 2013 with planned implementation from June 2013.
The roll-out of digital screening services will also be completed, with the establishment of an additional fixed digital screening clinic servicing the far southern metropolitan area commencing operations as from 1 July 2013.

The full introduction of digital technology is expected to improve the capacity and productivity of the program, with an expected increase in throughput by 23,000 screening mammograms by 2015-16 and a participation rate expected to reach as high as 66 per cent by 2015-16.

3.6.2 Bowel screening

Bowel cancer refers specifically to cancer of the large intestine (that is, the colon or rectum) and may be present for many years before showing symptoms, and often symptoms are not evident until the cancer has reached a relatively advanced stage. Screening has the potential to allow early diagnosis and reduction in bowel cancer mortality rates and to prevent development of the disease.

Bowel cancer is an important health issue for men and women. The risk increases from the age of 40 years but rises sharply and progressively after 50 years of age.

In Australia, incidence of bowel cancer has been increasing each year since 1982. The risk of being diagnosed by the age of 85 was 1 in 10 for males and 1 in 15 for females in 2008. Bowel cancer also accounts for 10 per cent of all deaths from invasive cancers in Australia, with 4,047 deaths in 2007, making it the second most common cause of cancer-related death after lung cancer.

The National Bowel Cancer Screening Program (NBCSP) commenced the first phase of free bowel cancer testing for older South Australians in January 2007. The second phase commenced across Australia on 1 July 2008, offering a free faecal occult blood test (FOBT) to people turning 50, 55 or 65 years of age between 1 January 2008 and 31 December 2010 with a Medicare card or Department of Veterans Affairs gold card. As part of the 2011-12 Commonwealth budget, it was announced that the NBCSP would be continued to include people turning 50, 55 and 65 years of age between January 2011 and December 2014.

If a person is eligible for screening, a pre-invitation letter followed by an invitation package that includes a free self-test FOBT kit and an information booklet is sent by mail. FOBTs detect small amounts of blood in faeces that may indicate the presence of abnormal growth in the bowel. The test is quick, easy and painless. It can be done at home and then sent to the program’s pathology laboratory for analysis. The laboratory sends the test result to the participant, their nominated doctor and the NBCSP Register.

From 2009 SA Health assumed responsibility for telephone follow-up of those South Australian NBCSP participants, in both the public and private sectors, with a positive FOBT who are not progressing through the screening pathway. The Metropolitan Referral Unit (MRU) based in the Southern Adelaide Local Health Network (LHN) undertakes this function. The MRU call centre is staffed by clinicians who are ideally placed to provide follow-up of NBCSP participants.

The Alternative Pathways pilot program for Aboriginal people living in SA and the Lyell McEwin Hospital pilot of draft colonoscopy accreditation standards were completed in June 2011. Both pilots were funded by the Commonwealth Department of Health and Ageing.

Participation

Figure 52 describes the participation rates of males and females aged 50, 55 and 65 years in Phase 2 of the NBCSP, 2008-2011. The participation rate is the proportion of the eligible Phase 2 population who returned a completed the FOBT.

In Australia, there was a statistically significant difference in participation between the sexes; with the female participation rate (41.2 per cent) being higher than that for men (36.0 per cent).

There was a statistically significant difference between Australia and South Australia with South Australians having higher participation that the overall Australian rate.
Faecal occult blood test positivity rate

Figure 53 describes the proportion of positive FOBT results out of all valid FOBT kits returned, that is, the FOBT positivity rate for males and females age 50, 55 and 65 years.

In Australia, the positivity rate for men (8.8 per cent) was 1.3 times that for women (7.0 per cent). Similarly, a greater proportion of South Australian males (9.3 per cent) recorded a positive FOBT result compared to females (7.1 per cent).

Primary health care practitioner follow-up rates

The proportion of people with a positive FOBT result and who subsequently visited a Primary Health Care Practitioner (PHCP) is referred to as the primary health care practitioner follow-up rate. PHCPs are classified as a general practitioner or other primary health care provider. This may include remote health clinics or specialists providing general practitioner services.

There were no significant differences in the proportion of men and women who sought follow up nor were there differences between the proportion of Australians or South Australians who sought follow up (Figure 54).

Figure 54 – Proportion of people with a positive Faecal Occult Blood Test who sought follow up with a primary health care practitioner, 2008-2011, South Australia and Australia by sex.

Overall diagnostic outcomes (including histopathology)

From the total number of positive FOBT tests received 0.5 per cent were confirmed as cancer and a further 2 per cent were suspected as cancer but were as yet confirmed in South Australia. Similar proportions were observed in Australia with 0.7 per cent of positive FOBT being confirmed as cancer with a further 2.3 per cent as yet to be confirmed (Table 35). Nationally, from the available NBCSP data, almost 80 per cent of bowel cancers removed during phase 2 were in the earliest two (out of four) stages of cancer spread.

Table 35 – Number and proportion of those who recorded a positive Faecal Occult Blood Test and the subsequent diagnosis, 2008-2011 for South Australia and Australia

<table>
<thead>
<tr>
<th>State</th>
<th>FOBT positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total positive FOBT</td>
</tr>
<tr>
<td>South Australia</td>
<td>Number 5 504</td>
</tr>
<tr>
<td></td>
<td>Per cent 52.3</td>
</tr>
<tr>
<td>Australia</td>
<td>Number 62 067</td>
</tr>
<tr>
<td></td>
<td>Per cent 48.4</td>
</tr>
</tbody>
</table>

(a) Does not include colonoscopies identified through Medicare claims, (b) Cancer suspected at colonoscopy but not yet confirmed by histopathology, (c) Based on numerator < 20 or denominator < 300; interpret with caution.

Future directions

During phase 3, the NBCSP will be expanded by the Commonwealth Government to include Australians turning 60 years of age from 2013 and those turning 70 years of age from 2015. Once these cohorts have commenced, screening for Australians aged 50, 55, 60, 65 and 70 years of age will be ongoing.

The department will continue to work with the Commonwealth Government on increasing access to screening for Aboriginal and Torres Strait Islander peoples, CALD communities, low socioeconomic status groups, and rural and remote participants.

3.6.3 Cervical cancer screening

The SA Cervix Screening Program (SACSP) is part of a joint initiative of the Australian and state and territory governments that aims to reduce the incidence of and mortality from invasive cancer of the cervix. The goal is to increase the proportion of women who are screened at appropriate intervals, and promote a high quality of screening and follow-up.

Australia maintains a relatively low incidence and mortality of cervical cancer compared with other countries, and this has been largely attributed to the organised approach of the cervical screening program and its successful implementation in 1991.

As reported by AIHW in 2010, cervical cancer remains the 18th most common cause of cancer-related death. Cervical cancer incidence and mortality both remain higher in Aboriginal and Torres Strait Islander women, with incidence more than twice, and mortality five times, that of non-Indigenous women.

Data registries are currently unable to collect Aboriginal and Torres Strait Islander status on participation by this group of women nationally, although there is evidence that this population group is under-screened and therefore remains a key priority group for targeted screening and follow-up in SA.
Trends in participation between major cities and inner regional areas compared with more remote areas shows that the women in more remote areas are more likely to be in the under-screened group. Participation rates also show differences across socioeconomic status, with a greater percentage of women from areas of higher socioeconomic status participating in the cervix screening program. A key focus of the SACSP in 2013 will be on increasing awareness of the importance of screening for women in rural and remote areas.

The 2010-11 average participation rate for cervix screening for South Australian women in the target population range (women aged 20-69 years) was 59.7 per cent. This represents a slight increase of 0.5 per cent from the 2009-10 participation rate (see Figure 55).

**Figure 55 – Cervical screening participation rate in South Australia 2010-2011**

![Cervical screening participation rate in South Australia 2010-2011](image)


The observed decrease in the participation rate across Australia is attributable to an increase in the number of women in the eligible population, rather than a decrease in the total number of women participating (see Figure 56).

**Figure 56 – Age standardised participation rates of eligible women aged 20-69 in National Cervix Screening Program.**

![Age standardised participation rates of eligible women aged 20-69 in National Cervix Screening Program.](image)

Public Health Action on Cervix Screening

A new marketing campaign for the SACSP is currently being developed for launch in 2013 and to promote Pap Awareness Week in May. The campaign will have a focus on engagement for younger women to increase and maintain participation in cervix screening.

With the introduction of the national Human Papillomavirus (HPV) Vaccination Program in Australia in 2007, the screening participation rate for young women aged 20-24 years has fallen by 4.6 per cent, in recent years, a trend that has been reflected internationally. While some claim this can be directly attributed to the introduction of the vaccine, there remains little research exploring this relationship.

A further initiative of the SACSP is for greater information and support for women with a disability. This group of women is also a priority as they are currently an under-screened population. Research has strongly indicated that women with disabilities are less likely than other women to participate in cervical screening. According to the Victorian population health survey of people with an intellectual disability, only 14.8 per cent of women aged 20-69 years were reported to have had a Pap smear in the last two years, compared with 71.1 per cent of women in the general Victorian population. The results of this research would be comparable in SA.

It is important that women with a disability are provided with information to make an informed decision about whether to have a Pap smear, and that the services they attend provide sensitive and holistic approaches to their overall healthcare. Through the SACSP grants program in 2012-13, there has been support to organisations for targeted services to women with a disability.

In order to address the declining rates of women participating in cervical screening, one of the strategies that was continued in 2012 is the partnership between the SACSP and SHine SA to provide training to nurses as Pap smear providers. This has been a successful model to increase the range of providers that women can access for screening.

The Pap Awareness Week campaign in 2012 consisted of media, posters, press ads, radio and promotional items. A new digital and social media component was also introduced. The campaign was strongly supported by a range of health promotion activities, including community events and the distribution of SA Health promotional and information materials to a wide range of stakeholders, campaign supporters and community health workers.

The SACSP collated data measuring the number of Pap smears pre, during and post the 2012 campaign. The program also compared data and campaign activities with the 2009-11 campaigns to assess the effectiveness of communications strategies for future planning:

> In the metropolitan area the average number of Pap smears per working day was 495, compared with 476 in 2011. The increase in the metropolitan areas can in part be attributed to Pap Awareness Week having a metropolitan focus in 2012 via media and small community grants.

> The statewide percentage increase in Pap smear screening rates from the pre-campaign period to during the campaign period was 6.39 per cent, compared with 7.02 per cent in 2011, 7.38 per cent in 2010 and 7.03 per cent in 2009. While the 2012 increase was slightly lower than previous years, any increase in screening activity is positive for the prevention of cervical cancer among women.
3.7 Injury

Injury has a major, but often preventable, impact on South Australia’s health. It affects South Australians of all ages, is the greatest cause of death in the first half of life, and leaves many with serious disability or long-term conditions. In public health practice injury usually means physical harm to a person’s body. Common types of physical injury are broken bones, cuts, brain damage, poisoning and burns45.

Physical injury results from harmful contact between people and objects, substances, or other things in their surroundings. Examples are being struck by a car, cut by a knife, bitten by a dog, or poisoned by inhaled petrol. Some physical injuries are the intended result of acts by people: harm of one person by another (assault, homicide etc.) or self-harm.

3.7.1 The state of injury in South Australia

In terms of the overall rate of hospital admissions due to injury, South Australia had a slightly lower than national average rate, with the difference not being statistically significant (1 844 versus 1 859 per 100 000 population: third highest). South Australia ranked similarly in relation to hospital admissions due specifically to transport-related injury (240 versus 245 per 100 000 population: third highest). However, in regards to several smaller categories of hospital admission, South Australia had relatively high rates46.

Consistent with reports in earlier years, South Australia had the nation’s highest rate of admissions for self-harm. The SA rate was higher than the national average rate to a statistically significant degree (151 versus 120 per 100 000 population).

South Australia had the nation’s highest rate of admissions for unintentional pharmaceutical poisoning, higher than the national average rate to a statistically significant degree (47 versus 29.5 per 100 000 population). This category included cases of drugs given or taken in error, and accidental over-dosage.

South Australia had the nation’s second highest rate of admissions for thermal-related injuries (smoke, fire, heat, hot substances), after the Northern Territory. The SA rate was higher than the national average rate to a statistically significant degree (e.g., 39 versus 27 per 100 000 population).

South Australia had rates of injury-related hospital admissions significantly higher than the national average for cases involving unintentional non-pharmaceutical poisoning (14 versus 11 per 100 000 population), and assault (116 versus 105 per 100 000 population), but had rates significantly lower than the national average for cases involving falls (632 versus 686 per 100 000 population) and involving ‘other unintentional injury’ (578 versus 599 per 100 000).

South Australia also had lower than the national average rate of hospital admissions with respect to drowning and near drowning (1.7 versus 2.5 per 100 000 population), and with respect to events of ‘undetermined intent’ (16 versus 26 per 100 000 population).
Public health action on injury – a focus on falls and fall injury prevention for older people

Falls are a common cause of injury and disability, and older people are those most affected. As South Australia’s population ages, the need increases for effective systems to identify who is at risk and to provide high-quality strategies to avoid injury in the community and within healthcare.

Injurious falls among people older than 65 years of age in the community and residential aged care facilities place significant and increasing demand on health services such as ambulance, emergency departments, hospitals and rehabilitation services. More than 10 000 admissions using over 100 000 acute bed days are now associated with an injurious fall.

Reducing the numbers of falls and fall-related injuries requires addressing environmental hazards, encouraging changes to people’s behaviours and beliefs and, most importantly, identifying and providing care to those with physical and health issues that may predispose them to falling, or to injury or harm should they fall.

The Departmental Falls Prevention Program works closely with programs based in each Local Health Network (LHN). Current collaborative effort is directed at training for health professionals, improving practice, raising recognition of the issue, and designing referral systems and linkage between services.

For Adelaide, referral pathways for doctors and practice nurses, emergency departments, ambulance officers, hospitals and others are established with directories of services and a single phone number 1300 0 FALLS (1300 0 32557) to provide advice. A standardised triage process ensures that the older person receives the correct service the first time, thus reducing the inadvertent duplication of services that occurred previously.

For those at high risk and complexity, SA Health currently has five geriatrician-led clinics across Adelaide. These clinics, and the equivalent services in Country Health SA LHN, are a key part of the developing geriatric and rehabilitation services, and provide comprehensive multidisciplinary assessment and treatment, often in partnership with community aged care services.

Each year additional online resources and training materials are developed. Teaching packages are in use for Falls Prevention Leaders to easily on-train other workers.

April is Falls Prevention Month, during which articles relating to the prevention of falls and harm from falls are run in newspapers, newsletters and other publications. These help to raise awareness and reduce some of the belief that falls are an inevitable part of ageing.

Outcomes

The program of training Falls Prevention Leaders is into its fourth year and over 300 staff have been trained and are being supported in their role.

During April packs including posters, consumer fact sheets and service directories were distributed across SA to approximately 150 organisations (hospital and community health services, aged care and other community services) for displays, staff training and education sessions.

There are differences between the intake and evaluation of community-based services offered by each LHN, which means that direct comparison is not possible; however, the effectiveness of these services can be attributed to the high rate of uptake of recommendations by clients and their families, and the evidence-based approach to treatment.
The falls prevention programs in the Central and Northern Adelaide LHNs provide a telephone assessment and service linkage function for high-risk older fallers, and maintain clinical staff for four falls assessment clinics. An analysis of 507 falls clinic clients indicates that there was a 73 per cent reduction in emergency department presentations, a 64 per cent reduction in hospital admission and a 22 per cent reduction in hospital bed days. In addition, call-outs to ambulance services for ‘treat not transport’ reduced by half.

In 2011-12, 1,735 older adults were referred to the Southern Community Falls Prevention team. Approximately 60 per cent were referred from hospitals, 30 per cent from GPs and 10 per cent from SA Ambulance Service and other health professionals. After triage, services offered included community day-therapy centre referral, in-home fall risk assessment and falls clinic assessment. There was a 78 per cent reduction in hospital admissions as a result of the in-home falls risk assessment and falls prevention clinic interventions. Duplication of services was avoided for 308 people, whose existing services were made aware of the fall and decline in mobility.

**Future directions**

A new National Safety and Quality Health Service Standard is called ‘Preventing Falls and Harm from Falls’. It outlines the standard of care against which health services will be assessed and accredited from 2013.

The SA Health Fall and Fall Injury Prevention and Management Policy Directive, Guideline and Toolkit resource materials were released in April 2011 and are currently under review.

As the structure and functions of the LHNs and Medicare Locals are embedded, linkages between falls prevention services, Primary Health Care Services, fracture clinics, and emergency and community-based services will be strengthened.

A range of training opportunities for health workers will include workshops, face-to-face interaction, e-learning packages and web-based information, delivered across the state. Links with the university sector in the development and delivery of training resources, such as optimum ways to reduce falls among people with dementia or delirium, will be explored.

Protocols for management of an older person who has fallen are under review in the light of emerging evidence of increases in brain injury from falls.
3.8 Diabetes

Diabetes is a metabolic disease in which high blood glucose levels result from defective insulin secretion or insulin production, or both. The most common form is type 2, in which there are reduced levels of insulin, or the inability of body cells to properly use insulin\(^47\).

Diabetes prevalence is projected to increase two to threefold over the next 25 years because of expected increases in the prevalence of obesity, along with other demographic changes\(^48\). If diabetes continues to rise at the current rates, up to three million Australians over the age of 25 years will have diabetes by the year 2025. For type 2, this is likely driven by rising obesity, the ageing population, dietary changes, and sedentary lifestyles. Obesity is a major contributor to type 2 diabetes with estimates showing that eliminating obesity from the population can potentially reduce the incidence of type 2 diabetes by over 40 per cent\(^47\).

Diabetes is a public health concern because it is strongly linked to the availability of energy dense, nutrition poor foods which characterise what has become to be known as obesogenic environments.

The state of diabetes in South Australia

The 2011-12 AHS defines the presence of diabetes as those persons who reported having been told by a doctor or nurse that they had diabetes and that it was current and long-term; that is, their diabetes was current at the time of interview and had lasted, or was expected to last, six months or more. Therefore this data represents people with Type 1, Type 2 and unknown diabetes, but does not include people who currently had, or was previously diagnosed with gestational diabetes. There were a further 111,500 Australians, and 7,300 South Australians who reported they had diabetes but that it was not current at the time of interview. The data presented here are for people of all ages.

The results indicated that South Australians had a higher proportion of people currently diagnosed with diabetes (4.7 per cent) compared to all Australians (4.0 per cent). Specifically, there were a higher proportion of South Australian males with diabetes (5.9 per cent) compared to Australian males (4.3 per cent), however there were no differences in females (3.6 per cent). This data is presented in Figure 57.

**Figure 57 – Proportion of people with self-reported diagnosed Diabetes.**

![Proportion of people with self-reported diagnosed Diabetes](source: Australian Health Survey: First Results, 2011-12 – South Australia.)
SAMSS monitors the proportion of South Australian adults aged 18 years and over who had ever been told by a doctor they had diabetes. Accordingly, this sample includes people with Type 1, Type 2, gestational and unknown types of diabetes. Since 2002 the proportion of South Australian adults with diabetes has increased as can be noted in Figure 58. In 2012, the proportion of South Australian adults with diabetes was 8.1 per cent.

Figure 58 – Proportion of South Australian adults aged 18 years and over with diabetes, July 2002 – December 2012.

Source: SAMSS 2012.

Figure 59 shows that females had a higher proportion of diabetes (8.5 per cent) compared to males (7.7 per cent). The female sample includes those with gestational diabetes, and may be a factor in the higher proportion of females with diabetes compared to males.

Figure 59 – Proportion of South Australian adults aged 18 years and over with diabetes by sex, December 2012.

Source: SAMSS 2012.
The proportion of South Australians with diabetes increases with age as shown in Figure 60 below. 16.8 per cent of people aged 60 years and over reported having diabetes compared to 6 per cent of those aged 40-59 years and 3.1 per cent of those aged 18 to 30 years.

Figure 60 – Proportion of South Australian adults aged 18 years and over with diabetes by age group, December 2012.

The proportion of people with diabetes increased as socioeconomic disadvantage increased as can be seen in Figure 61. Of those in the highest SEIFA category, 5.9 per cent reported having diabetes, compared to 10.1 per cent in the lowest SEIFA area.

Figure 61 – Proportion of South Australian adults aged 18 years and over with diabetes by SEIFA, January 2008 – December 2012.

Source: SAMSS 2012.
South Australians residing in the Adelaide – Central and Hills region reported the lowest proportion of diabetes (5.8 per cent). People in the Barossa-Yorke-Mid North region reported the highest proportion of people with diabetes (9.0 per cent; Figure 62).

Figure 62 – Proportion of South Australian adults aged 18 years and over with diabetes by SA4 region, January 2008 – December 2012.

Source: SAMSS 2012.
3.9 Respiratory diseases

Respiratory diseases are a leading cause of illness, disability and mortality in human populations around the world. Common respiratory diseases include influenza, pneumonia, asthma and chronic obstructive pulmonary disease (COPD- comprising of both chronic bronchitis and emphysema).

The respiratory diseases addressed in this section include asthma and COPD.

Asthma

The 2011-12 Australian Health Survey (AHS) assessed the proportion of people with self-reported asthma which was current. The data presented here are for people of all ages. The results indicated that South Australians had a higher proportion of people with asthma (10.8 per cent) compared to all Australians (10.2 per cent) as shown in Figure 63.

Figure 63 – Proportion of people with self-reported diagnosed asthma

Source: Australian Health Survey: First Results, 2011-12 – South Australia.
State-wide Comparisons

SAMSS monitors the proportion of South Australian adults aged 18 years and over who reported currently having asthma. Since 2002 the proportion of South Australian adults with asthma has decreased as can be noted in Figure 64. In 2012, the proportion of South Australian adults with asthma was 13.2 per cent.

Figure 64 – Proportion of South Australian adults aged 18 years and over with asthma, July 2003 – December 2012.


In 2012, females were more likely to have asthma compared to males as shown in Figure 65 below. 15.2 per cent of females reported having asthma compared to 11.1 per cent of males.

Figure 65 – Proportion of South Australian adults aged 18 years and over with asthma by sex, December 2012.

People aged 18 to 39 years were most likely to have asthma (14.8 per cent) compared to those aged 40 to 59 years (12 per cent) and 60 years and over (12.8 per cent) as shown in Figure 66.

Figure 66 – Proportion of South Australian adults aged 18 years and over with asthma by age group, December 2012.

The proportion of people with asthma increased as the level of socioeconomic disadvantage increased as shown in Figure 67. Those in the lowest SEIFA reported the highest proportion of people with asthma (14.8 per cent) compared to those in the highest SEIFA (10.8 per cent).

Figure 67 – Proportion of South Australian adults aged 18 years and over with asthma by SEIFA, January 2008 – December 2012.
People who reside in the Adelaide – West region reported the lowest proportion of people with asthma (11.4 per cent). The Barossa-Yorke-Mid North (15.4 per cent) and South Australia – Outback (14 per cent) regions reported the highest proportion of people with asthma (Figure 68).

**Figure 68** – Proportion of South Australian adults aged 18 years and over with asthma by SA4 region, January 2008 – December 2012.

![Figure 68](image)


**Children’s Asthma**

SAMSS has monitored the proportion of children aged 2 to 17 years with asthma since 2003. In the case whereby the respondent is under 16 years of age, the interview is conducted by proxy (parent or guardian). Since 2003 the proportion of children with asthma has decreased as shown in Figure 69. In 2011, the proportion of children with asthma was 12 per cent.

**Figure 69** – Proportion of South Australian children aged 2 to 17 years with asthma, January 2003 – December 2011.

![Figure 69](image)

Source: SAMSS, 2011.
Chronic Obstructive Pulmonary Disease (COPD)

The other respiratory disease reported here is Chronic Obstructive Pulmonary Disease (COPD). The 2011-12 AHS defines the proportion of people with COPD as those currently with the condition, including those with bronchitis and emphysema. The data presented here represents people of all ages. There was no difference in the proportion of people with COPD in South Australia compared to all Australians (2.4 per cent; Figure 70).

Figure 70 – Proportion of people with self-reported diagnosed Chronic Obstructive Pulmonary Disorder (COPD).

Source: Australian Health Survey: First Results, 2011-12 – South Australia.

SAMSS monitors the proportion of South Australian adults aged 18 years and over with COPD including those with chronic bronchitis and emphysema. Since 2005 the proportion of South Australian adults with COPD has decreased as can be noted in Figure 71. In 2012, the proportion of South Australians with COPD was 4.2 per cent.

Figure 71 – Proportion of South Australian adults aged 18 years and over with COPD, January 2005 – December 2012.

Females had a higher proportion of COPD (4.7 per cent) compared to males (3.8 per cent) as shown in Figure 72.

**Figure 72 – Proportion of South Australian adults aged 18 years and over with COPD by sex, December 2012.**


The proportion of people with COPD increases with age as shown in Figure 73 below. People aged 60 years and over had the highest proportion of COPD (5.9 per cent), while those aged 18 to 39 years had the lowest proportion of COPD (2.8 per cent).

**Figure 73 – Proportion of South Australian adults aged 18 years and over with COPD by age group, December 2012.**

The proportion of people with COPD increases as the level of socioeconomic disadvantages increases as shown in Figure 74 below. Those in the lowest SEIFA reported the highest proportion of COPD (5.5 per cent) while those in the highest SEIFA reported the lowest proportion of COPD (3.5 per cent).

**Figure 74 – Proportion of South Australian adults aged 18 years and over with COPD by SEIFA, January 2008 – December 2012.**


People residing in the Adelaide – Central & Hills (3.8 per cent) and Adelaide – South regions (4.1 per cent) had the lowest proportion of people with COPD. People residing in the Adelaide – West and South Australia – Outback regions had the highest proportion of people with COPD (4.8 per cent; Figure 75).

**Figure 75 – Proportion of South Australian adults aged 18 years and over with COPD by SA4 region, January 2008 – December 2012.**

3.10 Musculoskeletal diseases

A group of diseases that includes arthritis, osteoarthritis and osteoporosis. Osteoarthritis is a degenerative joint condition affecting the weight-bearing joints such as the hips, knees and ankles as well as the hands and spine. In the initial stages pain occurs in the joints during and after activity, but as the condition progresses pain may be experienced from minimal movement or during rest. Osteoporosis is a condition whereby there is a progressive loss of bone density and decrease in the strength of the skeleton with a resultant risk of fracture.

The musculoskeletal diseases addressed in this section include arthritis and osteoporosis.

Arthritis

The 2011/12 Australian Health Survey (AHS) assessed the proportion of Australians (of all ages) who reported currently having arthritis, including those who had rheumatoid arthritis or osteoarthritis. The results found that South Australians had a higher proportion of people with current arthritis (16.9 per cent) compared to all Australians (14.8 per cent). Furthermore both South Australian males and females had a higher proportion of current arthritis compared to their national counterparts as shown in Figure 76.

Figure 76 – Proportion of people with self-reported diagnosed arthritis.

Source: Australian Health Survey: First Results, 2011-12 – South Australia.
SAMSS have monitored the proportion of South Australian adults aged 18 years and over who reported currently having arthritis which included rheumatoid arthritis and osteoarthritis. Since 2002 the proportion of South Australian adults with arthritis has not changed as can be noted in Figure 77. In 2012, 21.6 per cent of South Australian adults reported having arthritis.

Figure 77 – Proportion of South Australian adults aged 18 years and over with arthritis, July 2002 – December 2012.


In 2012, more females reported having arthritis (25.8 per cent) compared to males (17.1 per cent) as shown in Figure 78.

Figure 78 – Proportion of South Australian adults aged 18 years and over with arthritis by sex, December 2012.

The proportion of South Australians with arthritis increases with age as shown in Figure 79. In 2012, people aged 60 years and over were most likely to have arthritis (44.9 per cent) compared to all other age groups.

Figure – 79 Proportion of South Australian adults aged 18 years and over with arthritis by age, December 2012.


The proportion of people with arthritis increases as the level of socioeconomic disadvantage increases as shown in Figure 80 below. People in the lowest (26.0 per cent), low (22.5 per cent) and middle (21.8 per cent) SEIFA areas reported higher levels of arthritis, above the state-wide prevalence of 21.6 per cent. However the proportion of people with arthritis in the high (20.1 per cent) and highest (19.6 per cent) SEIFA groups were below the state-wide average.

Figure – 80 Proportion of South Australian adults aged 18 years and over with arthritis by SEIFA, January 2008 – December 2012.

People residing in the Barossa-Yorke- Mid North region reported the highest prevalence of arthritis (26.3 per cent) compared to those living in the Adelaide-Central & Hills region who reported the lowest prevalence of arthritis (19.5 per cent) as shown in Figure 81.

Figure 81 – Proportion of South Australian adults aged 18 years and over with arthritis by SA4 region, January 2008 – December 2012.

Osteoporosis
The 2011-12 AHS assessed the proportion of Australians with self-reported osteoporosis. The results also included those people who reported having osteopenia. The data presented here represents people of all ages. The results found that South Australians had a higher proportion of people with osteoporosis (4.0 per cent) compared to all Australians (3.3 per cent). There were no difference between male respondents, however South Australian females had a higher proportion of osteoporosis (6.7 per cent) than Australian females (5.3 per cent). This data is presented in Figure 82.

Figure 82 – Proportion of people with self-reported diagnosed osteoporosis.
SAMSS monitors the proportion of South Australian adults aged 18 years and over with osteoporosis. Since 2002 the proportion of South Australian adults with osteoporosis has increased as can be noted in Figure 83. In 2012, the proportion of adults with osteoporosis was 4.8 per cent.

Figure 83 – Proportion of South Australian adults aged 18 years and over with osteoporosis, July 2002 – December 2012.

In 2012, a greater proportion of the population who indicated they had been diagnosis with osteoporosis were female (7.7 per cent) as shown in Figure 84 below.

Figure 84 – Proportion of South Australian adults aged 18 years and over with osteoporosis by sex, December 2012.
The majority of adults in South Australian with osteoporosis were aged 60 years and above (12.7 per cent). There was no data available for people aged 18 to 39 years. The proportion of people with osteoporosis by age groups is shown in Figure 85.

**Figure 85 – Proportion of South Australian adults aged 18 years and over with osteoporosis by age group, December 2012.**

*insufficient cases for analysis.


People who live in the low SEIFA area reported the highest prevalence of osteoporosis (4.9 per cent), similar to that of those in the lowest SEIFA (4.8 per cent) and middle SEIFA areas (4.7 per cent). Those in the high (4.4 per cent) and highest SEIFA areas (4.2 per cent) had a lower prevalence of osteoporosis as shown in Figure 86.

**Figure 86 – Proportion of South Australian adults aged 18 years and over with osteoporosis by SEIFA, January 2008 – December 2012.**

The proportion of people with osteoporosis by SA4 region was similar across all SA4 regions. The highest proportion was reported in the Adelaide-West region (5.0 per cent) while the lowest proportion was reported in the South Australia – Outback region (4.0 per cent) as shown in Figure 87.

Figure 87 – Proportion of South Australian adults aged 18 years and over with osteoporosis by SA4 region, January 2008 – December 2012.

3.11 Health Risk Factors

3.11.1 Smoking

Tobacco smoking is one of the leading preventable causes of illness and death in Australia. Three South Australians die every day from tobacco-related illness, and an estimated $2.39 billion is lost to the state’s economy each year in health costs and lost productivity related to smoking.

Despite a reduction in smoking prevalence in South Australia over the last 20 years, declines have not fallen uniformly across the population. South Australian smoking data shows the highest smoking prevalence is in the most disadvantaged quintile of the population.

The 2010 National Drug Strategy Household Survey assessed the proportion of people aged 14 years and over who reported being a current smoker. A current smoker was one that reported smoking daily, weekly, and less than weekly. The results found that South Australians (17.4 per cent) had a lower proportion of current smokers compared to all Australians (18.0 per cent) as shown in Figure 88.
Figure 88 – Proportion of people aged 14 years and over who reported being a current smoker, 2010.

State-wide Comparisons

The Health Omnibus Survey (HOS) has monitored the proportion of current smokers in South Australia aged 15 years and over since 2002. Current smokers were classified as those who reported smoking daily, weekly and less than weekly. Since 2002, the proportion of South Australians aged 15 years and over who reported being a current smoker decreased as can be seen in Figure 89. In 2011, the proportion of South Australians aged 15 years and over who reported being a current smoker was 17.6 per cent.

Figure 89 – Proportion of South Australians aged 15 years and over who reported being a current smoker, 2002-2011.

Source: South Australian Health Omnibus Survey 2011.
In 2011 there were a higher proportion of males who reported being a current smoker (20.2 per cent) compared to females (15.2 per cent) as shown in Figure 90.

**Figure 90 – Proportion of South Australians aged 15 years and over who reported being a current smoker by sex, 2011.**

![Bar chart showing the proportion of current smokers by sex in 2011.]

Source: South Australian Health Omnibus Survey 2011.

South Australians aged 30 to 44 years reported the highest proportion of people being a current smoker (23.2 per cent). Those aged 60 years and over reported the lowest proportion of people being a current smoker (7.8 per cent) as shown in Figure 91.

**Figure 91 – Proportion of South Australians aged 15 years and over who reported being a current smoker by age group, 2011.**

![Bar chart showing the proportion of current smokers by age group in 2011.]

Source: South Australian Health Omnibus Survey 2011.
The proportion of people who report being a current smoker increases as the level of socioeconomic disadvantage increases as shown in Figure 92. Of people in the lowest SEIFA category, 23.9 per cent reported being a current smoker compared to 8.9 per cent of those in the highest SEIFA category.

**Figure 92 – Proportion of South Australians aged 15 years and over who reported being a current smoker by SEIFA, 2011.**

Source: South Australian Health Omnibus Survey 2011.

South Australians living in the Adelaide-Central & Hills region reported the lowest proportion of current smokers (8.7 per cent) as shown in Figure 93. The highest proportion of current smokers resided in the South Australia-Outback region (27.6 per cent).

**Figure 93 – Proportion of South Australians aged 15 years and over who reported being a current smoker by SA4 region, 2011.**

Source: South Australian Health Omnibus Survey 2011.
Reducing the prevalence of smoking

The South Australian Tobacco Control Strategy 2011-2016 reflects priorities and initiatives to reduce smoking prevalence and its burden, through both increasing the number of people quitting smoking and deterring people from taking up smoking.

Two key targets of the strategy are to reduce the smoking rate among young people aged 15-29 years to 16 per cent, and among the general population to 15 per cent, by 2016.

The following key issues are being addressed through the strategy: encouraging smokers to quit; reducing smoking uptake, especially by young people, by de-normalising smoking; addressing exposure to passive smoking by increasing the number of outdoor smoke-free areas and events; focusing on reducing smoking among high-prevalence groups including Aboriginal people, those with a mental illness and the socioeconomically disadvantaged; and actively enforcing the **Tobacco Products Regulation Act 1997** to maximise compliance and deter breaches, particularly in regard to access to tobacco by children.

Currently there are a number of initiatives to decrease the prevalence of smoking:

**Aboriginal smoking cessation project**

The Tackling Smoking initiative is part of the National Partnership Agreement on Closing the Gap in Indigenous Health Outcomes. The aim of the initiative is to reduce smoking and the associated burden of tobacco-related disease among Aboriginal people in SA. Key activities conducted through this initiative include implementation of the next phase of the social marketing campaign ‘Give up Smokes for Good’ (which features 12 nationally and locally recognised Aboriginal ambassadors) across five regions in SA, continuation of Tackling Smoking teams in three Aboriginal community-controlled health services, and delivery of a range of community-level health promotion strategies and cessation support activities.

**Smoking cessation advertising campaigns**

Smoking cessation mass media campaigns to encourage smokers to quit and ex-smokers to stay quit are a key strategy to reduce smoking prevalence. A suite of television and online advertisements to raise awareness of the harms of smoking and encourage smokers to quit aired in 2011 and 2012.

**Quit smoking support services**

Quit SA provides quit smoking counselling and support services for smokers through the Quitline callback and referral services and Quit SA website ([www.quitsa.org.au](http://www.quitsa.org.au)). Quit SA also provides tobacco cessation support to community settings accessible to people with mental illness, prisoners and those who are socioeconomically disadvantaged.

**Outcomes**

- Following a period of stable rates for six years, smoking rates among people aged 15 years and older in SA declined significantly between 2010 and 2011, from 20.5 per cent to 17.6 per cent.
- Smoking prevalence for young people aged 15-29 years also declined significantly, from 22.9 per cent in 2010 to 17.6 per cent in 2011.
- The rate of smoking among the two most disadvantaged quintiles declined significantly between 2010 and 2011, from 26.3 per cent to 23.0 per cent.
- From 31 May 2012, new legislation made covered public transport waiting areas, and within 10 metres of public playground equipment, become smoke-free. In addition, certain organisations can apply to have an outdoor area or event formally declared smoke-free.
- Smoking among pregnant women declined significantly, from 15.9 per cent in 2009 to 13.5 per cent in 2010.

**Future directions**

The South Australian Tobacco Control Strategy 2011-2016 will guide South Australian tobacco control initiatives over the next three to four years. To reduce the promotion of tobacco products at retail outlets, the temporary exemption on the ban of tobacco products at specialist tobacconists ends on 31 December 2014.
Smoking Cessation

Issues
In 2006 the South Australian Dental Service (SADS), introduced a ‘chairside’ smoking cessation program in partnership with Quit SA. Tobacco is the single biggest cause of premature death, disease and disability in Australia. Smoking has a profound effect on oral health, with implications ranging from stained teeth, halitosis, taste changes and smoker’s palate to periodontal disease and potentially fatal oral cancer. Studies show that encouragement and brief advice from health professionals is appreciated and will often lead to action – dental teams are in a unique and strong position to help many smokers to stop.

Current programs and initiatives
As SA's major public dental provider, SADS is well placed to introduce a clinic-based smoking cessation support program for adult clients. Dental staff deliver quality support that is effective and sustainable by providing to clients a referral pathway to Quit SA. They are trained in brief intervention techniques supported by an electronic dropdown prompt in each patient’s record, and have access to quality quit-smoking resources. Staff engage in a brief conversation with clients about their smoking and offer a referral to Quit SA if indicated.

Outcomes
Since the program began, over 12,000 adult smokers have received brief advice on quitting smoking.

3.11.2 Alcohol misuse

National Comparisons
The 2010 National Drug Strategy Household Survey assessed the proportion of people aged 14 years and over who were considered to be at risk of alcohol related harm over a lifetime, and from a single drinking session using the 2009 National Health and Medical Research Council (NHMRC) Australian guidelines. To be considered at risk of alcohol related harm over a life time, a person must report consuming on average, two or more standard drinks per day over the previous 12 months. The results found that South Australians had a lower proportion of people at risk of lifetime harm (19.3 per cent) compared to all Australians (20.1 per cent) as shown in Figure 94.

Figure 94 – Proportion of people aged 14 years and over at risk of alcohol related harm over a lifetime, 2010.

To be considered at risk of alcohol related injury on a single occasion a person must report consuming in excess of four standard drinks on a single occasion of drinking. The following presents the proportion of South Australians who drink at this level on at least one occasion in the last 12 months. The results found that South Australians had a lower proportion of people at risk of alcohol related harm from a single drinking occasion (38.4 per cent) compared to all Australians (39.7 per cent) as shown in Figure 95.

**Figure 95 – Proportion of people aged 14 years and over at risk of alcohol related harm from a single drinking occasion, 2010.**

State-wide Comparisons

HOS has monitored the lifetime and single occasions risk of alcohol related harm since 2011 of South Australians aged 15 years and over using the 2009 NHMRC guidelines. To be considered at risk of alcohol related harm over a life time, a person must report consuming on average, two or more standard drinks per day over the previous 12 months. To be considered at risk of alcohol related injury on a single occasion a person must report consuming in excess of four standard drinks on a single occasion of drinking. The following presents the proportion of South Australians who drink at this level on at least one occasion in the last 12 months. In 2012, the proportion of South Australians aged 15 years and over at risk of lifetime alcohol related harm was 22.5 per cent. The proportion of South Australians aged 15 years and over who are at risk of lifetime alcohol related harm is shown in Figure 96.
The proportion of South Australians aged 15 years and over who are at risk of alcohol related harm from a single drinking occasion is shown in Figure 97. In 2012, the proportion of South Australians aged 15 years and over at risk of alcohol related harm from a single drinking occasion was 46.4 per cent.

The proportion of males who are at risk of lifetime alcohol related harm (33.7 per cent) is greater than females (11.7 per cent) as shown in Figure 98.

**Figure 98 – Proportion of South Australians aged 15 years and over at risk of alcohol related harm over a lifetime by sex, 2012.**

![Graph showing the proportion of South Australians at risk of lifetime alcohol related harm by sex, 2012.](image)


The proportion of males who are at risk of alcohol related harm from a single drinking occasion (58.5 per cent) is greater than females (34.9 per cent) as shown in Figure 99.

**Figure 99 – Proportion of South Australians aged 15 years and over at risk of alcohol related harm from a single drinking occasion by sex, 2012.**

![Graph showing the proportion of South Australians at risk of single occasion alcohol related harm by sex, 2012.](image)

South Australians aged 20 to 29 years (29.4 per cent) and 50 to 59 years (29.8 per cent) had the highest proportion of people at risk of lifetime alcohol related harm. Whilst those aged 15 to 19 years of age had the lowest proportion of people at risk of lifetime harm (8.6 per cent) it should be noted these estimates have a relative standard error of 25 per cent-50 per cent and should be interpreted with caution. Figure 100 shows the proportion of South Australians at risk of lifetime alcohol harm by age group.

Figure 100 – Proportion of South Australians aged 15 years and over at risk of alcohol related harm over a lifetime by age group, 2012.

*Estimates have a relative standard error of 25 per cent to 50 per cent and should be used with caution.

Figure 101 shows the proportion of South Australians at risk of alcohol related harm from a single drinking occasion by age group. Those aged 20 to 29 years had the highest proportion (67.2 per cent) of people at risk of alcohol related harm from a single drinking occasion, compared to those aged 60 years and over who had the lowest proportion (23.9 per cent).

Figure 101 – Proportion of South Australians aged 15 years and over at risk of alcohol related harm from a single drinking occasion by age, 2012.

*Estimates have a relative standard error of 25 per cent to 50 per cent and should be used with caution.
The proportion of South Australians at risk of alcohol related harm over a lifetime by SEIFA is shown in Figure 102. Those in the low SEIFA category had the highest proportion of people at risk of lifetime harm (24.4 per cent), while those in the middle SEIFA category had the lowest proportion of people at risk of lifetime harm (18.5 per cent).

**Figure 102 – Proportion of South Australians aged 15 years and over at risk of alcohol related harm over a lifetime by SEIFA, 2012.**


The proportion of South Australians at risk of alcohol related harm from a single drinking occasion is shown in Figure 103. People in the high SEIFA category had the greatest proportion of people at risk (51.4 per cent) compared to those in the lowest SEIFA category who had the lowest proportion of people at risk (42.0 per cent).

**Figure 103 – Proportion of South Australians aged 15 years and over at risk of alcohol related harm from a single drinking occasion by SEIFA, 2012.**

The risk of lifetime alcohol harm across SA4 regions was generally consistent as shown in Figure 104. However, those who reside in the South Australia-Outback regions reported the highest proportion of people at risk of lifetime alcohol harm (37.0 per cent).

**Figure 104 – Proportion of South Australians aged 15 years and over at risk of alcohol related harm over a lifetime by SA4 region, 2012.**

![Proportion of South Australians aged 15 years and over at risk of alcohol related harm over a lifetime by SA4 region, 2012.](image)


The risk of alcohol harm from a single drinking occasion by SA4 is shown in Figure 105. Over half of the people in the Adelaide-Hills & Central (51.5 per cent), Adelaide-West (50.5 per cent) and South Australia-Outback (53.7 per cent) regions were found to be at risk of harm. Those in the Barossa-Yorke-Mid North region reported the lowest proportion of people at risk of alcohol related harm from a single drinking occasion (41.7 per cent).

**Figure 105 – Proportion of South Australians aged 15 years and over at risk of alcohol related harm from a single drinking occasion by SA4 region, 2012.**

![Proportion of South Australians aged 15 years and over at risk of alcohol related harm from a single drinking occasion by SA4 region, 2012.](image)

Reducing harmful alcohol consumption

Alcohol misuse can result in a range of social harms, including a substantial impact on individuals, families, communities, and community services such as health, emergency and police services. Over the last 50 years, initiation into drinking alcohol has occurred at an increasingly younger age, and this has increased the likelihood of people experiencing both short- and long-term harms from problematic alcohol consumption.

Target 81 of SASP is to: ‘reduce the proportion of South Australians who drink at risky levels by 30 per cent by 2020’. SA Health implemented a range of evidence-based and population-wide initiatives between January 2011 and December 2012 to achieve that target:

**South Australian Alcohol and Other Drug Strategy 2011-2016**

The South Australian Alcohol and Other Drug Strategy 2011-2016 was released in November 2011. It is a whole-of-government commitment developed by SA Health and SA Police, and contains 60 priority actions and associated lead agencies across government. A strong focus is on key indicators, data collection and progress monitoring. An objective of the strategy is to ‘reduce the rate of alcohol-related harm’.

**‘Drink too much you’re asking for trouble’ campaign**

This campaign was launched in April 2011 as a strategy to assist in addressing alcohol-related harms among males aged 18-39 years and females aged 18-29 years (the identified age groups with particularly high-risk drinking behaviour).

The campaign’s objectives are to raise awareness of the serious health and safety, legal and social consequences of drinking too much alcohol, and to reduce the acceptance of public drunkenness. The campaign involves the use of television, radio, online, outdoor and in-venue advertising to communicate its campaign messages.

To date, commissioned tracking research has shown that, among the target audience, awareness of harms associated with intoxication has increased from 44 per cent to 60 per cent, and agreement that it is unacceptable to be drunk in public has risen from 47 per cent to 50 per cent.

**Early Intervention Pilot Program (EIPP)**

The EIPP initiative under the Australian Government’s National Binge Drinking Strategy was operational from 1 August 2010 to 30 June 2012. It targeted young people aged 10-17 years who had been detected for offences related to alcohol involving possession, consumption and intoxication. The program enabled police to divert the target group from the criminal justice system and concurrently refer them to the health system for a health assessment and alcohol information session with a qualified health professional.

During the pilot period 171 young people were diverted through the program. The Office of Crime Statistics and Research is finalising the evaluation of the EIPP, and this will assist consideration of future responses to young people and alcohol-related issues.

**Aboriginal primary prevention project on alcohol**

From 2011, SA Health has funded the Aboriginal Health Council of South Australia Inc. to undertake a needs assessment to identify a preferred suite of evidence-based prevention strategies to address alcohol-related harm among the South Australian Aboriginal community, with a focus on primary prevention.

**Primary health screening project on alcohol**

In early 2012 the Alcohol and Drug Information Service (ADIS) commenced the use of an alcohol assessment tool for members of the public who call the ADIS support line. Work commenced in 2012 on linking this program to some key health services. In particular, there are plans to approach hospital emergency departments and GP Plus sites about trialling this assessment tool for patients with alcohol-related issues.
Collection of wholesale alcohol data

In 2012 Consumer and Business Services confirmed their commitment to the collection of wholesale alcohol data. The establishment of systems to facilitate this is planned for 2013. The collection of such data is important for accurate measurement of alcohol consumption in the community and is the subject of a priority action in the South Australian Alcohol and Other Drug Strategy 2011-2016.

Monitoring alcohol consumption patterns

Data from questions in the Health Omnibus Survey (see below) are purchased on an annual basis from Harrison’s Research. The questions cover attitudes to public drunkenness and the frequency of alcohol consumption. The alcohol consumption data are used to monitor the progress of the alcohol target in SASP on an annual basis.

Future directions

In 2013-14 SA Health (in partnership with SA Police) will oversee the implementation of the South Australian Alcohol and Other Drug Strategy 2011-2016, including the 16 priority actions under the objective focused on reducing alcohol-related harms. In accordance with the public health evidence, there will be an assessment of the feasibility and likely effects of introducing measures to prohibit excessive discounting of alcohol and restrict the availability of alcohol in some circumstances. There will also be an emphasis on supporting inter-agency collaboration on strategies that foster safe communities and healthy neighbourhoods in accordance with the South Australian Government’s seven strategic priorities. Additionally, this period will see the completion of a review of the Public Intoxication Act 1984 to provide for the apprehension and care of persons in a public place under the influence of alcohol or other drugs.

3.11.3 Overweight and Obesity

Around the world there is widespread recognition of the significant impact of overweight and obesity on the health and wellbeing of the population. The numbers of people in the unhealthy weight range is rising so rapidly in many countries that efforts are now focused only on stemming the rate of growth or, at best, maintaining current levels across populations.

Target 82 of SASP on healthy weight seeks to increase by five percentage points the proportion of South Australian adults and children with healthy weight by 2017. This reflects the major importance of obesity as a contributor to chronic disease and reduced productivity.

In addition, under the National Partnership Agreement on Preventive Health, targets on fruit and vegetable consumption, physical activity, weight for adults and children, and adult smoking rates have also been set.

SA Health has lead responsibility for SASP Target 82. At baseline (2009), 39.4 per cent of adults were in the healthy weight range, with the target requiring 44.4 per cent by 2017. In 2012, 38.9 per cent of adults were in the healthy weight range (less than in 2009). In addition, also at baseline, 75.2 per cent of children aged 5-17 years were in the healthy weight range, with the target requiring 80.2 per cent by 2017. In 2012, 74.2 per cent of children were in the healthy weight range. These current trends reflect the complexities of preventing overweight and obesity.

The 2011-12 AHS assessed the proportion of Australian adults aged 18 years and over who were overweight or obese as classified by having a Body Mass Index (BMI) of 25 or above. BMI was calculated using measured height and weight, and therefore this data excludes 205 500 South Australians as they did not have their measurements taken.

The results found that South Australians had a higher proportion of people who were overweight or obese (67.1 per cent) compared to all Australians (63.4 per cent) as shown in Figure 106.
Figure 106 – Proportion of adults aged 18 years and over who are measured as overweight or obese.

Source: Australian Health Survey: First Results, 2011-12 – South Australia.

SAMSS monitors the proportion of South Australian adults aged 18 years and over who were overweight or obese. Respondents were classified as overweight or obese if they had a BMI of 25 kg/m² or more as calculated using self-reported height and weight. Since 2002 the proportion of South Australian adults who were overweight or obese increased as can be noted in Figure 107. In 2012, the proportion of South Australians who were overweight or obese was 59.0 per cent.

Figure 107 – Proportion of South Australian adults aged 18 years who are overweight or obese, July 2002 – December 2012.

In 2012, there were a higher proportion of males (67.1 per cent) who were overweight or obese compared to females (51.0 per cent) as shown in Figure 108.

**Figure 108 – Proportion of South Australian adults aged 18 years who are overweight or obese by sex, December 2012.**

![Bar chart showing proportion of South Australian adults aged 18 years who are overweight or obese by sex, December 2012.](image)

*Source: SAMSS, 2012.*

South Australians aged 45 to 64 years of age reported the highest prevalence of overweight or obesity (68.2 per cent), while those aged 18 to 29 years reported the lowest prevalence (41.4 per cent) as shown in Figure 109.

**Figure 109 – Proportion of South Australian adults aged 18 years who are overweight or obese by age group, December 2012.**

![Bar chart showing proportion of South Australian adults aged 18 years who are overweight or obese by age group, December 2012.](image)

*Source: SAMSS, 2012.*
South Australians in the lowest SEIFA reported the highest prevalence of overweight or obesity of 66.2 per cent.

People in the highest SEIFA area were the only group to report a prevalence of overweight or obesity below the statewide average (59.0 per cent) of 50.4 per cent. The proportion of overweight and obesity by SEIFA area is shown in Figure 110.

Figure 110 – Proportion of South Australian adults aged 18 years who are overweight or obese by SEIFA, December 2012.

People residing in the Barossa-Yorke-Mid North regions reported the highest prevalence of overweight and obesity (65.9 per cent). Other regional areas also reported a high prevalence of overweight and obesity. Within metropolitan regions, the Adelaide-North region reported a prevalence of overweight and obesity of 62.1 per cent, while the Adelaide – Central & Hills region had the overall lowest proportion of overweight or obese people (49.1 per cent). The proportion of people who were overweight or obese by SA4 region is shown in Figure 111.

Figure 111 – Proportion of South Australian adults aged 18 years who are overweight or obese by SA4 region, January 2008 – December 2012.
Children’s Overweight & Obesity

SAMSS has monitored the proportion of children aged 5 to 17 years who were overweight or obese since 2004. In the case whereby the respondent is under 16 years of age, the interview is conducted by proxy (parent or guardian). BMI was calculated from the self-reported height and weight information using the classification of Cole, Bellizzi, Flegal and Dietz (2000)\(^5\) which takes into account a child’s age and gender. Since 2004 the proportion of overweight or obese children has decreased as shown in Figure 112. In 2012, the proportion of overweight or obese children was 25.8 per cent.

**Figure 112 – Proportion of South Australian children aged 5-17 years who are overweight or obese, January 2004 – December 2012.**


### 3.11.4 Fruit Consumption

**National Comparisons**

The 2011-12 AHS assessed the proportion of Australian adults aged 18 years and over who consumed two or more serves of fruit per day, therefore meeting Dietary Guidelines for Australians\(^5\)\(^4\). The data provided in Figure 113 includes people who did not consume any fruit. The results found that a lower proportion of South Australians met fruit consumption guidelines (46.1 per cent) compared to all Australians (48.3 per cent).

Please note that revised Dietary Guidelines for Australians\(^5\)\(^4\) were released in 2013, however the recommended fruit consumption for male and female adults have not changed (i.e., two serves). The AHS used these NHMRC guidelines in their analysis.
State-wide Comparisons

SAMSS have monitored the proportion of South Australian adults aged 18 years and over who reported consuming two or more serves of fruit, therefore meeting the Dietary Guidelines for Australians. The data provided below includes people who reported not consuming any fruit. Since 2003 the proportion of South Australian adults who consumed two or more serves of fruit has increased as can be noted in Figure 114. In 2012, the proportion of South Australian adults consuming two or more serves of fruit per day was 45.6 per cent.

Figure 114 – Proportion of South Australian adults aged 18 years and over who consume two or more serves of fruit per day, July 2002 – December 2012.

In 2012, a higher proportion of females (53.3 per cent) reported consuming two or more serves of fruit per day compared to males (37.5 per cent) as shown in Figure 115.

Figure 115 – Proportion of South Australian adults aged 18 years and over who consume two or more serves of fruit per day by sex, December 2012.

Over half (50.8 per cent) of adults aged 60 to 74 years reported consuming two or more serves of fruit per day, compared to those aged 45 to 59 years who had the lowest proportion of people consuming two or more serves of fruit (41.5 per cent). The proportion of adults consuming two or more serves of fruit per day by age group is reported in Figure 116.

Figure 116 – Proportion of South Australian adults aged 18 years and over who consume two or more serves of fruit per day by age group, December 2012.

The proportion of South Australians who reported consuming two or more serves of fruit increased as the level of socioeconomic advantage increased. Only 40.1 per cent of those in the lowest SEIFA consumed two or more serves of fruit per day, compared to 52.6 per cent in the highest SEIFA category. The proportion of people who consumed two or more serves of fruit by SEIFA category are reported in Figure 117.

**Figure 117 – Proportion of South Australian adults aged 18 years and over who consume two or more serves of fruit per day by SEIFA, December 2012.**


Over half (52.4 per cent) of the people living in the Adelaide – Central & Hills region reported consuming two or more serves of fruit per day as shown in Figure 118. People who reside in the Barossa-Yorke-Mid North region had the lowest proportion of people consuming the recommended two or more serves of fruit per day (41.0 per cent).

**Figure 118 – Proportion of South Australian adults aged 18 years and over who consume two or more serves of fruit per day by SA4 region, January 2008 – December 2012.**

Children’s Fruit consumption

SAMSS has monitored the mean serves of fruit consumed by children aged 5 to 17 years since 2003. In the case whereby the respondent is under 16 years of age, the interview is conducted by proxy (parent or guardian). The data provided below includes children who reported not consuming any fruit. Since 2003 the mean serves of fruit consumed by children has increased as shown in Figure 119. In 2012, the mean serves of fruit consumed by children aged 5 to 17 years was 1.81 serves per day.

Figure 119 – Mean serves of fruit consumed by South Australian children aged 5 to 17 years, January 2003 – December 2012.

Source: SAMSS, 2012.*includes non-consumers

3.11.5 Vegetable Consumption

National Comparisons

The 2011-12 AHS assessed the proportion of Australian adults aged 18 years and over who consumed five or more serves of vegetables per day, therefore meeting Dietary Guidelines for Australians54. The results found that a higher proportion of South Australians reported consuming five or more serves of vegetables (10.0 per cent) compared to all Australians (8.3 per cent) (Figure 120).

Figure 120 – Proportion of adults aged 18 years and over who self-report consuming 5 or more serve of vegetables per day

Source: Australian Health Survey: First Results, 2011-12 – South Australia.
State-wide Comparisons

SAMSS have monitored the proportion of South Australian adults aged 18 years and over who reported consuming five or more serves of vegetables, therefore meeting the Dietary Guidelines for Australians. The data provided below includes people who reported not consuming any vegetables. Since 2002 the proportion of South Australian adults who consumed five or more serves of vegetables has increased as can be noted in Figure 121.

Figure 121 – Proportion of South Australian adults aged 18 years and over who consume five or more serves of vegetables per day, July 2002 – December 2012


There were a higher proportion of females (12.2 per cent) who reported consuming the recommended five or more serves of vegetables per day compared to males (9.1 per cent) as shown in Figure 122.

Figure 122 – Proportion of South Australian adults aged 18 years and over who consume five or more serves of vegetables per day by sex, December 2012

South Australians aged 60 to 74 years of age had the highest proportion of people consuming five or more serves of vegetables per day (15.4 per cent). Those aged 31 to 44 years had the lowest proportion of people meeting vegetable consumption recommendations (7.6 per cent) as shown in Figure 123.

Figure 123 – Proportion of South Australian adults aged 18 years and over who consume five or more serves of vegetables per day by age group, December 2012


The proportion of South Australians who reported consuming five or more serves of vegetables per day increased as the level of socioeconomic advantage increased. Those in the low (9.1 per cent) and lowest (9.6 per cent) SEIFA category had the lowest proportion of people meeting vegetable recommendations. Those in the highest SEIFA category reported the highest proportion of people consuming five or more serves of vegetables per day (13.7 per cent) as shown in Figure 124.

Figure 124 – Proportion of South Australian adults aged 18 years and over who consume five or more serves of vegetables per day by SEIFA, December 2012

People in the Adelaide-North region had the lowest proportion of people consuming five or more serves of vegetables per day (9.6 per cent), compared to those living in the South Australia-South East region who reported the highest proportion of people meeting vegetable consumption recommendations (13.5 per cent). The proportion of people consuming five or more serves of vegetables by SA4 region is shown in Figure 125.

Figure 125 – Proportion of South Australian adults aged 18 years and over who consume five or more serves of vegetables per day by SA4 region, January 2008 – December 2012

Children’s Vegetable consumption

SAMMS has monitored the mean serves of vegetables consumed by children aged 5 to 17 years since 2003. In the case whereby the respondent is under 16 years of age, the interview is conducted by proxy (parent or guardian). Since 2003 the mean serves of vegetables consumed by children has increased as shown in Figure 126. In 2012, the mean serves of vegetables consumed by children aged 5 to 17 years was 2.29 serves per day.

Figure 126 – Mean serves of vegetables consumed by South Australian children aged 5 to 17 years, January 2003 – December 2012

3.11.6 Physical activity

National Comparisons

The AHS assessed the levels of self-reported physical activity in people aged 18 years and over. Respondents were asked about the types of exercise undertaken for fitness, recreation or sport during the previous week. The frequency, duration and intensity were used to produce a descriptor of relative overall exercise level as either being sedentary, low, moderate or high (for details of methodology please see [http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/EEA2876E067905E2CA257ACC0011BAF1?opendocument](http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/EEA2876E067905E2CA257ACC0011BAF1?opendocument)).

The results found that there was higher proportion of South Australians who were classified at sedentary, low and moderate level of exercise compared to all Australians. However, there was a lower proportion of South Australians who were classified at a high level of exercise (9.1 per cent) compared to all Australians (11.4 per cent) as shown in Figure 127.

Figure 127 – Proportion of adults aged 18 years and over categorised by self-reported exercise levels

![Figure 127](image1)

Source: Australian Health Survey: First Results, 2011-12 – South Australia.

The results were similar for males whereby there were a higher proportion of South Australian males classified at sedentary, low and moderate exercise levels, however a lower proportion at a high level of exercise compared to all Australian males. This is shown in Figure 128.

Figure 128 – Proportion of males aged 18 years and over categorised by self-reported exercise levels

![Figure 128](image2)

Source: Australian Health Survey: First Results, 2011-12 – South Australia.
South Australia had a higher proportion of females classified at a moderate exercise level (22.5 per cent) compared to all Australian females (19.3 per cent). South Australian females had a lower proportion of females classified as sedentary (37.1 per cent) and low (33.7 per cent) compared to Australian females (38.2 per cent and 34.4 per cent respectively). However, South Australia had a lower proportion of females classified as having a high level of exercise (6.8 per cent) compared to Australian females (8.0 per cent). This data is presented in Figure 129.

Figure 129 – Proportion of females aged 18 years and over categorised by self-reported exercise levels

Source: Australian Health Survey: First Results, 2011-12 – South Australia.

State-wide Comparisons

SAMSS monitors the proportion of South Australian adults aged 18 years and over who reported meeting physical activity recommendations. Sufficient levels of physical activity is described as 150 minutes of walking, moderate and vigorous activity across at least five sessions each week, with vigorous activities to be multiplied by two to account for its greater intensity. Since 2003 the proportion of South Australian adults who met physical activity recommendations is shown in Figure 130. In 2012, 40.3 per cent of South Australians met physical activity recommendations.

Figure 130 – Proportion of South Australian adults aged 18 years and over who met physical activity recommendations, January 2003 – December 2012

In 2012, a higher proportion of males (42.0 per cent) reported meeting physical activity recommendations compared to females (38.7 per cent) as shown in Figure 131 below.

**Figure 131 – Proportion of South Australian adults aged 18 years and over who met physical activity recommendations by sex, December 2012**

![Proportion of South Australian adults aged 18 years and over who met physical activity recommendations by sex, December 2012](image)

*Source: SAMSS, 2012.*

The proportion of South Australians meeting physical activity recommendations decreases with age as shown in Figure 132. Over half of people aged 18 to 29 years (55.1 per cent) reported meeting physical activity recommendations, while 28.6 per cent of people aged 65 years and over met physical activity recommendations.

**Figure 132 – Proportion of South Australian adults aged 18 years and over who met physical activity recommendations by age group, December 2012**

![Proportion of South Australian adults aged 18 years and over who met physical activity recommendations by age group, December 2012](image)

*Source: SAMSS, 2012.*
The proportion of people who met physical activity recommendations increased with the level of socioeconomic advantage as shown in Figure 133. 33.7 per cent of people in the lowest SEIFA category met physical activity recommendations compared to 48.1 per cent of people in the highest SEIFA category.

**Figure 133 – Proportion of South Australian adults aged 18 years and over who met physical activity recommendations by SEIFA, December 2012**

Residents of the Adelaide-Central & Hills region (46.9 per cent) had the highest proportion of people who met physical activity recommendations, while those in the Barossa-Yorke-Mid North had the lowest proportion (33.3 per cent) of people who met physical activity recommendations as shown in Figure 134.

**Figure 134 – Proportion of South Australian adults aged 18 years and over who met physical activity recommendations by SA4 region, January 2008 – December 2012.**

Children’s Physical Activity

SAMMS has monitored the proportion of South Australian children aged 5 to 17 years who achieve sufficient physical activity since 2010. The National Physical Activity Guidelines for Children\(^{55,56}\) recommend that children accumulate 60 minutes or more of moderate or greater intensity physical activity on all days of the week. In the case whereby the respondent is under 16 years of age, the interview is conducted by proxy (parent or guardian). The proportion of South Australian children meeting physical activity recommendation is shown in Figure 135. In 2012, the proportion of children who met physical activity recommendations was 37.1 per cent.

Figure 135 – Proportion of South Australian children aged 5 to 17 years who met physical activity recommendations, March 2010 – December 2012.


Public health action for eating well and being active

SA’s Eat Well Be Active Strategy 2011-2016 was launched on 7 December 2011. This whole-of-state strategy provides a framework for action across both government non-government sectors, community organisations and the business community. It aims to enhance the health and wellbeing of all South Australians by progressing action under five key areas:

1. **Mobilising the community to take action to promote healthy eating and physical activity, and publically recognising their achievements**

Healthy eating and physical activity have been promoted through the Go for 2&5® fruit and vegetable consumption campaign (September 2011 – May 2012) and the Be Active campaign (October 2012 – April 2013). These campaigns aim to educate and motivate the community and provide practical ideas about changing their lifestyles in a sustainable way.

2. **Ensuring that the places where we live, learn, work, eat, play and shop make it easy for children and adults to be active and eat a healthy diet, including breastfeeding**

The Healthy Eating Local Policies and Programs (HELPP) initiative, established in July 2011, and funded by SA Health until June 2013, works to encourage and assist local government and community organisations to put in place healthy eating policies (including support for breastfeeding) and run food literacy programs. Twenty-four Councils began developing a local healthy eating policy, with four councils endorsing their policy. HELPP developed a seven-module food literacy education and cooking program resource to be disseminated statewide.
3. Implementing policies to improve the built, social and natural environments that support South Australians to eat well and be active

Policy: In 2010-11 the ‘Healthy Food and Drink Choices for Staff and Visitors in SA Health Facilities’ policy directive was implemented across the department. Leading by example, the directive aims to increase the availability of healthy food and drinks while restricting unhealthy choices in all food/drink outlets on departmental premises, including cafeterias, kiosks, vending machines, work-related meetings, functions and events, client education programs and fundraising initiatives. In 2011-12, an evaluation of implementation of the policy indicated that 76 per cent of all 122 identified food/drink outlets were reported as compliant with the policy; 78 per cent indicated that they had completely removed red category items from meetings, functions and events; and 79 per cent of sites reported that they had completely removed red category items from fundraising (including snack boxes), giveaways, prizes and gifts.

Health in planning: opportunities to promote population health and equity are presented by new land uses, denser urban form, and infrastructure investments such as those in public transport. The department has continued high-level collaborations, joint-agency activity and strategic projects with the DPTI, Renewal SA and the Heart Foundation (SA)-auspiced Active Living Coalition, to ensure that urban planning policies and everyday practices positively influence the social determinants of health and wellbeing, including a focus on healthy eating and physical activity. As a result of this collaboration, the Streets for People compendium was launched in September 2012 and the Healthy by Design SA resource will be launched in early 2013.

Reducing children’s exposure to advertising and marketing of unhealthy foods: South Australia has taken a national lead on this issue for several years, including hosting a national seminar on food marketing to children in Adelaide in May 2012. Over 60 participants from state, territory and Commonwealth governments, food and beverage and advertising industries, public health advocates and academia attended. A time-limited working group was established, jointly chaired by industry through the Australian Food and Grocery Council and South Australia’s Chief Public Health Officer, with the goal of engendering further industry and government action, including developing a framework for independent monitoring of food advertising. SA Health will continue to champion further united action in 2012-13.

4. Providing a range of information, programs and services to assist people throughout life to be more active, eat a healthy diet and maintain a healthy weight, with particular attention to those most in need

Many obesity-prevention programs funded by the department happen beyond the health sector in schools and childcare services, workplaces and communities. As an example, the Eat Well Be Active Primary Schools program, a capacity-building project for teachers, has been implemented in five phases and is currently working with 173 schools, while 32 other schools have accessed the services previously. This program is funded until December 2013.

The Community Foodies initiative has 220 active Foodies (including 24 Aboriginal and 21 CALD members) supporting healthy eating initiatives in a wide range of community agencies and settings across the state. Of childcare centres, 308 (90 per cent) had received Start Right Eat Right training, which educates staff about providing healthy, nutritious and safe food for children, and about nutrition policy; while 218 centres (63 per cent) had completed the Start Right Eat Right Award requirements for a healthy menu, nutrition policy and food safety. Start Right Eat Right is funded by SA Health until December 2013.

5. Ensuring that we have a range of enablers in place, including strong partnerships, coordination mechanisms, leadership, communication, workforce planning and development, monitoring and evaluation of activities, research and governance

Funded by SA Health from April 2010 to March 2013, the Physical Activity Nutrition Observatory: Research and Monitoring Alliance (PANORAMA) at Flinders University aims to advance the promotion of physical activity, public health nutrition (including breastfeeding) and obesity prevention through better understanding of their behavioural and environmental drivers; the evidence of effective interventions; and more-effective links between research, policy and implementation. In 2011-12 PANORAMA completed a number of deliverables to SA Health including the Data Monitoring Compendium – which provides a conceptual framework for monitoring population nutrition, physical activity and weight status, and identifies indicators and datasets that are available at both South Australian and national levels. The 2011-12 annual data report provides secondary analysis of South Australian surveillance data and looks at trends in nutrition, physical activity and weight status by a range of demographics.
Obesity Prevention and Lifestyle (OPAL) program

OPAL is a federal, state and local government childhood obesity prevention program. It is based on EPODE, a French program that has shown encouraging results in reducing childhood obesity. OPAL is coordinated through the Public Health and Clinical Systems Division, SA Health, and contributes to:

> the state strategic priority Safe Communities, Healthy Neighbourhoods;
> development and implementation of the State Public Health Plan;
> the federal government’s National Partnership Agreement on Preventive Health.

South Australian councils provide the setting from which OPAL is delivered in communities. Each OPAL council receives $1.1 million (staff and funding) and contributes a further $250,000 (including in-kind support) to bring about change over a five-year period. A total of 20 South Australian communities in 19 councils are participating in OPAL, which will run during the period 2009-17. The councils participating in OPAL (to December 2012; Table 35) demonstrate a combination of greater disadvantage, higher levels of overweight and obesity, larger proportions of children and higher levels of Indigenous populations. Population sizes vary between communities, and OPAL resources have been matched to the needs of each community.

OPAL is implemented through communities via a series of goals and themes related to healthy eating and physical activity. OPAL teams in councils bring about change by employing a socioecological approach – that is, by systematically influencing people’s behaviours and the environments in which they live.

Table 36 – Obesity Prevention and Lifestyle (OPAL) councils, 2011-12

<table>
<thead>
<tr>
<th>Alexandrina</th>
<th>Marion</th>
<th>Onkaparinga</th>
<th>West Torrens</th>
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<tbody>
<tr>
<td>Campbelltown</td>
<td>Mid Murray</td>
<td>Playford</td>
<td>Whyalla</td>
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<tr>
<td>Charles Sturt</td>
<td>Mount Gambier</td>
<td>Port Adelaide</td>
<td>Enfield</td>
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<td>Coorong</td>
<td>Murray Bridge</td>
<td>Port Augusta</td>
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<tr>
<td>Copper Coast</td>
<td>Northern Areas, Mount Remarkable and Peterborough</td>
<td>Salisbury</td>
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The program has achieved the following outcomes:

> finalised contracts with all 20 OPAL communities and inducted teams and councils in September 2011 and 2012
> finalised negotiations with the Northern Territory Government to instigate the Childhood Obesity Prevention and Lifestyle (COPAL) program, and selected Palmerston as Northern Territory COPAL site; commenced COPAL in September 2011 (concluding in 2016)
> conducted three OPAL Mayors’ Club meetings, with Minister Hill meeting with 8-12 mayors per meeting and hearing of local OPAL initiatives
> instigated the third and fourth OPAL themes: ‘Make it a fresh snack’ and ‘Step, cycle and scoot to school’. Themes were rolled out through communities with accompanying programs, policies, education and awareness raising
> established the OPAL evaluation framework including quantitative and qualitative components
> appointed Flinders University to coordinate the quantitative eight-year OPAL evaluation
> commenced quantitative data collection across all sites for OPAL evaluation and established baseline measures
> conducted two computer assisted telephone interviewing (CATI) surveys of communities to determine residents’ awareness of and the effectiveness of the OPAL identity within OPAL sites; early CATI results indicate that behaviour change (e.g. decreased consumption of sugar-sweetened beverages) has begun in OPAL communities.
In the future the program aims to:
> establish sustainable pathways for OPAL within councils post funding cessation (the first phase of OPAL councils concludes in 2014);
> report baseline findings from OPAL evaluation subsets (e.g. weighing and measuring, behaviour surveys, geospatial mapping, project management);
> contribute to the development, implementation and evaluation of council public health plans;
> continue to implement coordinated local initiatives to promote healthy eating and physical activity.

**Healthy Workers – Healthy Futures**

The Healthy Workers – Healthy Futures initiative, funded under the National Partnership Agreement on Preventive Health, commenced in July 2011. The central platform of the initiative has been to fund key industry groups that can lead the change process either at a statewide or a regional level. By tapping into the existing infrastructure and communication mechanisms of these stakeholders, the department hopes to be able to imbed workplace health promotion into the long-term culture of the sector, with a specific focus on improving the key modifiable chronic disease risk factors of smoking, poor nutrition, excessive alcohol consumption and lack of physical activity.

The key objectives of the Healthy Workers – Healthy Futures initiative are to:
> create supportive workplace cultures and environments through leadership and policy initiatives
> raise employers’ and employees’ awareness, knowledge and understanding about the relationship between lifestyle behaviour, risk factors and chronic disease
> increase workers’ access to quality health promotion programs and resources that support the adoption of healthy behaviours in relation to healthy eating, increased physical activity, smoking cessation and safe alcohol consumption.

The progress to date has focused on sector development and associated supporting infrastructure.

A competitive tendering process has identified the initial round of Host Agencies encompassing: the construction industry, community services, the small and medium enterprise sector, the farming industry, the logistics and transport industry, and the rail and maritime sector. As a result we hope to reach not only workforces with high risk factors, on a statewide basis, but also employees in low socioeconomic groups.

The successful host agencies were announced at the official Healthy Workers – Healthy Futures launch in December 2012 and are:
> Aged and Community Services
> South Australian Council of Social Services
> Inner West Business Enterprise Centre
> Cement Concrete and Aggregate
> SA Farmers Federation
> Construction, Forestry, Mining and Energy Union
> Australian Services Union South Australia and Northern Territory Branch
> United Trades and Labor Council of South Australia Building Incorporated (SA Unions)

Each host agency has employed a Healthy Worker Adviser who will help workplaces tailor resources, implement programs, run activities, and develop healthy workplace environments and cultures that make the ‘healthy choice the easy choice’.

In addition, a step-by-step guide to developing a workplace health and wellbeing program and associated resources were released in December 2012. These resources are available to workplaces covered by the host agencies, and via the website to any interested workplace.

A further round of industry host agencies will be called for towards the end of 2013, expanding the reach of the program across a broader range of industry sectors. Complementary and supporting activities, including a recognition scheme and further resources and negotiations to incorporate workplace health and wellbeing competencies into relevant professional qualifications, will be developed and implemented over the next one to two years.
3.12 Communicable diseases

The Disease Surveillance and Investigation Section (DSIS) of SA Health assists with controlling communicable diseases in South Australia through surveillance and investigation of notifiable diseases, analysis of data and initiation of specific public health actions. DSIS is responsible for the monitoring and control of notifiable communicable diseases under Sections 9 and 10 the South Australian Public Health Act 2011.

The last five years have seen an overall increase in the number of notifications to the Communicable Disease Control Branch (CDCB), with an average of 12,064 notifications per year (2008-2012), compared to 6,791 notifications per year (2002-2007) for general notifiable diseases, excluding Sexually Transmitted Infections, Blood Borne Viruses and Tuberculosis.

In 2011, sexually transmitted infections and blood borne virus surveillance systems relocated from Clinic 275 to CDCB. In 2012, there were 6,545 new notifications of sexually transmitted diseases and blood borne viruses. This figure represents a 27 per cent increase in the number of new notifications compared to notifications received in 2008. These data do not include notifications that failed to meet surveillance case-definitions or those received for interstate residents.

Statewide surveillance was conducted for notifiable diseases through examination of laboratory and clinical data to identify cases, clusters and outbreaks; subsequent actions involved investigation of sporadic cases, clusters and outbreaks; enhanced surveillance for some vaccine preventable diseases; reporting to national communicable disease agencies; publication and reporting of disease summary data.

Partnerships were continued with agencies providing additional expertise and authorities for investigations including OzFoodNet, Environmental Health branches, Biosecurity SA, SA Pathology and Environmental Health Officers from local government. The DSIS section is responsible to over 65 notifiable conditions.

Significant Outbreaks and Investigations

During 2011-2012 DSIS investigated over 260 outbreaks, including 17 suspected foodborne outbreaks. Some of the significant investigations included:

> In January 2011, an increase in the reported cases of Salmonella Typhimurium phage type 9 instigated an investigation. The investigation identified custard-containing bakery goods originating from two bakeries as a common link.

> In September 2011, a cluster investigation of Shiga Toxin producing E. coli linked ten cases to a petting zoo at an agricultural show. As a result of this investigation, the existing state Petting Zoo Infection Control Guidelines are under review.

> In July 2012, an outbreak of Campylobacter infection at a birthday party was investigated. It was likely to be linked to the consumption of chicken liver pâté. DSIS published this outbreak in the Western Pacific Surveillance and Response Journal in October 2012.

> A rare phage type of Salmonella, Salmonella Typhimurium phage type 3 was identified in South Australian residents in September 2012. An investigation identified raw almonds from a major supermarket as the link. Other cases in other states and territories resulted in a multi-jurisdictional outbreak investigation and a national recall of the product.
3.12.1 Foodborne Disease

The total number of notifications for the ten foodborne diseases under surveillance in South Australia decreased by 5 per cent in 2012 compared to 2011. There were 3,140 notifications of foodborne illness in 2012 (Table 36).

There were nine foodborne or suspected foodborne outbreaks in South Australia in 2012 and eight foodborne or suspected foodborne outbreaks in 2011. Yersiniosis notifications increased from one in 2011 to 12 in 2012. Shigella notifications also increased, from 32 in 2011 to 50 in 2012.

Table 37 – Number of notifications of ten foodborne diseases, South Australia, 2006 to 2012

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Salmonellosis</td>
<td>556</td>
<td>867</td>
<td>645</td>
<td>684</td>
<td>668</td>
<td>1,048</td>
<td>842</td>
<td>684</td>
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<tr>
<td>Listeriosis</td>
<td>5</td>
<td>7</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>4</td>
<td>3.6</td>
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<tr>
<td>Campylobacteriosis</td>
<td>2,471</td>
<td>2,730</td>
<td>1,984</td>
<td>1,778</td>
<td>1,760</td>
<td>2,163</td>
<td>2,178</td>
<td>2,144.6</td>
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<tr>
<td>Typhoid</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>9</td>
<td>3</td>
<td>3.4</td>
</tr>
<tr>
<td>Paratyphoid</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3.4</td>
</tr>
<tr>
<td>Yersiniosis</td>
<td>11</td>
<td>17</td>
<td>20</td>
<td>17</td>
<td>9</td>
<td>1</td>
<td>12</td>
<td>14.8</td>
</tr>
<tr>
<td>Shigellosis</td>
<td>37</td>
<td>59</td>
<td>143</td>
<td>52</td>
<td>53</td>
<td>32</td>
<td>50</td>
<td>68.8</td>
</tr>
<tr>
<td>Shiga toxin producing <em>E. coli</em> infection</td>
<td>38</td>
<td>41</td>
<td>38</td>
<td>63</td>
<td>32</td>
<td>47</td>
<td>47</td>
<td>42.4</td>
</tr>
<tr>
<td>Haemolytic Uraemic Syndrome</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Locally acquired Hepatitis A infection</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>48</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>12.2</td>
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<tr>
<td><strong>Total</strong></td>
<td>3,130</td>
<td>3,732</td>
<td>2,846</td>
<td>2,655</td>
<td>2,530</td>
<td>3,311</td>
<td>3,140</td>
<td>2,978.6</td>
</tr>
</tbody>
</table>

Source: Communicable Disease Control Branch, SA Health.

Salmonella infection

Salmonellosis is an infection of the bowel caused by *Salmonella* bacteria. There are thousands of serotypes of *Salmonella* and they occur in many domestic and wild animals and birds, sometimes causing illness. *Salmonella* infection usually results from ingestion of the bacteria from contaminated food, water or hands. Person-to-person spread may occur when hands, objects or food become contaminated with faeces from people who are infected.

There were 842 notifications of *Salmonella* infection in South Australia in 2012 compared with 1,048 in 2011 and a five year average (2006-2010) of 684 notifications per year. Figure 1 shows that in 2011 and 2012 the average number of notifications for *Salmonella* infection per month were higher than expected, compared to previous years. In 2011 and 2012 there was an even distribution of sex (963 females, 927 males). There was a high proportion of cases under 5 years of age (18.5 per cent; Figure 136).
Figure 136 – Salmonella notifications by month of notification, South Australia, 2011-2012

3.12.2 Vaccine Preventable Diseases

Influenza

Influenza is an acute respiratory disease that is usually more common in winter. Seasonal influenza places extra demands on healthcare resources, including hospitalisation for severe disease. The public health impact can be broad as the influenza virus is spread by droplets generated from a cough or sneeze. Annual vaccination protects against predicted circulating strains of influenza.

DSIS monitors the notifiable disease data on influenza and conducts syndromic influenza surveillance by collating datasets from both laboratory (SA Pathology) and clinical sources (Australian Sentinel Practice Research Network; hospital emergency departments) to describe influenza-like illness in South Australia. Influenza notifications were higher than expected in 2012, with a second peak of Influenza B towards the end of the year (Figure 137).
Figure 137 – Number of Influenza clinical and laboratory diagnoses, South Australian, 2011 to 2012

Source: Communicable Disease Control Branch, SA Health.

Pandemic Influenza

WHO states that influenza pandemics are unpredictable but recurring events that can cause severe social, economic and political stress. Advanced planning and preparedness are critical in helping to mitigate the impact of influenza epidemics or pandemics.

The objectives of pandemic influenza plans are to improve preparedness and response, increase knowledge and understanding and, where possible, strengthen protection against pandemic influenza.

SA Health’s Emergency Management Unit (EMU) is responsible for the implementation and management of the Department for Health and Ageing Emergency Management Program, to ensure that the department fulfils its role in any major incident, emergency or disaster that may occur in SA, or nationally or internationally. SA Health, as the Hazard Leader for Human Disease, is required under legislation (Emergency Management Act 2004, State Emergency Management Plan, and Health and Medical Functional Services Plan) to have a current Human Disease Hazard Plan. In conjunction with the hazard plan, the Pandemic Influenza Support Plan and the SA Health Operational Plan for Pandemic Influenza have been developed for the state.

In the event that a pandemic occurs, the EMU will coordinate response processes to the outbreak across SA Health services in conjunction with a team of subject area specialists. If required, this will include activation of the State Control Centre – Health and can, if sufficiently serious, progress to a declaration under the South Australian Public Health Act 2011 and/or the Emergency Management Act 2004.

It is now four years since the last pandemic occurred and SA Health is mindful that it is important to regularly refresh health staff’s awareness of the risks that a pandemic poses, and the mitigation strategies in place to manage such an event. EMU conducts education and exercise programs across all health services and will include pandemic influenza as appropriate.

In conjunction with the Human Disease Working Group, the EMU will review arrangements prior to the winter, and revise and further develop as required.
At the national level the overall lead for pandemic influenza planning is taken by the Australian Health Protection Principle Committee (AHPPC). Under the authority of AHPPC, the Australian Health Management Plan for Pandemic Influenza (AHMPPI) is currently being rewritten in light of learning from the H1N1 pandemic influenza (swine flu) outbreak of 2009. SA Health plans to review and revise state pandemic plans and, where appropriate, align with the national plan once it has been rereleased.

The South Australian Human Disease Hazard Plan, the Pandemic Influenza Support Plan and SA Health Operational Plan for Pandemic Influenza were revised in 2012. The role of the state's Pandemic Influenza Working Group was completed and it was thus dissolved.

Future directions

With the majority of the pandemic planning developed, it was recognised that SA Health as Hazard Leader for Human Disease needed to broaden its focus to consider other communicable diseases of consequence as well as food-borne disease and water-borne contamination issues. As such, a new group, the State Human Disease Committee, has been formed to consider these broader issues at a statewide level. The department also has an internal Human Disease Working Group that is the primary point for subject-expert advice on the development of preparedness plans.

Further work will be undertaken in SA during 2013 following completion of the revised AHMPPI.

The EMU and SA Health will continue to respond to and work with the Commonwealth, the states and territories, LHNs and the community to strengthen plans and knowledge, with the intent that levels of preparedness and resilience will be increased.

Meningococcal infection

Meningococcal disease is a severe infection caused by the meningococcus bacteria which may result in meningitis (infection of the outer lining of the brain and spinal cord), septicemia (infection of the blood), joint infection, eye infection, pneumonia and rash. Septicaemic meningococcal disease can cause shock and death within hours of the onset of symptoms. In Australia, 5 -10 per cent of people with meningococcal disease die, sometimes even despite rapid treatment.

There were 29 notifications of meningococcal disease in South Australia in 2012 compared with 21 in 2011 and a five year average (2006-2010) of 17 notifications per year (Figure 138). Most cases notified are caused by the meningococcal B strain as there is currently no vaccine available in Australia.

Figure 138 – Number of Meningococcal notifications, by year and serogroup, South Australia, 1990 to 2012

Source: Communicable Disease Control Branch, SA Health.
Measles

Measles is often a severe disease caused by infection with the measles virus. Symptoms may include fever, tiredness, cough, sore throat, runny nose, sore eyes, rash and photophobia. Measles is spread by breathing infectious airborne droplets caused by coughing and sneezing, and by contact with hands, tissues and other articles soiled by nose and throat discharges. The virus is highly infectious and infectious droplets may remain in a room for up to two hours after an infected person has left it.

Seven cases of measles were notified in 2012, an increase from four notifications in 2011. This included an outbreak investigated by DSIS in November 2012. A WHO-driven regional approach to the elimination of measles continues.

3.12.3 Vector Borne Diseases

Murray Valley Encephalitis

Murray Valley Encephalitis (MVE) is a rare disease in humans caused by Murray Valley Encephalitis virus (MVEV). This infection has the capacity to cause acute and severe illness in humans and can be fatal. The infection is spread from infected animals to humans by mosquito bites. There is no direct spread from person to person.

In 2011 two notifications of MVE were reported, including one death. They were the first locally acquired cases of MVE recorded in South Australia since 1974. No cases of Murray Valley Encephalitis were notified in 2012.

Public Health Action – Mosquito surveillance and control

The department coordinates a number of programs aimed at monitoring mosquito and mosquito-borne virus activity, with a view to reducing the risks of mosquito-borne disease across the state.

Following the epidemic Ross River virus season of 2010-11, during which the first locally acquired cases of MVEV since 1974 were seen, SA Health has developed a contingency plan for managing future outbreaks of mosquito-borne disease. A geographical information system (GIS) has been developed for the storage and analysis of state-wide mosquito-surveillance data.

SA Health supports mosquito management activities at the local government level, through subsidising mosquito surveillance and control through and arbovirus prevention activities.

SA Health undertakes mosquito control in mosquito-breeding habitats adjacent to Globe Derby Park. Feedback received has indicated that the proactive program has effectively reduced mosquito activity in the area.

Arbovirus case numbers returned to normal levels during 2011-12.

SA Health’s sentinel chicken surveillance program, which aims to provide early warning when serious encephalitic mosquito-borne viruses are present, was reviewed, with the aim of increasing coverage in high-risk areas.

Future directions

In 2013 an expanded sentinel surveillance program will be implemented. Five chicken flocks will be established along the River Murray and tested monthly to identify viral activity and increased risk of MVEV and Kunjin virus. This will further enable timely and targeted public health alerts to be issued in the event that viral activity is evident.

Environmental surveys of mosquito-breeding habitats will be conducted to further enhance GIS capabilities and the capacity to undertake targeted mosquito control activities throughout the state.
3.12.4 Sexually transmissible infection and blood-borne viruses

The Sexually Transmissible Infection (STI) and Blood Borne Virus (BBV) Section of SA Health applies an integrated public health approach to STI and BBV policy and program development. It provides a central coordination role for monitoring the implementation of state and national policy in relation to HIV, STIs, hepatitis B and hepatitis C in South Australia.

STIs are a major public health concern in Australia and worldwide. In SA there has been a fourfold increase in genital chlamydia in the past 10 years, predominantly affecting young people aged 15-29 years. Gonorrhoea has also risen over a 10-year period in the state; the greatest burden of this infection is among the Aboriginal and Torres Strait Islander populations.

The South Australian Sexually Transmissible Infections Action Plan 2012-2015 (STI Action Plan) was developed in the context of rising rates of STIs and the consequent impact on individuals and communities. STIs cause acute symptomatic and asymptomatic illness and can contribute to infertility and the transmission of HIV. STIs can adversely affect wellbeing and relationships but they are all preventable and, for the most part, easily treated.

Monitoring the implementation of the STI Action Plan and other related action plans and strategies is the responsibility of SA Health’s newly formed South Australian STI and BBV Advisory Committee.

At the time of writing this report, 2012 results remain provisional due to difficulties accessing laboratory results for residents of the Anangu Pitjantjatjara Yankunytjatjara Lands.

Chlamydia infection

In 2012, there were 5,039 cases of genital chlamydia notified making this the most commonly notified sexually transmitted disease in South Australia (Figure 139). This figure is 14 per cent higher than the number of notifications reported in 2010 and is 36 per cent higher than the number of notifications reported in 2008. Notifications in females exceeded males with the highest age-specific rates of infection occurring among males and females aged 15 to 29 years and this is consistent with previous years. In 2012, only 32 per cent of cases experienced clinical symptoms making the early detection and treatment of infected persons and their sexual partners difficult. Additionally, cycles of infection, treatment and re-infection evident in the dataset are proving challenging for general practitioners. In 2012, new cases were more likely to be Caucasian (82 per cent) and reported acquiring their infection in South Australia (90 per cent). Cases were geographically dispersed across metropolitan, rural and remote regions South Australia.

Since 2009, the diagnosing medical practitioner has been encouraged to ensure sexual partners of infected cases within the previous three month period are informed and advised to seek testing. Effective antibiotic treatment is available on prescription from a doctor.

Figure 139 – Number of notifications of genital chlamydia in South Australia, 2002 to 2012

Source: Communicable Disease Control Branch, SA Health.
Gonorrhoea

In 2012, there were 480 new notifications of gonorrhoea. Overall, the number of notifications of gonorrhoea has remained stable in the past five years averaging 445 notifications per year from 2007 to 2011 (Figure 140). Notifications in males exceeded females. Among females, the highest numbers of notifications were for persons aged 15 to 34 years (84 per cent). Among males, the highest numbers of notifications were for persons aged 15 to 49 years (94 per cent). Thirty-eight per cent of new cases occurred among Aboriginal people. The distribution of gonorrhoea among Aboriginal and non-Aboriginal racial groups has remained fairly constant over the past five years. In total, 113 (64 per cent) Aboriginal cases were residents of Anangu Pitjan tjara Yankunytjara Lands where primary healthcare programmes perform annual screening of community residents and regular visitors. Among non-Aboriginal males, 67 per cent of cases reported same-sex partners compared to 41 per cent in 2011. In 2012, 77 per cent of same-sex exposures occurred in South Australia and this is consistent with data collected in 2011.

Figure 140 – Number of notifications of gonorrhoea in South Australia, 2002 to 2012

Source: Communicable Disease Control Branch, SA Health.

Syphilis

There was an increase in the number of notifications of infectious syphilis in 2012. In total, 43 new cases of infectious syphilis were notified compared to 18 in 2011. Notifications in males exceeded females. Nine cases occurred among Aboriginal people however this dataset remains incomplete. Among males, 67 per cent of cases reported same-sex partners compared to 50 per cent in 2011. In 2012, 60 per cent of sexual exposures were likely to have occurred in South Australia and this figure is consistent with the previous year (Figure 141).
HIV infection

In 2012, there were 43 new diagnoses of HIV reported in South Australia compared to 68 in 2011 (Figure 142). Of these, 10 cases reported a previous positive test result overseas. Notifications in males exceeded females. Among females the mean age was 31 years and cases were more likely to be born overseas (73 per cent). Among males, the mean age was 36 years and cases were more likely to be born in Australia (56 per cent). Two male cases identified as Aboriginal. Sexual transmission remains the principle transmission route in 79 per cent of cases (n=34). Seven per cent of cases reported injecting drug use (n=3).

Among males, 62 per cent reported same-sex partners compared to 50% in 2011. In 2012, homosexual males were likely to have acquired their infection in South Australia (40 per cent), interstate (20 per cent) and overseas (40 per cent). Heterosexual males were more likely to report acquiring their infection overseas (71 per cent).

Source: Communicable Disease Control Branch, SA Health.
Hepatitis B infection

In 2012, there were 343 new diagnoses of hepatitis B infection. These were further characterised as acute infection or infection where the date of acquisition could not be determined. Acute cases (12 male, 5 female; mean age 43 years) were more likely to be Australian born (70 per cent), and to report a primary risk factor of injecting drug use (35 per cent). Unspecified cases (151 male, 175 female; mean age 37 years) were more likely to be born overseas and in a country where hepatitis B virus infection is considered endemic. These data are reasonably consistent with previous years.

Hepatitis C infection

In 2012, there were 511 new diagnoses of hepatitis C infection compared to 514 cases in 2011. These were further characterised as acute infection or infection where the date of acquisition could not be determined. Acute cases (45 male, 33 female; mean age 35 years) were more likely to be Australian born (91 per cent) and report a primary risk factor of injecting drug use (95 per cent). Unspecified cases (290 male, 143 female; mean age 43 years) were more likely to be Australian born (60 per cent) and report a primary risk factor of injecting drug use (73 per cent).

Of 15 658 cases diagnosed with hepatitis C since 1990, 74 per cent would now be over 40 years of age highlighting the impending disease burden facing health planners in future years.

Public Health Action on Sexually transmissible infection and blood-borne viruses

SA Health uses a public health approach for managing people with HIV whose behaviours place others at risk for HIV transmission. This approach is outlined in the Code for the Case Management of Behaviours that Present a Risk for HIV Transmission (the Code). The Code is currently under review to align it with the new South Australian Public Health Act 2011.

The STI and BBV Section, in partnership with the Australasian Society for HIV Medicine, continues to provide opportunities for General Practitioners to undertake training to become accredited prescribers of highly specialised drugs for the treatment of HIV and hepatitis C. There are currently nine GPs accredited to prescribe HIV medications, and 11 GPs accredited to prescribe maintenance treatment for hepatitis C, in shared care arrangements in a community setting in SA.

The SA Health Statewide Hepatitis C Nursing Program, established in 2009, continues to work with GPs to provide innovative service delivery models to increase access to hepatitis C treatment and care across the state. SA Health has provided grant funding to Hepatitis SA to deliver the Statewide Hepatitis B Coordination Project. The aims of the project are to contribute to the reduction of, and morbidity caused by, hepatitis B; and to minimise the personal and social impact of hepatitis B in SA.

A new two-year agreement was signed with the Aboriginal Health Council of South Australia to deliver the Blood Borne Virus Coordination Program, which acts as the overarching coordination point for the prevention, testing, diagnosis and management of BBVs within Aboriginal communities in SA. This program works closely with Aboriginal Community Controlled Health Services across the state to prevent transmission and enhance testing, diagnosis and management of BBVs, with a particular focus on building capacity of Aboriginal health workers to undertake this work.

In 2011-12 SA Health committed $9 million in grant funding to non-government organisations to provide a range of community programs to prevent STIs and BBVs, and support those who are affected by HIV, hepatitis B and hepatitis C.

Over the next 12 months the STI and BBV Section will review the funding and planning framework for non-government services in HIV and hepatitis C, which is informed by several planning and review projects, to ensure that programs are addressing current and emerging issues and are aligned with current policy and surveillance trends. A hepatitis B action plan to guide local implementation of the first ever National Hepatitis B Strategy will also be developed.
3.12.5 Healthcare-associated infection prevention and control

Healthcare-associated infection (HAI) contributes to poor outcomes for patients, and is responsible for additional costs to the healthcare system through increased length of hospital stay and additional treatment and investigations. The increase in antibiotic-resistant micro-organisms also contributes to poorer outcomes for patients, since infection with these organisms is harder to treat.

Compliance with established infection control procedures, especially hand hygiene, remains an important priority area for action in SA, and all acute-care hospitals are expected to participate in the national initiative being run by Hand Hygiene Australia. SA Health facilities have achieved a consistent improvement in hand hygiene compliance during the past two years, but the challenge is to sustain this improvement over the longer term.

Promotion of appropriate antibiotic prescribing (known as antimicrobial stewardship) is one of the major strategies to limit the development and spread of antibiotic-resistant micro-organisms. The Infection Control Service actively monitors the incidence of HAI and antimicrobial usage at state and national levels.

The potential emergence of new pathogens, such as new strains of *Clostridium difficile*, in hospital patients is being carefully monitored both locally and nationally. Control of this particular pathogen relies on thorough and effective cleaning of the healthcare environment as well as promotion of responsible antibiotic prescribing.

The Australian Commission on Safety and Quality in Health Care (ACSQHC) has led the development of new accreditation standards for hospitals, which include a Standard for the prevention and control of HAI against which hospitals will be assessed from January 2013, and compliance is mandatory.

Public Health Action on infection prevention and control

*Hand Hygiene program*
SA Health hand hygiene policy, guideline and suite of implementation tools have provided SA with the excellent Hand Hygiene program, which has been reflected in the state’s steady improvements over time. A centralised auditor training program has facilitated the program’s sustainability. The department also successfully continues to run the community-directed ‘Wash, Wipe, Cover…don’t infect another’ initiative in parallel with the national program.

*Antimicrobial stewardship*
The South Australian Expert Advisory Group on Antimicrobial Resistance continues to produce standardised statewide guidelines for appropriate antibiotic prescribing in hospitals, and reviews results from the national surveillance program for South Australian hospitals.

*Healthcare-associated infection surveillance*
SA Health continues to refine the reporting of existing statewide HAI surveillance data as well as identifying areas of future surveillance (e.g., surgical site infection).

*Cleaning Standard for Hospitals*
The SA Health Cleaning Standard for Hospitals details the minimum level of cleaning that should apply to all state hospitals and associated satellite health units. The Standard, which is currently in a working draft for consultation, will be accompanied by an implementation guide, and a system of auditing will be developed.

*Educational programs*
The Infection Control Service provides information and training in infection prevention for healthcare professionals. The infection control two-day workshop includes ongoing education for link nurses or those nurses with infection control as part of their portfolio.

The Hand Hygiene Australia initiative continues to expand, with nearly 400 nurses from public and private facilities across the state having received training in auditing against the ‘5 moments for hand hygiene’. The state overall compliance rate continues to show a steady improvement over time and has been consistently close to the national average.
During 2011-12 SA Health contributed to a national study to inform the recently established national Antimicrobial Resistance Standing Committee and consulted with South Australian stakeholders about the reporting of antimicrobial practice. Surveillance of antimicrobial usage in Australian hospitals continues to expand, and the national program now includes data from 39 tertiary referral hospitals (four of these from SA) and 17 large city and regional hospitals (three from SA). In addition, 11 private hospitals contribute usage data to the program (six from South Australia).

South Australian rates of healthcare-associated infection are comparable with or below those reported by other jurisdictions. For example, the state rate of bloodstream infection caused by *Staphylococcus aureus* (‘golden staph’) is among the lowest nationally. Surveillance data also indicate that, although there has been emergence of vancomycin-resistant enterococci in the larger public hospitals, the extent of the problem has been largely contained in the past two years.

Three education sessions to update and train over 300 nurses in basic infection control were held during 2011-12. Uptake of the program continues to increase, with over 100 participants attending these one- and two-day programs.

**Future directions**

SA Health will continue to work towards embedding current programs into the clinical culture of South Australian hospitals. Hand hygiene needs to maintain a high profile to ensure that compliance rates keep improving. The department will maintain the auditor training program and collect data on a statewide basis for submission to the Hand Hygiene Australia national monitoring program.

SA Health will progress the implementation of new targeted areas of surveillance in alignment with the ACSQHC’s HAI reduction strategy. These will include surveillance on selected preventable surgical site infections and refinement of the healthcare-associated *Clostridium difficile* infection indicator.

During 2012-13 work will continue on the development of an auditing tool and implementation process for the SA Health Cleaning Standard for Hospitals.

Guidelines for treatment of *Staphylococcus aureus* bacteraemia and urinary tract infections will be developed with appropriate consultation and made available on the SA Health website. Efforts have commenced to include four regional sites from South Australia (Port Augusta, Port Pirie, Whyalla and Riverland regional hospitals) into the national antimicrobial surveillance program during 2013.

Work will continue on the updating of the state infection control guidelines and development of associated implementation tools and fact sheets for health professionals and the general public. A suite of standardised auditing tools to assist hospitals in the accreditation process will also be finalised and made available to all South Australian hospitals.

**Specialist services**

Specialist Services provide 24-hour public health medical consultant services to health professionals and other sections of SA Health with respect to communicable disease control; epidemiological and health promotion services; education, communication and advice; and capacity building for the public health workforce, including supervised training opportunities to a range of public health professionals.

Rheumatic heart disease (RHD) is a major cause of illness in young Aboriginal people. It can be prevented through regular long-term antibiotic prophylaxis (monthly injections of penicillin) for those at highest risk. Experience elsewhere in Australia has shown that a coordinated control program, including effective partnerships, a disease register and support for access to treatment services, is essential to control RHD.

Mosquito-borne diseases (particularly RRV and Barmah Forest virus infections) are common in South Australia. Appropriate health promotion and educational resources are required to minimise the risk and impact of mosquito-borne diseases. The implementation of the new SA Public Health Act in 2012 led to a need to re-create the Regulations for Notifiable Diseases.

Antimicrobial use and resistance is an important public health issue with a direct impact on communicable disease control.
During 2011-12 the SA Rheumatic Heart Disease Control Program was established to reduce the morbidity and mortality associated with RHD in South Australia. Program activities focused on reducing recurrences of acute rheumatic fever (the precursor of RHD) by improving adherence to long-term preventive penicillin injections. A project to estimate the prevalence of RHD was approved, funded and completed, and a Program Advisory Group was established. The statewide South Australia RHD Register was developed and commenced activity. Assistance was provided to health services to improve local systems for managing RHD. An education resource pack was developed and training sessions were provided to private and public health services, and at professional meetings, to promote awareness of RHD.

The public information campaign about protective measures for mosquito-borne disease, Fight the Bite, was reinvigorated with content updated to reflect current scientific and health advice in 2011. A range of multimedia Fight the Bite resources targeted to specific audiences was developed, tested and distributed.

The Regulations for Notifiable Diseases under the previous Act were updated and re-created, and a communications package, including an updated Report of Notifiable Conditions or Related Death form, was developed. Specialist Services worked with CDCB’s Infection Control Services to finalise and publish the Knowledge and Perception Survey of the National Antimicrobial Utilisation Surveillance Program. Specialist Services is also updating model documents to support healthcare worker (HCW) immunisation in consultation with ClinEdSA, Workplace Health and Safety, and education providers, with an initial focus on student HCWs.

The South Australia RHD register has been implemented (with linkages to the Northern Territory register) and strong partnerships were established with primary healthcare services, especially with Aboriginal community-controlled health services. Funding has been secured to June 2013. The new Fight the Bite campaign was launched in South Australia across the 2011-12 summer. Revised Regulations for Notifiable Diseases came into effect on 16 September 2012 and were successfully implemented.

Seventeen public health alerts and eight public health information communiqués were faxed to medical practitioners across South Australia in 2011 and 2012. Effective surveillance of influenza in South Australia was achieved and website material for clinicians on influenza management was updated. Specialist Services worked to ensure that a range of national policies and guidelines met jurisdictional needs. Staff members contributed to a number of peer-reviewed journal articles and delivered presentations at international, national and local public health conferences, including the Public Health Congress in Adelaide in September 2012.

Implementation of the South Australia RHD Register and RHD control activities will continue in 2013. Education and training activities will also continue to ensure ongoing awareness of notifiable disease surveillance among health professionals, and to maintain adequate capacity for communicable disease response in South Australia.
4

Public Health Protection
4 Public Health Protection

4.1 Immunisation

High vaccine coverage rates reduce the risk of transmission of vaccine-preventable disease in the community and also the potential cost related to morbidity and mortality from these diseases. A National Partnership Agreement between the Commonwealth and all the states and territories supports the supply of vaccines for implementation of the National Immunisation Program (NIP). Achievement of four key benchmarks is linked to a reward payment made to each state and/or territory.

Health professionals delivering immunisation need ongoing professional development to stay informed of the rapid growth and change that occurs within the NIP. Ongoing education and information sessions are delivered to health professionals to ensure that a well-informed workforce delivers the immunisation program safely.

Over the past 10 years South Australia has achieved high vaccine coverage rates in children, with the percentage of children in the state fully immunised by the time they are two years of age being equal to or greater than the Australian average (Figure 143). This level of vaccine coverage provides high protection against vaccine-preventable disease in children during their most vulnerable years.

Figure 143 – Percentage of children full immunised aged 12 months to < 15 months of age as reported on the Australian Childhood Immunisation Register 2002-2012
However, to maintain these high levels of protection, booster doses of vaccine are required at four years of age. By the time they are five years of age the percentage of children in South Australia receiving these booster vaccines (due at four years) is less than the national average although the gap is reducing (Figure 144).

Figure 144 – Percentage of children full immunised aged 24 to < 27 months of age as reported on the Australian Childhood Immunisation Register 2002-2012

Source: Australian Childhood Immunisation Register 2002-2012.

According to the Australian Childhood Immunisation Register, at the end of 2012 there was an increase in vaccine coverage of children aged five years, with 91.54 per cent of children fully vaccinated for that age compared with 88.13 per cent in 2011 (Figure 145).

Figure 145 – Percentage of children full immunised aged 60 to < 63 months of age as reported on the Australian Childhood Immunisation Register 2002-2012

Source: Australian Childhood Immunisation Register 2002-2012.

Note: In June 2008 assessment of being fully immunised changed from age 72-75 months to 60-63 months
Source: Australian Childhood Immunisation Register 2002-2012.
There was also a significant increase in vaccine coverage of Aboriginal children in all age groups compared with the previous year. Specifically, there was an almost eight per cent increase in vaccinated Aboriginal children at five years of age. The gap in vaccine coverage between the general population and Aboriginal children at five years of age is closing, with a decrease from 8.52 per cent in December 2011 to 3.97 per cent in 2012. Also, vaccine coverage of Aboriginal children at 12 months was significantly lower in 2011 than coverage of non-Aboriginal children of the same age, and initiatives are in place to close this gap.

Low vaccine coverage rates allow transmission of disease in the community, and this can be a problem for babies too young to be vaccinated. The recent increase in reports of whooping cough highlights the need to maintain timely vaccination and high coverage rates.

Not all vaccines required to prevent the spread of infectious diseases in the community are included in the NIP, and there is a rapidly increasing cost pressure on SA Health. The highest costs are in the provision of vaccinations for refugees and overseas students in order to protect the general community, and in the provision of rabies / Australian bat lyssavirus post-exposure prophylaxis.

Public Health Action on Immunisation

A campaign called ‘Big Help for Little Adventurers’ was launched in 2011. This aimed to raise awareness in parents of children aged 3½ years that booster vaccines due at four years of age should be given prior to their child starting kindergarten. Parents of children who turn 3½ receive a children's storybook to read to their child. The story relates the need for all children to receive booster vaccines to help protect them as they grow.

In 2012 the low vaccine coverage in Aboriginal children at 12 months of age was addressed through the launch of a campaign called ‘Help Me Stay Strong’. This campaign delivers information to parents of newborn Aboriginal children before they leave hospital, and reminds them of the importance of having their child vaccinated on time at two, four and six months of age.

Proposed changes to South Australian legislation will require registered nurses to undertake a specific immunisation training program if delivering vaccines without a medical prescription. To support this requirement and the high demand for professional education, an online education program is being developed to be made available to registered nurses in South Australia.

Future directions

Continued effort to monitor and maintain high coverage rates is necessary, as financial incentives to parents and general practitioners (GPs) have been removed.

Continuation of educational support for health professionals is vital, as numerous changes to the vaccine schedule are planned for 2013 and beyond.

Consideration and implementation of further strategies are necessary to support the continued involvement of local councils in the delivery of immunisation services.

Commencement of the online education program is on track for completion by June 2013.

Councils agreed to continue to support the delivery of school immunisation services, but have indicated that further funding will be necessary to continue their support after 2013.
4.2 Children’s Population Oral Health Program

Australia’s first National Oral Health Plan 2004-2013 includes the following two underpinning themes:

> a population health approach with a strong focus on promoting health and the prevention and early identification of oral disease;
> access to appropriate and affordable services – health promotion, prevention, early intervention and treatment.

South Australia’s Oral Health Plan 2010-2017 outlines the following information regarding dental decay among children:

> In 2001, South Australian children had the lowest level of dental decay in their permanent teeth when compared with other Australian states and territories. However, in recent years some of these gains have been lost and children in all socioeconomic groups are now experiencing more decay.
> Oral diseases cause hospitalisation that could be avoided, particularly in young children with early childhood caries. In 2011-12, 1 984 children aged eight years had a general anaesthesia in hospital for dental extractions and restorations.

The South Australian Primary Prevention Plan 2011-2016 has oral health as one of its priority areas, demonstrating its importance to general health.

Early identification of dental disease using general and oral health workers, as well as increasing the level of clinical prevention (fluoride and fissure sealants) provided by the School Dental Service (SDS), with a focus on prevention for children considered at high risk of developing dental caries, are central to strategies to improve oral health outcomes for children in South Australia.

Public health action on children’s’ oral health

The Children’s Population Oral Health Program includes a screening program for preschool children, involving Child and Family Health Service (CaFHS) nurses, Aboriginal health workers, and health workers in GP settings such as GP Plus, that has been implemented since 2007 to increase early identification of dental caries. CaFHS nurses have been the main referrers into the program, with 70 per cent of non-dental referrals coming from these nurses. In the past two years there has been a particular focus on screening younger children so that tooth decay is identified earlier, thus offering the best chance of reversing any early damage through the use of fluoride varnish. This has resulted in 47 per cent of children screened being aged three years and younger.

In early 2009 a revised service model for the South Australian SDS program was developed, with an increased focus on preventive services for children at high risk of developing dental caries.

Several strategies were part of the service model, including development of:

> a standardised protocol for caries risk assessment, to be used by all clinicians across the SDS program, in which patients are categorised as high, medium or low risk based on protocol application;
> ‘personalised preventive packages’ of dental care for patients in each category, including an aggressive prevention approach for high-risk children; in addition, a standard follow-up interval was established for each of the risk groups;
> a small suite of core clinical key performance indicators, again focused on preventive services for high-risk children that staff could clearly identify and directly target with their clinical service provision decisions.
Future directions

Using both non-clinical and clinical approaches to reduce dental caries has proven successful in South Australia. Non-dental professionals have identified the early stages of tooth decay and implemented evidence-based clinical prevention with fluoride varnish to protect and repair teeth.

There is unequivocal evidence that the use of fissure sealants and topical fluoride will reduce dental caries in children if applied to the right clients. Therefore, the significant increase in and focus on preventive services for high-risk clients that commenced in 2009 will continue, and is expected to have a further impact on dental disease levels of children in the SDS in future years.

It is vitally important that this focus continues and that preventive service levels increase year by year. The SA Dental Service (SADS) will monitor disease levels in clinics, provide the preventive services and target high-risk children for these services. This will be done with all SDS clinicians every three months by senior practitioners. There will also be a continued focus on preschool children at high risk of developing early childhood caries. This will be done through:

- consolidating the expansion of the Population Oral Health ‘Lift the Lip’ program in childcare centres;
- specifically targeting preventive services to all these children to reduce as much as possible the development of dental disease and the consequent need for some of them to have a general anaesthetic for their dental care.

In addition, a specific training program for midwives will be implemented to increase their oral health knowledge, and targeted information for pregnant women will be developed.

Public health action in oral health – Aboriginal dental services

The general and oral health of the Aboriginal and Torres Strait Islander population of South Australia is significantly worse than that of the general population. As a consequence, Aboriginal oral health is an important issue in the South Australian Oral Health Plan, the Aboriginal Health Care Plan and the Primary Prevention Plan.

In the past, despite suffering poor oral health, only a small percentage of Aboriginal people attended SADS clinics. However, through the introduction of specific Aboriginal oral health initiatives, there has been a marked increase in the proportion attending for dental services. Effective health promotion plays an important role in reducing oral health inequalities among Aboriginal people by increasing the accessibility and acceptability of dental services, and by raising the profile of oral health as an integral part of primary health care.

Current programs and initiatives

SADS has several programs that focus on access to dental services for Aboriginal people. Community dental and SDS clinics across the state provide general and emergency dental care for Aboriginal children and eligible adults. The Aboriginal Dental Scheme works in rural areas to also provide dental services through private dental practitioners. In addition, SADS works in partnership with the Aboriginal Community Controlled Health Organisation to provide dental services at Tullawon, Nganampa, Pika Wiya and Umoona Tjutagku health services, and has visited remote areas near Oodnadatta.

In 2005 the Aboriginal Liaison Program began, with the aim of improving the oral health of eligible Aboriginal people in South Australia by increasing the number of people accessing mainstream dental care. In 2011 this program was expanded with additional funding through the Closing the Gap initiative and renamed the Aboriginal Oral Health Program. Under this program the Aboriginal Liaison Program expanded to all 26 community dental clinics in SA. It included a focus on increasing the use of Teen Dental Vouchers by Aboriginal teenagers, and included culturally appropriate resources and targeted programs for pregnant Aboriginal women and young children.

The Children’s Population Oral Health Program integrates oral health screening and referral into general health and development checks for preschool children. Since the program’s inception in 2007, 7600 children have been referred to the SDS, 14 per cent of which have been Aboriginal preschool children. Over the past year there has been an increase in the number of Aboriginal preschool and school-aged children attending the SDS.
4.3. Food policy

Point-of-sale kilojoule labelling on menu boards

As part of the South Australian Government’s approach to addressing the increasing health impacts of poor nutrition, overweight and obesity, the Minister for Health and Ageing, announced moves in March 2011 to require major fast food retailers in South Australia to display kilojoule information on menu boards.

Following consultation, draft amendments to the Food Regulations 2002 were made in February 2012, with a 12-month implementation period. The new requirements will apply to businesses that sell standardised foods from 20 or more outlets in South Australia, or 50 or more nationally. The types of businesses captured include burger, pizza, coffee, ice cream, beverage, bakery and salad chains.

Affected businesses were sent a user guide based on the national template to assist them understand the new requirements. SA Health also contacted businesses directly to ensure that they are aware of the new requirements and to determine whether they require assistance to prepare for commencement of the new Regulations.

The new requirements became enforceable on 23 February 2013. SA Health will undertake monitoring and evaluation activities in 2013, and consumer education will also be rolled out in 2013 to support this initiative.

Social Development Committee inquiry into ‘scores on doors’

On 23 November 2010 the South Australian Parliament passed a motion from the Hon. John Hill, Minister for Health, that the Social Development Committee (SDC) investigate and report on the merits or otherwise of schemes that provide information to the public on the results of food safety inspections and non-compliance with the Food Act 2001.

The SDC provided its report, titled ‘Inquiry into Food Safety Programs, the 33rd Report of the Social Development Committee’ to the Minister in September 2012. The report makes 20 recommendations relating to food safety rating schemes and is available on the South Australia Parliament website under ‘Completed inquiries’ at www.parliament.sa.gov.au/Committees/Pages/Committees.aspx?CTId=5&CId=182

SA Health, with input from other state government agencies, assisted the Minister to prepare a response to the recommendations of the SDC which was noted by Cabinet on 14 January 2013, and subsequently tabled in Parliament on 6 February 2012.
Working with local government

Food regulation in South Australia is a partnership between state and local government, and an Memorandum of Understanding (MoU) for the Exercise of Functions under the Food Act 2001 (Food Act) clarifies the enforcement responsibilities of the parties. The MoU also includes an agreement for SA Health and the LGA to establish a plan to work together to continuously improve food safety and the effectiveness of the Food Act.

The consistent administration of the Food Act is recognised as important to food businesses and enforcement agencies within the state and nationally.

The working group, with representatives from SA Health, local government and EHA, meet quarterly to review the progress of the plan and report annually to the Public Health Council and the LGA executive.

Work has commenced on seven of the current 14 projects, with one project being completed. The department is the lead agency on three projects and co-lead on another, and the LGA is lead agency on the remaining three projects.

Project 1 (Risk Classification and Inspection Frequency) of the work plan has continued to progress in 2011-12, with a draft system being developed. This project has the objective to ‘develop a statewide food business risk classification and inspection frequency system based on inherent risk, which sets initial and maximum and minimum inspection frequencies’. Consultation is continuing with local government, and the risk classification system is being trialled by four councils as part of a Project three (Food Act Toolkit) work group.

The purpose of Project two was to identify the aspects of Food Act administration where consistency is most important, and define expectations of the system. Principles to underpin inspection and enforcement methods were developed, as was a toolkit framework for use in Project three (Food Act Toolkit). This project team has completed their current objectives.

Project three commenced in 2012, with the objective to ‘establish a ‘toolkit’ for Environmental Health Officers (EHOs) that assists with the consistent interpretation, monitoring and enforcement of the Food Act and Food Safety Standards’. A project team has been convened, with its first task being to trial the risk classification system developed under Project one.

Work on Project 10 (Primary Production Standards) has continued its objective to ‘agree and communicate roles and responsibilities for primary production standards’. A framework approach proposed by SA Health to administer the Primary Production & Processing (PPP) Standards in South Australia under the Food Act was sent to all local councils. Feedback from this consultation was used to finalise individual policies on PPP Standards for seafood and ready-to-eat meats. These policies, together with tools for EHOs and food businesses, were circulated in 2012. This will become an ongoing project as national PPP Standards are developed and implemented.

In 2013 the work plan will be reviewed by the working group in light of the work that has been completed, the status of current projects and the report of the SDC into food safety rating schemes.

Food standards surveillance: monitoring compliance with the Food Act 2001

The Food Policy and Programs Branch (FPPB) is responsible for oversight of the effective implementation of the Food Act 2001 to ensure that food presented for sale in South Australia is safe and suitable, and to prevent misleading conduct in connection with the sale of food.

Issues related to food safety come to the attention of FPPB from a variety of sources including routine food surveys; complaints from members of the public; reports from the food industry itself, local government and other regulatory agencies; and notification of illness from the CDCB.
Public Health Action on Food standards surveillance

Verification of compliance with the Australia New Zealand Food Standards Code (the Code)
FPPB is responsible for food industry compliance with chapters one and two of the Code, which prescribe food composition and labelling requirements. FPPB also becomes involved with compliance matters associated with Chapters three and four of the Code, which prescribe food safety requirements and PPP Standards in the course of surveys, complaints and investigation of illness.

Food sampling surveys
Sampling surveys are conducted of various foods that are of public health concern, or to confirm compliance with the Code.

Food-borne illness investigations
In response to reports of human illness, investigations of potential food sources are undertaken to identify and manage any risks to public health.

Food recalls
Recalls are initiated in circumstances where food has been identified as unsafe or unsuitable and requires removal from distribution, retail sale or consumers’ possession to protect public health.

Food-related complaints
Complaints are received from the public, and consumer and food industry representative groups. All complaints are recorded and triaged to ensure that significant food safety risks are managed with the highest priority.

Verification of compliance with the Code
Where FPPB identifies non-compliance issues in food businesses, corrective actions are addressed through a graduated and proportionate response. Ten warning letters were issued during 2011-12 and effective corrective action was verified.

Food sampling surveys
During 2011-12, 801 food samples were taken, consisting of 320 routine survey samples, 258 samples as part of food-borne illness investigations, and a further 223 in relation to surveillance of compliance with the Code.

Food-borne illness investigations
During 2011-12, 17 separate incidents involving pathogens, chemical contaminants or prohibited substances were investigated. In most cases a number of factors contributed to the food safety of the business breaking down, but cross-contamination, storage and cleaning were prominent issues in a high proportion of cases.

Food recalls
South Australian food businesses were responsible for one recall during 2011-12. Overall, South Australia was affected by 31 recalls where recalled product had been distributed in this State.

Food-related complaints
FPPB recorded 132 food-related complaints in addition to 541 enquiries throughout the year.

Future directions
In addition to maintaining existing programs, full implementation (including auditing) of the following PPP Standards in chapter 4 of the Code will occur.

- Standard 4.2.1 Primary Production and Processing Standard for Seafood
- Standard 4.2.2 Primary Production and Processing Standard for Poultry Meat
- Standard 4.2.3 Production and Processing Standard for Meat (in relation to ready-to-eat meats)
- Standard 4.2.5 Primary Production and Processing Standard for Eggs and Egg Product.
4.4 Safe drinking water

The Water Quality Unit is responsible for the regulation of drinking water supplies to ensure the provision of safe drinking water throughout South Australia, including regional and remote communities.

The provision of adequate supplies of safe drinking water is essential for maintaining healthy communities. This was reinforced in South Australia during the recent drought. The development of more descriptive drinking water legislation is a timely measure that is in step with calls to increase the diversity of drinking water supplies in response to climate variability and population growth. The need for new legislation was recognised in the state government’s plan Water for Good, included as Action 92 in the plan. The development of drinking water legislation is also consistent with national policy directions reflecting the importance of safe drinking water supplies for the protection of public health and community wellbeing, and the prevention of disease. In recent years safe drinking water legislation has been enacted in Victoria (2003), New South Wales (2006 and 2010) and Queensland (2008).

The Safe Drinking Water Act 2011 (the Water Act) and Safe Drinking Water Regulations 2012 (the Regulations) replace the regulation of drinking water under the Food Act 2001, which requires that drinking water is fit for purpose but does not provide guidance on how this requirement can be achieved or measured. This lack of guidance has been identified as a shortcoming by drinking water providers ranging in size from water carters and operators of accommodation premises to SA Water.

The water Act is based on implementation of the Australian Drinking Water Guidelines (ADWG), with key components being consistent with interstate and international legislation. These components include registration of drinking water providers, implementation of risk management plans (RMPs), routine audits and inspections, and provision of results to SA Health and consumers. The Water Act refers to a range of regulations to provide specific information required for effective implementation, including recognition of the ADWG, exemptions for domestic dwellings and low-risk premises, and content of RMPs.

SA Health aims to ensure that the safety of drinking water is protected, achieving this through:

- development of the Water Act and the Regulations, which include mechanisms for assuring and measuring the safety of drinking water supplies
- continuing to work cooperatively with all drinking water providers, in particular SA Water as South Australia’s major provider, to monitor and respond to potential risks to public health
- ensuring that appropriate remedial actions are undertaken to prevent health risk to the community in the event of elevated source water contamination, treatment failure or non-compliance of drinking water with health guidelines.
Safe Drinking Water Act and Regulations

The Water Act was enacted on 26 May 2011 following extensive consultation undertaken in 2009 and 2010. The draft Regulations were released for two months of public consultation in July 2012 in conjunction with an Explanatory Paper that provided further information on the key requirements of the Regulations. Consultation included correspondence with a broad range of stakeholders, meetings, public information sessions and presentations supported by an online presence. Responses were consistently supportive of the draft Regulations. The Regulations were created by the Governor of South Australia on 6 December 2012.

Water quality

Water quality in drinking water supplies is monitored through two mechanisms – regular reporting and incident reporting.

The data presented in Tables 37 and 38 indicate that high-quality drinking water was provided to the South Australian population throughout the reporting period. During the 2011-12 financial year, 100 per cent microbial compliance was achieved in the metropolitan area, with 99.94 per cent of samples collected from country customer taps also being free from *E. coli* presence. Compliance with health-related parameters in 2011-12 was reported as 99.79 per cent in the metropolitan area and 99.54 per cent in country areas.

Table 38 – SA Water customer tap samples free from *E. coli*, South Australia

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<td>100%</td>
<td>100%</td>
<td>99.96%</td>
<td>100%</td>
<td>99.96%</td>
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</tr>
<tr>
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<td>99.95%</td>
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</table>

Table 39 – Percentage of water samples compliant with ADWG health parameters (microbiological and chemical), South Australia

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<tbody>
<tr>
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<td>99.41%</td>
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Incident reporting is required in accord with the Water/Wastewater Incident Notification and Communication Protocol (the Protocol). Initially developed in 1998-99, the Protocol provides the basis for interagency communication of incidents, and includes a process for Ministerial and public communication where necessary. Incidents are categorised under the Protocol as follows:

> **Priority Type 1** incidents are those that are likely to cause serious risk to human or environmental health if immediate appropriate intervention is not taken. These incidents are likely to require immediate interagency meetings to consider responses and possible issuing of public advice.

> **Type 1** incidents are those that, without appropriate intervention, could cause serious risk to human health, and could cause or threaten to cause serious or material environmental harm.

> **Type 2** incidents are those that, without appropriate intervention, represent a low risk to human health, and cause or could cause low impact or restricted environmental harm.

The Protocol is subject to annual review, and two revised versions were issued during the reporting period, in July 2011 and August 2012.
Tables 39 (source water incidents) and 40 (drinking water incidents) provide summaries of water incidents in 2011-12, 2010-11 and previous years. There was a significant decrease in the number of Type 1 incidents reported in 2011-12 compared with the previous reporting period.

Table 40 – Source water incidents * reported (before treatment), South Australia

<table>
<thead>
<tr>
<th>Year</th>
<th>Priority Type 1</th>
<th>Type 1</th>
<th>Type 2</th>
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</thead>
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<tr>
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<td>14</td>
<td>26</td>
</tr>
<tr>
<td>2007-08</td>
<td>n/a</td>
<td>35</td>
<td>48</td>
</tr>
<tr>
<td>2008-09</td>
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<td>33</td>
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</tr>
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</tr>
<tr>
<td>2011-12</td>
<td>–</td>
<td>21</td>
<td>72</td>
</tr>
</tbody>
</table>

* Priority Type 1 incident category was introduced in May 2009.

Table 41 – Drinking water incidents * reported (after treatment), South Australia

<table>
<thead>
<tr>
<th>Year</th>
<th>Priority Type 1</th>
<th>Type 1</th>
<th>Type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
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</tr>
<tr>
<td>2007-08</td>
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<tr>
<td>2008-09</td>
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<tr>
<td>2011-12</td>
<td>2</td>
<td>67</td>
<td>49</td>
</tr>
</tbody>
</table>

* Priority Type 1 incident category was introduced in May 2009.

Future directions

The Water Act and Regulations come into operation on 1 March 2013 with a transitional period of up to 12 months for full compliance. An implementation plan has been developed to enable the Water Act and Regulations to become operational. The plan includes the development of a wide range of supporting resources and training for local councils on the administration of the new legislation. Consultation will continue with stakeholders, including drinking water providers and local government, throughout the implementation and transitional process.

Commencement of the new drinking water legislation will formalise existing arrangements between SA Health and SA Water, and provide clear guidance for other drinking water providers on the provision of safe drinking water. All drinking water providers will be required to register with the department and have an RMP in effect including routine monitoring and reporting of incidents. This will ensure consistency in practice for all providers irrespective of size or location.
4.5  Drought recovery and emerging issues

The Water Quality Unit is responsible for the provision of specialist advice on issues, including impacts of climate change and other emerging issues that may result in potential risks to public health through the use of recreational water, recycled water and drinking water.

The ‘millennium drought’ (2000-09) is widely regarded as the worst on record for south-eastern Australia, resulting in unprecedented low levels of River Murray inflows. Higher than usual rains at the end of the drought saw flows through the River Murray increase significantly in 2010-11. This resulted in a number of issues, including variabilities in source water quality, such as high turbidity and colour, and elevated concentrations of organic material associated with an extended blackwater event in 2011. Variable source water quality presented a number of challenges for the treatment of drinking water supplies sourced from the River Murray, including high-turbidity water, increased chlorine and chloramine demand, and the production of disinfection by-products. Variable source water quality continued into 2012 although the impacts were not as great as those associated with the blackwater event of the previous year. This resulted in more-consistent water treatment plant operations and better disinfection residual control in distribution systems.

Prolonged drought conditions also resulted in the formation of acid sulfate soils in exposed areas of the River Murray and Lower Lakes that were previously submerged. Left undisturbed, acid sulphate soils are harmless but, when exposed to oxygen through disturbance or drainage, they produce sulphuric acid and can lead to the release of heavy metals and other contaminants, posing a significant risk to the environment, water supplies and human health. The arrival of floodwaters at the end of the drought resulted in acid water draining from swamp areas in the Lower River Murray. Concerns about the impact on water quality, including drinking water supplies and recreational use, were raised, particularly the potential for elevated levels of nickel and manganese. In response to these concerns, extensive modelling was undertaken by SA Water and the EPA, including low flow and other worst case scenarios. No health concerns were predicted.

An increase in the level of Cryptosporidium detection was noted in the lower reaches of the River Murray during 2011. In addition, patterns of E. coli detection have changed significantly in the Lower River Murray in recent years. Changes in drainage patterns from adjacent land have led to more-rapid and direct transfer of faecal pollution to the river, and this has been raised as a potential mechanism of contamination. Changes in microbial water quality could have two potential public health impacts – increased reliance on treatment of source water for drinking water supplies derived from the River Murray, and the safety of the river for recreational activities.
Public Health Action on drought recovery

SA Water implemented a number of strategies in response to the variable River Murray source water quality. This included additional monitoring programs to track the progress of blackwater and floodwaters and their potential effects on water quality and plant operations.

A number of remedial actions in response to the production of increased levels of disinfection by-products were also implemented by SA Water throughout the reporting period – aeration, reduction in storage tank levels to reduce contact times, and adjustment of chlorine and chloramine doses including the use of booster stations. In 2012 these actions successfully resulted in the closure of all ongoing incidents related to disinfection by-products.

SH Health was involved in regular meetings with SA Water and other agencies to discuss issues associated with the drought and subsequent flooding, and the potential impacts on water quality and public health. A risk assessment was undertaken by SA Health on the potential health impacts associated with acid sulphate soils and drainage water, which found that there was no risk to public health through drinking water supplies sourced from the River Murray or recreational use of the river. As a precautionary measure, warning signs and exclusion zones were put in place near affected drainage outlets between Mannum and Wellington to prevent people drawing or coming into contact with undiluted drainage water.

In response to changing microbial water quality in the Lower River Murray, the department commenced a project in 2011 to investigate changes in water quality and potential risks to drinking water supplies and recreational use of the river. The monitoring-based project will examine potential sources of contamination and whether new point sources have emerged as a result of changes to the physical environment associated with the drought and subsequent above-average flows.

Despite on-going issues with water quality arising from the drought and the subsequent increase in flows through the River Murray, the safety of drinking water supplies and recreational use of the river was maintained throughout the reporting period.

Future directions

The department will continue to work closely with SA Water, the EPA and other agencies on the impacts of climate variability on drinking and recreational water quality. This includes reviewing monitoring programs and results as well as consideration of any remedial actions, including changes in plant operation, to ensure the continued protection of public health. Risk assessments of potential health impacts will be undertaken where required for emerging issues.

The Lower River Murray microbial risk assessment project will continue, with completion of the final report estimated to be in late 2013.
4.6 Reducing lead exposure in Port Pirie

Children in Port Pirie are exposed to high lead levels from past and current smelter operations. Research over the past decade has indicated that lead may be detrimental to a population of exposed individuals, especially children, at levels near the NHMRC 1993 guideline value of 10 micrograms per decilitre (µg/dL). In 2009 the NHMRC further recommended that ‘all children’s exposure to lead should be minimised’ and ‘all Australians should have a blood lead level below 10 micrograms per decilitre’.

Although decrements in cognitive function of an individual due to lead exposure at low levels cannot be clinically detected, the implication for a population of such exposed children can be demonstrated. For this reason there has been a concerted effort to find a way to reduce the Port Pirie smelter’s lead emissions but allow it to remain a viable operation. Without a major change in the technology used for smelting of lead ore, it is highly unlikely that acceptable lead exposure levels would be possible.

SA Health has been working with the Port Pirie Transformation Steering Committee in relation to the transformation of Nyrstar’s smelter. The proposed transformation will introduce new technology that has limited avenues for fugitive emissions of lead and other pollutants, leading to lower lead-in-air concentrations and hence reduced contemporary contamination of children’s living spaces and the environment. However, legacy contamination in the environment will require ongoing management, including remediation of soil and de-dusting of homes. Ongoing case-by-case management of vulnerable children is also required, to reduce exceedances of the national goal for lead exposure.

Children’s exposure in Port Pirie is managed on an individual basis, with their blood lead concentrations tested at least yearly by a capillary method. Children with potential for higher exposure may be tested more often to ascertain whether exposure reduction strategies are being effective. Figure 146 shows the percentage of children that exceeded 10 µg/dL at any time in each year for the past 10 years. In 2012, of the 562 children tested, 27 per cent (142) equalled or exceeded 10 µg/dL at least once in the year. Children who exceed 20 µg/dL are of concern and in need of additional exposure reduction strategies, such as relocation to a cleaner environment. In 2012, 17 children exceeded 20 µg/dL at least once, although by December 2012 only 14 exceeded this level.

Figure 146 – Percentage of children who reached or exceeded a blood lead level of 10 µg/dL at any time in each year of testing
The Port Pirie Environmental Health Centre works with children and their families, with the aim of improving children's health and wellbeing by focusing on primary prevention, detection and intervention to reduce the effects of lead while recognising the interconnectedness of the other determinants of health. It provides blood testing to monitor the lead levels of pregnant women and children aged 0-5 years; case management of children with elevated lead levels; community education and advice programs; loan equipment to assist with residential lead contamination; testing of dust, paint, soil and water for lead contamination for families identified at being at risk; and assistance with the monitoring of lead in air. Together with the Public Health Services, it is also involved in research into strategies to reduce exposure.

4.7 Resolving cases of severe domestic squalor and compulsive hoarding in instances where a public health risk is evident

Severe domestic squalor refers to households that are so cluttered that ‘normal’ household activities (e.g. cooking and sleeping) are significantly impeded or not possible. Situations of severe domestic squalor are extremely complex and inherently difficult to resolve. In extreme cases there may be a risk to public health, and local council officers are required to use public health legislation to minimise these risks.

Situations of severe domestic squalor may involve a number of complex factors such as mental health, housing, fire safety and animal welfare. These factors need careful consideration and collaboration with other relevant agencies while the public health risks are being addressed, and as part of a broader and holistic resolution/action plan.

To address these issues, the department is developing a severe domestic squalor guideline and associated public health policy (under the South Australian Public Health Act 2011). The guideline promotes a client-centric approach to management of cases of severe domestic squalor based on interagency collaboration and effective risk management.

The public health policy provides guidance to local council officers when applying the general duty provision in the South Australian Public Health Act 2011 in their dealings with incidences of severe domestic squalor.

Both the guideline and policy will undergo consultation before being released as part of the South Australia Public Health Act 2011 implementation plan.

4.8 Bushfire health risks and mitigation strategies for residential aged care and country hospitals

Following the tragic bushfires in Victoria in 2009, a number of Executive Officers / owners of aged care facilities approached SA Health's EMU seeking advice and help on how to respond to protect the health and wellbeing of their residents should a similar event occur in South Australia. A small group met to discuss the risk that residential aged care and country hospitals faced, and it was recognised that work was required to improve the mitigation strategies in place at the time. To achieve this, the State Emergency Management Committee endorsed the establishment of a subgroup of the State Bushfire Taskforce, and funding was successfully sought from the Natural Disaster Resilience Program to risk assess and implement strategies to increase the resilience of these facilities.

The project has highlighted a number of issues, many of which have been able to be addressed – in particular, the ability to safely evacuate or invacuate. In the first instance, 40 sites were identified by the project team as being located in medium to high fire risk locations across the Adelaide Hills, Clare and Pt Lincoln regions. These and a further 40 sites were risk assessed for the management of bushfire risk and smoke and ember attack. In response to the risk assessments, facilities were provided with reports that listed potential risks and mitigating actions. It was also identified that there was a significant need for information and education across facilities as a whole.

Phase three of the project is underway and will continue to work on the process of invacuation and evacuation using an all-hazards approach. This will include training, education, planning and site preparedness geared towards meeting both options, to increase knowledge and thus resilience, and to build flexible and adaptable response plans to suit multiple situations.
Over time the aims are to ensure that the Zone Emergency Management Centres (ZEMCs) have a solid understanding of the risk faced by individual facilities for fire, flood and earthquake, and what this means collectively for a zone; and to incorporate this knowledge into a regional response. This will need to be undertaken on a progressive basis to strengthen relationships and develop links, thereby enabling the transfer of intelligence and knowledge.

The project is now in its third year and has assessed all identified high-risk residential aged care and country hospital sites. The assessment process conducted by a Country Fire Service subject-matter expert also provided recommendations to each facility to enable them to increase their resilience and, wherever possible, allow the facility the option to choose to safely shelter in place (invacuation) as opposed to evacuation of the patients/residents. This was seen to be the optimal outcome where safe to do so. Evidence has shown from other critical events that morbidity and mortality increase, especially for the elderly and vulnerable, if evacuation occurs.

Three full-day workshops and numerous presentations and education sessions have been held. Exercises have been conducted to test the ability of sites to both shelter in place and, if the need should arise, to evacuate, and have included the use of a variety of transport means with assistance from the Department of Planning, Transport and Infrastructure.

A geospatial information system has been built for use by the SA Health Incident Room/Control Centre and shared with other agencies to mount a collaborative government response in the event of an emergency incident.

A new website has been developed that includes information and templates to assist facilities to undertake their own ongoing assessment and preparedness planning process. Mitigation strategies following initial risk assessment have seen the Bushfire Attack Level rating of many sites improve considerably.

The project has increased the cooperation between agencies, in particular SA Health and the federal Department of Health and Ageing.

Future directions
The project is now moving the focus to an all-hazards approach to encourage facilities to look beyond bushfire, and will include such risks as earthquake, flood and human disease.

During phase three we will also commence engagement with those ZEMCs and Zone Emergency Centres (ZECs) where we know there are high fire risks that need consideration for planning and response purposes.

The work from phases one and two has and will continue to be collated and mapped, as this provides a strategic ‘helicopter’ view of the state risk should a major emergency (such as Ash Wednesday) occur.

In addition to the aged care and country hospital work plan, a fact sheet in relation to hazards from bushfire smoke, developed for both health staff and the community, will be further reviewed and revised as appropriate before the next summer season.
4.9  Wastewater management

Risks to the public from inadequate sewage treatment and disposal are well known. Throughout SA over 400 000 persons rely on onsite wastewater systems or community wastewater management schemes to effectively manage sewage flows and, in many cases, produce recycled water for beneficial uses.

The Wastewater Management Section (WMS) of the department administers the Public and Environmental Health (Waste Control) Regulations 2010 (the Regulations) and, in association with local government, is the relevant authority for all matters relating to all non-SA Water wastewater collection, treatment and recycling systems.

New wastewater treatment and recycling technologies and products are frequently being brought onto the market throughout Australia. The Regulations administered by the WMS seek to ensure that these are designed, operated and maintained to a safe and sustainable standard prior to use.

Climate change projections and water shortages have resulted in an increasing interest from South Australians to recycle their wastewater onsite. The WMS provides advice to consultants, industry and the public on all matters relating to wastewater treatment and recycling.

Local authorities have allocated significant funds to recycling technologies in the last few years. As a result, the WMS has assessed and approved a number of recycled-water schemes including high-quality systems for industrial and domestic reuse.

With the advent of a new suite of Regulations and Codes in 2013, the WMS has been active in providing transitional training for local government officers, and will expand this to include industry and consultants in the coming months.

Members of the WMS are also participating in national regulatory forums and are members of committees developing Australian Standards relating to wastewater industry applications. The WMS has assisted in the assessment of new treatment technologies being undertaken by Flinders University and the LGA. This project encompasses producing different wastewater treatment system designs to reduce carbon footprints.

The WMS has also been active in providing advice on other legislation introduced in the past year, including development of the Water Industry Act 2012.

In 2012, 98 approvals for wastewater systems and products were issued by the WMS. These included:

> extensions to existing community wastewater management systems
> new treatment plants for communal systems and mine sites
> recycled water-reuse schemes (including high-quality recycled water applications)
> onsite wastewater treatment systems
> new products to produce recycled water.

Future directions

With implementation of the new Water Industry Act in 2013, the WMS will seek to retain South Australia’s leading role in wastewater recycling.

The WMS will continue to play an active role in the development of national standards, and to provide advice to industry and the public in matters relating to the collection, treatment and recycling of wastewater.
4.10 Extreme heat

South Australia continues to face extreme weather conditions including periods of extreme heat. The Hazard Leader for extreme weather including extreme heat in South Australia is the State Emergency Service (SES), but SA Health's EMU works in close cooperation with the SES to prepare for and manage the health-related problems that arise from very hot weather.

Extreme heat remains high on the health agenda during the summer months. In addition to preseason strategies, the EMU monitors the situation and, when extreme heat alerts are activated by the SES, provides written media releases and interviews to alert the community to the risk.

The EMU has the ability if required to activate the Health Incident Room – Gold Command/State Control Centre – Health to assist with information gathering and collation, and the response to extreme weather events. Data can be collated to monitor patient presentations and admissions to assist with the management of potential patient surges.

It is well recognised that more people succumb to heat than to bushfire, but heat is a silent killer, particularly of the elderly and vulnerable. In preparation for hot weather, a Heat Working Group meets to review mitigation strategies. The department provides preseason updates of information, including the Health Heat Action Plan, to all health services, and reminds service providers and staff to plan ahead.

A collaborative project between the University of Adelaide and SA Health has been established to look at the needs of CALD communities. This project has been funded through the Natural Disaster Resilience Program.

During 2011-12 all extreme heat mitigation strategies were reviewed, including the Keeping healthy in the heat guide. Since January 2011 in excess of 33,000 of these guides have been distributed to health services and the community across the state. A range of fact sheets have been updated and all are available with the guide on both the intranet and internet.

The Action Plan for health service staff has also been revised and is provided on a regular basis when hot weather occurs as a reminder to staff of the strategies in place.

During 2012 it was recognised that there remain gaps in our knowledge in relation to the impact of heat on communities in rural and remote areas. A small group has met to explore this issue, and submission of a grant application to undertake a project for further discussion, possibly with input from other jurisdictions across Australia, is being considered for 2013.
Public Health Indicators
Public Health indicators

The SA Public Health Act indicates that the State Public Health Plan (the Plan) will comprehensively assess the state of public health and wellbeing in South Australia. A similar provision applies to the public health plans developed by Local Councils for their communities.

This is an ongoing task that will be incorporated into developmental strategies in the Plan. This comprehensive dataset will include a population summary and a selected range of data and indicators that give a general overview of the main factors underpinning population health and wellbeing. There is ongoing consultation with the South Australian Public Health Council, Local Government and other public health partners to ensure that such a comprehensive dataset is developed.

As this indicator set is currently still under development, the data presented in the Chief Public Health Officer's report is not the final set of indicators but rather an overall picture of public health trends and activities in South Australia at the time of writing.

Public health planning selection criteria for data inclusion

To date a wide range of potential data sources have been identified that may be considered for public health planning processes and indicator development (see http://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/about+us/legislation/public+health+act). Because the scope of action for public health is very wide, there is a danger that a dataset could become unwieldy and difficult to manage within a planning framework. Ultimately, in the quest for comprehensiveness, it may become unfocused and uninformative because it is trying to do too much by describing all conceivable linkages and indicators.

The object therefore is to identify a focused dataset that is meaningful both for public health purposes and for those who are responsible for planning under the SA Public Health Act – this includes the Minister, Chief Public Health Officer, the South Australian Public Health Council, Local Councils and Public Health Partner Authorities.

The important first task in identifying a dataset is to find a place to start. The South Australian Public Health Council has considered this and has identified a range of prerequisites for indicator selection.

Indicator selection

A dataset should spur action and inform planning and reporting across public health functions, taking into account traditional public health concerns and issues as well as more contemporary approaches.

Local Government is a central partner in public health (as recognised in the SA Public Health Act). The dataset to support public health planning and reporting must be mindful of Local Government's role and informed by its practices. It is critical that the dataset be meaningful and be useful to Local Government. This means that indicators provided must be in a form that is meaningful to Local Government in terms of its role and purposes under the SA Public Health Act as well as other relevant Acts. Similarly, in order to build collaborative planning between potential public health partners, it is important to build a dataset that spans their interests and concerns and, where relevant, incorporates their data, drawing the links between them and public health.

When considering what to include in this dataset, it was important to not let it simply be a focus on problems that impact on health, but to be balanced with measures that can also protect or strengthen health. For example, a focus on positive indicators can be used as measures of community health and wellbeing, including volunteering rates, social cohesion, subjective wellbeing, library memberships, provision of footpaths, walkability indices and access to open space.

One framework that was considered valuable as a starting point in determining these indicators of community wellbeing was developed by the Community Indicators Victoria (CIV) project. This framework was developed with extensive consultation with universities, local and state government. The CIV project aimed to support the development of local community wellbeing including citizen engagement, community planning and policy making.

Measures of this nature can be pointers towards types of actions and strategies that are within the mandates of Local Government as well as other sectors of government and the non-government sector.
The identification of an appropriate dataset is informed by the following criteria, summarised in Table 41.

Table 42 – Summary of indicator selection prerequisites and indicator criteria assessment and selection principles (adapted from Healthy lives, healthy people: transparency in outcomes, proposals for a public health outcomes framework and the work of the SA Child Health Clinical Network Data Working Group).

<table>
<thead>
<tr>
<th>Prerequisites to indicator selection</th>
<th>Indicator criteria assessment and selection</th>
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<tbody>
<tr>
<td>It is statistically appropriate, fit for purpose.</td>
<td>It is a measure of an outcome or factor that has known linkage to a positive health outcome.</td>
</tr>
<tr>
<td>It can be collected in a timely fashion (preferably annually).</td>
<td>It aligns with relevant state government direction and priorities for public health.</td>
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<tr>
<td>It can be presented in a form that is suitable for multiple stakeholders including Local Government.</td>
<td>Evidence-based interventions exist to support the measure.</td>
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<tr>
<td>It is meaningful and useful to Local Government and allows cross-area comparisons.</td>
<td>It is amenable to public health intervention.</td>
</tr>
<tr>
<td>It is collectable within existing data.</td>
<td>Improvements in this measure will improve health-related quality of life (including mental health) and reduce premature mortality.</td>
</tr>
<tr>
<td>It avoids repetition of indicators reported elsewhere.</td>
<td>Improvement in this measure will help reduce inequalities in health.</td>
</tr>
<tr>
<td>It is limited to a manageable number in the first State Public Health Plan (which can be built on in the future).</td>
<td>It is meaningful and likely to be perceived as important by the public.</td>
</tr>
<tr>
<td>Inner: It is meaningful and likely perceived as relevant by Local Government and Public Health Partner Authorities.</td>
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</tr>
</tbody>
</table>

Future directions

Consultation is underway with key stakeholders to identify a suitable criteria to select the final set of indicators. SA Health will continue to work with the LGA, Local Councils and relevant public health partners over this first planning cycle to further develop and refine the dataset. While this will be a continuing process, it will be a priority in this first five-year planning cycle.

Population Research and Outcome Studies

Statewide population level data for these indicators and for the current Chief Public Health Officer’s report will largely be sourced from Population Research and Outcome Studies (PROS).

PROS provides high-quality population health information to contribute to the improvement of health and wellbeing outcomes of the South Australian population. It collects information on health status, related risk factors, behaviours, determinants and satisfaction with health services among the state’s population. The core business of PROS is the monitoring and surveillance of population health and chronic disease epidemiology. Information obtained from the surveys it conducts is used to inform policy, programs and health services. In January 2011 PROS transferred from SA Health to the University of Adelaide, and is now located within the School of Medicine, the Faculty of Health Sciences.
Issues
The key aims addressed by PROS are to:

> provide the best available epidemiological evidence on the impact of, and outcomes relating to, both established and emerging relevant health and wellbeing priorities. This is achieved through the generation of relevant, timely and reliable population information;

> provide the best available epidemiological information on priority chronic diseases/conditions and their determinants;

> disseminate information to stakeholders across divisions, regions, portfolio service units and relevant external agencies through networks, partnerships, teamwork and cross-divisional collaborations.

Current programs and initiatives

**The South Australian Monitoring and Surveillance System (SAMSS)**

SAMSS monitors population trends in state and national risk factors and chronic diseases so that the department has appropriate, timely and valid population health information to monitor health status; respond to population changes; and support planning, implementation and evaluation of health services and programs. The fact that SAMSS data has been gathered every month since July 2002 makes trend and time series analyses possible, allowing any changes over time to be detected.

From January 2013 SAMSS included some new questions to begin to further capture the wellbeing of South Australians. For the first time the general population will be asked: How satisfied are you with your life? To what extent do you feel the things you do are worthwhile? Do you feel happy? and importantly, are there people in your life that care about you?

These questions are based on new national wellbeing measurement work done in the United Kingdom, to which recent Adelaide Thinker in Residence, Prof Martin Seligman was a high-level advisor.

**The Health Omnibus Survey (HOS)**

An HOS is a face-to-face survey conducted annually since 1991 for government and non-government organisations responsible for servicing the health needs of the South Australian community. The goal of the HOS is to collect, analyse and interpret data that can be used to plan, implement and monitor health programs and other initiatives. The concept of an omnibus survey is that several organisations share the cost of conducting it, with each organisation paying only for those questions that are of direct relevance to their information requirements.

**The Health Monitor Survey**

Similar to the HOS, the Health Monitor is a user-pays service. It can be used by health professionals and policy makers for planning and to develop strategies. Three regular, statewide surveys are conducted each year. Additionally, other studies into particular aspects of health are undertaken on an ad hoc basis, and these may be statewide or within a particular region of the state.

**The South Australian Aboriginal Health Survey (SAAHS)**

The SAAHS is a SA Health project developed and managed by PROS and funded by the COAG National Partnership Agreement as part of the Closing the Gap Initiative. The project is funded for the period June 2010 to July 2013. In 2010-2011 data were collected from Aboriginal adults (15 years and over) using an eighty question face-to-face questionnaire which was administered around the state by trained Aboriginal interviewers. This type of representative population data collection is unique to Australia in an adult Aboriginal population and provides South Australia with stable estimates for chronic conditions, risk and protective factors, and cultural factors.
North West Adelaide Health Study

The North West Adelaide Health Study is a representative biomedical population cohort study of approximately 4000 adults aged 18 years and over recruited from the northern and western regions of Adelaide. It is an ongoing epidemiological research collaboration between the South Australian Department of Health, The University of Adelaide, the University of South Australia, The Queen Elizabeth Hospital, the Lyell McEwin Hospital and the Institute of Medical and Veterinary Science. The study focuses on priority health conditions such as asthma, diabetes, chronic obstructive pulmonary disease, arthritis, osteoporosis, and cardiovascular disease. Risk factors that are common to many chronic conditions including obesity, smoking, alcohol consumption, physical inactivity, high blood pressure and high cholesterol, are also investigated.

Outcomes

PROS delivered approximately 230 SAMSS-derived reports to SA Health between January 2011 and December 2012, covering a wide range of health-related topics such as nutrition, physical activity, chronic conditions and risk factors. In addition, eight Health Monitor surveys and two HOSs were conducted on behalf of government and non-government agencies during this time.

Future directions

PROS will continue to be a vital source of information for high-quality South Australian health-related data. Currently, PROS is in consultation with various government and non-government experts in an effort to maximise the efficacy of the children-specific questions in SAMSS.

For further information contact PROS at pros@adelaide.edu.au.
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11. South Australian Government. Submission to the senate Community affairs references Committee Inquiry into Australia’s domestic response to the World Health Organization’s (WHO) Commission on Social Determinants of Health report “Closing the gap within a generation”


