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Health in All Policies

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Guest Editorial

Ilona Kickbusch
2007 Adelaide Thinker in Residence
Director, Global Health Programme,
Graduate Institute for International and Development Studies, Geneva

It is becoming increasingly clear that there needs to be a major rethinking about how we govern health in modern societies. In most societies life expectancy and health expectancy are continuing to increase and people, on average, lead not only longer but healthier lives. But, at the same time, we are seeing an increase in chronic diseases and very high rates of obesity and mental health problems, and there is a concern that the next generation might not be as healthy as the present baby boomers. Governments are concerned that health care costs are consuming an increasing percentage of nations' GNP while the financing base is being reduced through demographic developments. South Australia currently spends about one-third of the state's entire budget on health and it is clearly not sustainable to maintain the present expenditure increases over time.

The focus of the health system is overwhelmingly on health care services and, with the current pressures of an ageing population, chronic disease explosion and increasing medical technology, health services are becoming increasingly resource hungry. Only a very tiny proportion of health care budgets are expended on prevention and health promotion, and to effect a change in priority is a difficult and courageous feat for any health minister. Yet we need to move to a new paradigm in health.

As Thinker in Residence[1] in Adelaide in 2007, my remit was to consider this, along with other health-related issues, under the rubric of 'Healthy Societies', with the goal of 'South Australia as a Health Society'.

This task involved working through a number of concepts:

- the need to demonstrate the central role that health plays in the economy, the community and social life of our society as it is presently structured, and to highlight the implications of this for the development of the state

Contents

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Department of Health

- as a starting point for intervention, to use the interconnections that already exist—the joined-up policy or whole of government approaches that are already happening
- to increase awareness that much of health is created outside the health care system.

All three concepts recognise the high relevance of the social determinants of health and the need for a strategy that takes into account the range of factors over which the health system has no control.

However, what is needed to advance both these concepts and an understanding of the social determinants of health is a change of mindset in decision-makers and the community as a whole. I call this change in mindset a 'Shift to a Health Society'. The strategy to achieve this change is 'Healthy Public Policy' or what is now called the 'Health in All Policies' (HiAP) approach.

South Australia is in the fortunate position, not by accident of course but by design, of having clear objectives for the state laid down in the SA Strategic Plan (SASP), which outlines the vision for a prosperous and environmentally sustainable state and sets targets to achieve this vision. This plan emphasises the strong interdependency between economic strength and social development, and therefore provides just the strategic starting point needed for the shift to a health society using an HiAP approach, analysing the interface between healthy people and a healthy economy.

This issue of the Public Health Bulletin focuses on the concept of HiAP and aspects of its implementation in South Australia during my residency. I mentioned briefly in my introduction the current economic drivers for managing health differently. Callaghan et al. in their paper make very clear the economic case for a paradigm shift in health expenditure. They analyse government health expenditure, both current and into the future, and how this is impacting budgets, taking into account both the ageing population and increasing costs of medical technology. This analysis leads them to the conclusion that other sectors of government, not just health, need to start taking responsibility for the health impacts of their policies, and adopting an HiAP approach to policy development in their portfolios.

This analysis of the current pressures on the health system is taken further by Dr Sherbon, the Chief Executive of the SA Department of Health, who presents data on the increasing prevalence of chronic disease and the pressure this is placing on health budgets. His conclusion is that improving population health requires far more than just excellent health services—which South Australia has. What is required is action on the social determinants of health to prevent chronic disease, and this action is mostly outside the remit of the health portfolio.

Of course, addressing health determinants does not automatically address health inequalities, which is another major concern for health systems that needs special attention. This issue is taken up by Professor Baum, Australia's only Commissioner on the World Health Organization Commission on the Social Determinants of Health. Baum provides us with information from the soon to be released report of the Commission. The release of the report will provide the opportunity for Australia to develop a national plan of action to advance health equity and close the gaps in health status between different groups of Australians. A major thrust of the report's argument, according to Baum, will concern the importance of all sectors taking action on social determinants to reduce health inequity.

In my own article I present the concept of HiAP, placing it into a historical perspective of healthy public policy developments including the WHO's 1946 defining of health, to the Ottawa Charter for Health Promotion and beyond. This is further complemented by Professor Kimmo Leppo, the former Director General of the Health Department in Finland, who moves the discussion to recent developments in Europe, particularly of course Finland, where HiAP was introduced as the lead theme when Finland had the EU Presidency. The Finnish experience tells us that their greatest progress has been in areas where the interests of different partners are moving in the same direction, using traffic safety and the prevention of accidents at work as a case in point.

This same advice is reflected by Jeff Tryens, one of the key architects of the SASP, who wants us to keep our 'trainer wheels' on in the beginning of implementation of the HiAP approach. He suggests working first in a coordinated way with 'natural health-related pairs' to achieve the Strategic Plan targets. Once easy gains have been made, the stage is set to use this experience when working on issues where health is not normally or naturally a consideration, such as in increasing productivity.

Geoff Mulgan, who coined the term 'joined-up government', provides insights into approaches to joined-up policy making across time and across the globe, with particular reference to the UK, with which he is most familiar. Mulgan's experience indicates that, while there is no formula for success, this approach is most successful where there are clear objectives, political commitment, viable shared structures and a culture of collaboration.

One of the key underpinnings of HiAP is that health is everybody's business. But, as Dr Buckett points out in his paper on health's role in HiAP, this does not mean that it is not health's business. Health has a key role, some of which includes getting its own house in order, but this must be as a catalyst or a guide to action—a provider of support, information, data and advice—and not as 'the boss'.

South Australia has made significant steps along the way to achieving HiAP. Much of this has been due to the high level of involvement from the Department of Premier and Cabinet (DPC) and the Department of Health (DH). HiAP can only be truly successful where there is real, serious and high-level commitment from the government. Tanya Smith, Director of the Cabinet Office, highlights the key role played by DPC in moving the HiAP agenda along. One of the key factors in this outcome is the Strategic Plan. Smith calls SASP and HiAP 'perfect partners'.

During my residency, a highly successful HiAP conference was convened jointly by DPC and DH to bring together policy makers to highlight the interdependencies and interactions between the objectives and targets within the Strategic Plan, and contribute to joined up policy making across government. In the lead-up to the conference, a number of targets in the plan were workshopped as case studies to look at how the target impacts health and how improved population health could assist in achieving the targets. Case studies of three of the targets—healthy weight, work–life balance and broadband usage—are presented here in some detail—by Herriot, Pocock et al and Murray—to give a flavour of this type of thinking. The case studies are discussed in the context of implementation of the HiAP model in South Australia in the paper by Williams, Lawless et al., who were closely involved in supporting me in my residency.

There can be no doubt that the current levels of increase in health budgets are unsustainable in the long term. Action is needed and it is urgent. If we are to ensure a quality health system that is responsive to the needs of its community, we need a paradigm shift in policy that considers the social determinants of health and doesn't just focus on ill health. Unless we do this we will not be able to afford the quality of health care we all want and expect. A shift to a Health Society through an HiAP approach with all taking responsibility for health is a way forward.

References

1. Information on the Thinkers in Residence Program in South Australia can be found at http://www.thinkers.sa.gov.au/home.html.

Health in All Policies: Setting the scene

Ilona Kickbusch
2007 Adelaide Thinker in Residence
Director, Global Health Programme,
Graduate Institute for International and
Development Studies, Geneva

Background

I became South Australian Thinker in Residence in February 2007 with the challenging agenda of creating a healthier society for South Australia. Very soon into the residency it became clear that the specific South Australian context would make it possible to develop a Health in All Policies (HiAP) model, building on experiences within the state, Australia and other parts of the world.

While HiAP is frequently understood to be an innovative concept, it has its roots in a strong theoretical public health framework that has weathered 150 years of review, analysis and debate. Today, HiAP combines classic public health knowledge on the determinants of health with an understanding of new forms of governance in the 21st century.

The history of public health documents the high relevance of HiAP—our life and health expectancy would not have grown exponentially without better living and working conditions, clean water, and nutritious and safe food. The policy decisions influencing this historic achievement for the health of populations in the first phase of industrialisation were not situated in a functional ministry of health, which did not exist at the time. Instead, they were part of an overall intent to create wealth, improve wellbeing and reduce societal conflict. In the golden age of public health in the late 19th century—the first health revolution—a social reform movement with many actors of different political affiliations evolved in response to the driving force of the industrial revolution. What they agreed on was that society had to cope with seminal change and that health was a central part of that process.

Today we are in a similar situation. The changes our societies are experiencing at the beginning of the 21st century are as radical as those 150 years ago, and again health is moving to the centre of the debate on wealth, wellbeing and equity. There is an increasing realisation that the functional approach developed in the last fifty or so years to address health in modern welfare states—the second health revolution—is no longer sufficient. Medical and health care related solutions do not exist for many of the problems that need to be addressed. Indeed, the health care sector has to compensate for and gives medical responses to problems generated elsewhere in society.

As health care costs rise and the chronic disease epidemic takes hold, the question of the determinants of health and how they should be addressed is central.

This awareness of the need for action 'beyond health care' increased during the 30 years of action on tobacco control and the 20 years of response to the HIV/AIDS epidemic. It became increasingly clear that these problems could not be resolved within the health sector alone. This expanded territory of health is gaining attention as countries try to cope with rising rates of obesity, childhood diabetes, binge drinking, motor accidents, demographic changes and health inequalities. After two decades of focusing on change in individual behaviour, a consensus is beginning to emerge (as in other areas of policy such as the environment) that the problems need to be addressed at the causal level, and that joined-up policy approaches to health are necessary as a consequence. In the face of such challenges, new questions arise such as: how to formulate a policy that focuses on the determinants of health; who should be involved in formulating it; what mechanisms are needed for implementation; how to ensure accountability and transparency; how to measure progress; and, of course, how to assign budgets.

The discussion on HiAP began on a global scale in the 1970s. Early steps in this direction had been taken in documents such as the joint WHO/UNICEF Alma Ata Declaration on Primary Health Care in 1978, which called for intersectoral action on health. It was based on a definition of health which moved away from a deficit model of illness and curative medicine to a positive concept constituting multiple dimensions: 'Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'. It focused particularly on the impact of classic determinants of health such as water, housing and nutrition.

In 1986 the WHO took this thinking one step further. The Ottawa Charter for Health Promotion outlined the critical features required to create healthy societies, people and communities, and stated unequivocally that health is created in the context of everyday life where people live, love, work and play. It drew attention to new determinants—such as supportive environments and people's empowerment—that need to be considered when planning health strategy. The charter described five key action areas:

- Build healthy public policy.
- Create supportive environments.
- Strengthen community action.
- Develop personal skills.
- Reorient hospitals and health services.

The first of these key actions was followed through in 1988 in a conference in Adelaide on 'Healthy Public Policy'. It focused on issues of policy that continue to be of central importance, such as supporting the health of women; food and nutrition; tobacco and alcohol; and creating supportive environments. The recommendations stressed the need to act on the positive underlying elements of a healthy society—what is now referred to as 'the causes of the causes'. For example, agricultural policies have a direct impact on food production and supply systems, which in turn influence what food can be purchased and consumed. The Adelaide conference also referred to the high relevance of equity as a determinant of health, and drew attention to the health disparities of the Australian Aboriginal and Torres Strait Islander populations.

Healthy public policy was discussed and practised in many ways following discussions at this conference, and has always remained an integral part of any health promotion strategy. In Europe it came back into focus when HiAP emerged as a major theme of the Finnish presidency of the European Union in 2006. It engaged senior government bureaucrats and academics alike from throughout Europe in a stimulating discussion about how to deliver joined-up policies that promote the health of the peoples of the European Union. At the close of the presidency a council conclusion was adopted which invited the EU to:

- apply parliamentary mechanisms to ensure effective cross-sectoral cooperation for a high level of health protection in all policy sectors
- take into account and carry out health impact assessments of legislative and non-legislative proposals
- consider the health impacts, with particular emphasis on equity in health, of decision making across all policy sectors.[1]

HiAP is now also a key principle of the new health strategy of the European Union.

What is Health in All Policies?

The main aim of healthy public policy is to create supportive environments to enable people to lead healthy lives. Government polices and policy making are increasingly linked and multilayered. Therefore, in developing healthy public policy the crucial policies and policy processes that affect the determinants of health need to be identified and acted upon by building alliances and partnerships.

HiAP is an innovative policy strategy that responds to the critical role that health plays in the economies and social life of 21st century societies. It introduces better health (improved population health outcomes) and closing the health gap as a shared goal across all parts of Government and addresses complex health challenges through an integrated policy response across portfolio boundaries.

Table 1: Health in All Policies: The 10 principles

A Health in All Policies approach reflects health as a shared goal of all of Government. In particular, it:

1. Recognises the value of health for the wellbeing of all citizens and for the overall social and economic development of South Australia—health is a human right, a vital resource for everyday life and a key factor of sustainability
2. Recognises that health is an outcome of a wide range of factors—such as changes to the natural and built environments and to social and work environments—many of which lie outside the activities of the health sector and require a shared responsibility and an integrated and sustained policy response across Government
3. Acknowledges that all government policies can have positive or negative impacts on the determinants of health and such impacts are reflected both in the health status of the South Australian population today and in the health prospects of future generations
4. Recognises that the impacts of health determinants are not equally distributed among population groups in South Australia and aims at closing the health gap, in particular for the Aboriginal peoples
5. Recognises that health is central to achieving the objectives of the South Australian Strategic Plan —it requires both the identification of potential health impacts and the recognition that good health can contribute to achieving SASP targets
6. Acknowledges that efforts to improve the health of all South Australians will require sustainable mechanisms that support government agencies to work collaboratively to develop integrated solutions to current and future policy challenges
7. Acknowledges that many of the most pressing health problems of population health require long-term policy and budgetary commitment as well as innovative budgetary approaches
8. Recognises that indicators of success will be equally long term and that regular monitoring and intermediate measures of progress will need to be established and reported back to South Australian citizens
9. Recognises the need to regularly consult with citizens to link policy changes with wider social and cultural changes around health and wellbeing
10. Recognises the potential of partnerships for policy implementation between government at all levels, science and academia, business, professional organisations and non-governmental organisations to bring about sustained change.

By incorporating a concern with health impacts into the policy development process of all sectors and agencies it allows Government to address the key determinants of health in a more systematic manner as well as taking into account the benefit of improved population health for the goals of other sectors. HiAP is committed to the achievement of sustainability and the health and wellbeing of both present and future generations.

Health in All Policies in South Australia

The HiAP process is a governance innovation that South Australia has introduced to further its commitment to joined-up government. Fundamental to this commitment is the state's Strategic Plan, which provides the legitimising framework for an HiAP approach. The details of this approach, the processes undertaken and progress to date are the content of other papers in this Bulletin. Significant first steps have been taken in South Australia to encourage the collaboration across portfolio areas and the innovative thinking required to cement HiAP in place.

Details of the HiAP principles developed in South Australia are provided in Table 1.

Conclusion

The South Australian Government is now considering how best to support the continued application of HiAP to South Australia's Strategic Plan. This includes effective ongoing governance mechanisms, building the capacity of all sectors to consider the health impacts of their policies, and expanding the technical skills of the health sector to support agencies to use HiAP's tools and processes.

References

1. Council of the European Union. Council conclusions on Health in All Policies, 30 November 2006. http://www.eu2006.fi/news_and_documents/conclusions/vko48/en_GB/1164897086637/

Health in All Policies: Perspectives from Europe

Kimmo Leppo
Former Director-General of Health Department,
Finnish Ministry of Social Affairs and Health
Adjunct Professor, Community Health,
University of Helsinki

Origin of the concept

When Finland introduced 'Health in All Policies' (HiAP) as the lead theme for her EU Presidency in the field of health in 2006, many people asked what it meant. The answer is simple. The phrase derives directly from the Treaty of the European Union, as agreed in Amsterdam (1997), article 152, which states: 'A high level of human *health* protection shall be ensured *in* the definition and implementation of *all* community *policies* and activities' (italics added). This obligation and mandate gives the EU great potential to improve health and its equitable distribution by influencing various determinants of health which often lie outside the health sector. The existing potential had not been fully exploited, and the idea behind HiAP was to facilitate putting the principle into practice.

Background: WHO, Ottawa and Adelaide

The basic concepts and principles of HiAP are not new. The concept of intersectoral action for health was introduced by WHO in the 1980s, when primary health care in the broad sense of the word, together with intersectoral action, were seen as keys to health for all. In 1986 the WHO International Conference on Health Promotion endorsed the now classic Ottawa Charter for Health Promotion. The first of the five areas for action was 'Build Healthy Public Policy', which aimed to:

- put health on the agenda of policy makers in all sectors and at all levels
- combine diverse but complementary approaches including legislation, fiscal measures, taxation and organisational change
- identify obstacles to the adoption of healthy public policies in non-health sectors, and ways of moving them
- make the healthier choice the easier choice for policy makers as well.

Two years later, in 1988, the second WHO International Conference on Health Promotion was held in Adelaide. It focused on this first area of action and produced important recommendations on building healthy public policy.

The three concepts or principles mentioned above—intersectoral action for health, building healthy public policy, and HiAP—mean more or less the same, and can be used interchangeably. They all look at population health from a broader perspective than health care alone, and focus on influencing determinants of the level and distribution of health.

Review of recent developments in Europe, 2006

The EU Presidency theme of Health in All Policies was partly a continuation of the UK Presidency's 'Health Inequalities: a challenge for Europe', since intersectoral action is necessary not only to improve health levels but also, in particular, to reduce inequalities.

The main health event during the Finnish Presidency was a conference on HiAP held in Kuopio on 20–21 September 2006. It was preceded by a number of policy dialogues held in Brussels to explore and pave the ground, and involved nearly all member states of the EU in the preparations. In collaboration with the European Observatory on Health Systems and Policies, a major publication was compiled as an updated synthesis of knowledge and recent developments in the health sector.[1] The book was made available before the conference and covered the following themes:

- HiAP: the wider context
- sectoral experiences (heart health, world of work, food and agriculture policy in EU, alcohol policies, and environment and health)
- governance (health components in the policy-making process, national health reporting)
- health impact assessment (tools and applications)
- conclusions and the way forward.

The conference consisted of keynote speeches, panel discussions and workshops based mainly on the background documentation but also elaborating on themes that had not been covered by the publication, such as tackling health inequalities, the challenges of mental health, and bringing together a wide variety of recent national or regional experiences.

Policy implications

The Council of Health Ministers of the EU approved the conclusions on HiAP with recommendations to the Commission and the Member States on 30 November 2006. Even more importantly, the recent consultative document of the Commission *Enabling Good Health for All – a reflection process for a new EU Health Strategy* has a strong emphasis on HiAP. This augers well for future European health policy.

However, the proof of a policy is not in its design but in its implementation. Despite growing bodies of evidence and experience from successful interventions in various areas,[1,2] the major remaining challenge in this field is to fill the implementation gap, and move from rhetoric to reality. This will require skilful leadership, advocacy and diplomacy from the public health community; and involvement of all key stakeholders from governments at different levels, research institutions, voluntary organisations, and public and private bodies. It implies courageous tackling of and navigation through numerous conflicting or vested interests, building confidence and consensus where possible, and brokering gradual or incremental alignment between interests whenever feasible. All this can be done but it takes a lot of time and effort. Priorities have to be clear and focus needs to be maintained on doing what is feasible—small steps in the right direction are often better than trying to wage a war on all fronts. Because policy environments and styles vary greatly between countries, the context is very important, and there are no 'one-size-fits-all' solutions.

Some Finnish experiences

In Finland, the country I know best, it took some 15 years to cover the main fields of intersectoral action to tackle our major challenges in cardiovascular health, smoking control, food and nutrition policies, and injury prevention. This was documented for the Adelaide conference in 1988.[3] Now, 20 years later, the record is very encouraging in most of the focal areas of action. In the last 30 years coronary heart disease and stroke mortality have come down nationwide by 70–80%, mainly due to changes in diet and smoking patterns but more recently due to medical advances as well. The trend in lung cancer mortality, which was the highest in the world in the late 60s and still growing, was reversed in the late 1970s and has continued to decline since then.[4] Even in an extremely complex field like suicide prevention, a multisectoral program achieved a 20–30% reduction within 10 years.[5]

In our experience the greatest progress has been possible in areas where the interests of different participants are moving in the same direction. Traffic safety and prevention of accidents at work are cases in point. But even when it is more difficult to agree on common objectives, such as in food and nutrition policies, progress can be made. In our case it has not been feasible thus far to introduce targeted taxes or other legislative measures. Nevertheless, for example, major dietary changes towards lower animal fat intake took place through perseverance and consistent dissemination of public information. There are two examples that illustrate how consumers modified their behaviour according to recommendations.

The proportion of adults using butter as a spread on their daily bread diminished from over 60% to 10% in less than 10 years.[6] Even more interestingly, food producers anticipated outcomes and modified their supplies according to the expected changes in consumer demand. The prime example was in the pork meat and pig-breeding sector, where the fat content of Finnish pork meat diminished by nearly half in three decades.[7]

However, in addition to such success stories, there have also been serious failures. The gravest one in Finland has been in the field of alcohol policy. Alcohol is a major public health issue closely linked to violence and accidents of all kinds, and contributes considerably to social inequalities in health. To date, purely fiscal considerations have dominated policy-making in this area.

Future perspectives: Europe and the wider world

I see two challenges for Europe that are of paramount importance. First, the dominant paradigm of health policy should move from dealing mainly with consequences of ill-health to dealing more with determinants of health and ill-health. This is particularly relevant for the new member states of the EU, whose serious levels and patterns of death, disease and injury cannot be solved by curative approaches alone. Second, the grave inequalities in health, whether between nations in Europe or between socioeconomic groups within nations, cannot be tackled by sectoral measures alone. To level off social gradients we must build healthy public policies in practice. The health sector itself should be an active advocate and change agent in this direction. It has to strengthen its own capacity to deal with other sectors and participants who have legitimate, sometimes very different, interests. Without dialogue and diplomacy one cannot achieve health in all policies.

In addition to the recent European interest raised by debates on health inequalities and HiAP, I am confident that ongoing work by the WHO Commission on Social Determinants of Health[8] will provide a strong further impetus in this direction.

In view of such circumstances and background, it is gratifying to learn about the recent South Australian initiative to proceed with very similar ideas through an all-government approach to health promotion. What I understand to be unique in this case, is to incorporate a public health agenda into a revision of the government's Strategic Plan, which ought to ensure the best possible political ground for working intersectorally for health. If the recommendations from the 1988 conference in Adelaide are going to be put in practice somewhere in the world, I am very confident that it will be in South Australia from 2008 onwards!

References

1. Ståhl T, Wismar M, Ollila E, Lahtinen E, Leppo K (eds.) Health in All Policies: Prospects and potentials. Ministry of Social Affairs and Health and the European Observatory on Health Systems and Policies, Helsinki, Finland, 2006.
2. Mackenbach J. Health inequalities: A challenge for Europe. UK Presidency publication, London 2005.
3. Leppo K, Melkas T. Towards healthy public policy: Experiences from Finland 1972–87. Health Promot Int 1988;3:195–203.
4. Koskinen S et al (eds). Health in Finland. Finnish National Public Health Institute (KTL), Helsinki 2006.
5. Upanne M. Suicide prevention in Finland. UN publication, 1989.
6. Patterns of butter and vegetable consumption. Databank of the Finnish National Public Health Institute, 2005.
7. Fat content data from E Puolanne, Professor of Meat Technology, University of Helsinki (pers. comm.), based on food statistics, Finland.
8. WHO Commission on Social Determinants of Health, chaired by Sir Michael Marmot. To be published in 2008.

Joined-up government now and in the future

Geoff Mulgan
2007 and 2008 Adelaide Thinker in Residence
Director, the Young Foundation

All large organisations—whether they are governments, multinational companies or armies—face two common problems. One problem is coordination—how to cajole and encourage agencies, departments, units and professions to point broadly in the same direction, or at the very least not to undermine each other's work. The second problem is organisation and integration—how to align incentives, cultures and structures of authority to fit critical tasks that cut across the organisational boundaries (e.g. urban regeneration, environment, poverty, competitiveness) that roughly half of all public sector innovations now straddle.[1]

These problems are difficult because real states are neither monoliths nor pyramids, but are more like flotillas of boats, sometimes sailing in roughly the same direction but always competing for the wind and the sun and the favour of the flagship. Within bureaucracies the successful leaders are the ones who can not only command but also influence, inspire and persuade disparate agencies to work to the same ends. There has also been growing interest in how to go further—how to redesign structures, budgets and information to make collaboration more natural.

Joined-up government

I coined the phrase 'joined-up government' in a speech written for Prime Minister Tony Blair[2] to refer to both sets of issues—and indeed to all points on the continuum that runs between them. These issues have faced all the big imperial bureaucracies and every military command attempting to coordinate complex forces. In Britain similar problems led to the creation of multifunctional local government in the late 19th century as a joined-up alternative to the separate boards for sewage, water, gas and education. In business, companies have continually wrestled with the problem of horizontal coordination; some, like Shell, have overcome the substantial managerial challenge of implementing fully fledged matrix structures.

In public administration there is a long history of concern for the issues that take up so much time and energy—those with multiple causes and interlocking agencies that are never solved. There has also been much interest in alternative design principles that could shape government around problems (a ministry for public safety, for example) or particular parts of the population (a ministry for farmers).

Yet governments opted firmly for functional departmentalism during and after their great expansion in the late 19th century. A functional division of labour, with large vertically organised divisions or departments held together by a relatively small head office, made sense, not only for governments but also for large firms and city administrations, in an era when communication and the management of knowledge were costly and best organised within institutions and professions. Separate departments dealt with finance, education, defence or housing. Often departments developed close relationships with particular professions—health with doctors, education with teachers. Funds were then voted by Parliament for specific ends, with tight monitoring to ensure that they were spent correctly.

This model of dividing government up by functions was often very efficient—for example, in getting homes built or developing national education and health systems. It prevented corruption and waste, ensured clear lines of accountability and helped to get things done. But, over time, the weaknesses of this model have become more apparent. The 'tubes' or 'silos' down which money flows from government to people and localities have come to be seen as part of the reason why government is bad at solving problems. Many issues have fitted imperfectly if at all into departmental slots. Vertical organisation by its nature skews government efforts away from activities like prevention, since the benefits of preventive action often go to another department. It tends to make government less sensitive to client groups whose needs cut across departmental lines (the elderly are a classic example). At worst, departments and agencies dump problems onto each other—for example, schools dumping unruly children onto the streets where they become a problem for the police. Over time it reinforces the tendency common to all bureaucracies of devoting more energy to the protection of turf than to serving the public.

It also makes it harder for governments to think systemically and see the connection between things. In the UK by 2005 there were more people out of work because of mental health problems than were on the official unemployment register, yet the departments responsible for the two issues had no tradition of cooperation. Also, many governments contain departments whose policies effectively cancel each other out.

Many reformers in the past have tried to grapple with these problems. Almost every government has set up cross-departmental committees of varying degrees of effectiveness. Some have created super-ministers, for example the UK Prime Minister Edward Heath in the 1970s and Winston Churchill in the 1950s (who called them 'overlord' ministers). Some have streamlined their bureaucracies. Scotland in 2007 reshaped all its departments into six clusters, each with its own lead minister. In many countries governments have provided funding for projects that produce more than one service. Some have supported case managers in health and social care and, more recently, welfare, in a long history of attempts to build bridges between health and care professionals. Almost every government has supported some physical or virtual one-stop shop to make it easier for people to access information or assistance.

Local and micro reforms have been more successful than higher level attempts at cross-departmental working. Super-ministries can simply worsen the information overload at the centre and they require super-ministers to make them work. Many attempts at crosscutting arrangements—such as those on social policy in Britain in the 1970s—failed because of the lack of political will, inadequate buy-in by departments, lack of clarity about goals and insufficient attention to mechanisms for achieving greater integration. On their own, without substantial investment of time and political capital by the Prime Minister, interdepartmental committees and taskforces have tended to have relatively little effect on behaviour.

The same considerations explain why there was such frustration with partnerships even amongst its strongest advocates. Literally thousands of ostensibly joined-up partnerships had proliferated during the 1980s and 1990s in the UK and in much of north America. Although many did good work, too many diverted energy and confused responsibility, in large part because of the way authority and resources were distributed.[3] Another lesson that is confirmed again and again in studies of cooperation is that people are more likely to act in a collaborative way if they expect to have many future dealings with each other, whereas one-night stands are more likely to be exploitative.

During the 1990s and 2000s some tried to go further. The new public management of the 1980s had successfully encouraged government to be more focused, more organised around targets and performance, and more governed by market forces. But this model—premised on breaking down issues into their component parts—was not well suited to more complex problems. It was prone to even worse 'dumping' of problems across organisational boundaries, poor at knowledge sharing and ill-suited to the integrative potential of the internet. Another factor was the rapidly growing evidence accumulated on the interconnectedness of problems, for example the extent to which the avoidance of social exclusion is bound up with the balance between risk factors and protective factors in early life. And faced with evidence that barely a quarter of health improvements come from health services, ministers wanted to know where else they might direct their attention to get better results.

Such factors pushed joined-up government onto the agenda. But in themselves they did not give very clear indications as to how government should reshape itself.

Government generally works best when there are clearly identified critical tasks; authority and resources are distributed in ways that enable these tasks to be carried out; there is a clear sense of mission from top to bottom; and there is sufficient freedom and flexibility for those working as managers or in front-line delivery to get the job done.

Collaboration isn't best for everything. It is most likely to be necessary when individual public agencies lack either the power or knowledge to deal with a complex problem; and it is more feasible when the different agencies' goals, planning and delivery can be aligned. Because cooperation isn't natural, all the main drivers of behaviour within government have to be aligned to crosscutting tasks. That typically means:

- reforming how money is allocated to ensure that it goes to specific problems, areas or client groups rather than to functional bureaucracies
- reshaping how career rewards are organised—rewarding those who act collaboratively with promotions, honours and bonuses
- designing targets that are shared across agencies
- tackling the day-to-day cultures of the professions
- ensuring that information and knowledge are shared better at all levels
- ensuring clear leadership and responsibility for joined-up tasks
- designing structures in which people learn to collaborate through mutual favours and reciprocity.

Most important of all, joined-up government has to be aligned with political realities. That means strong 'ownership' from the top to override vested interests; and recognition for ministers, giving them horizontal as well as vertical responsibilities that they can use to produce political capital, and promoting those who perform well.

Over the last 20 years many governments have experimented with new models to cope with the mismatch between these structures and their main tasks. A wide range of methods have been tried to better align structure and strategy.[4] In the UK, for example, the department of education shared 5 of its 14 targets with other departments. New units were established cutting across departmental boundaries to ensure policy design that was less controlled by professional interests. In some cases new structures were set up to implement policy—seconding people from different agencies and merging budgets. Many budgets were linked to goals and ministerial jobs included combined vertical and horizontal responsibilities. Local structures were reshaped to bring together all the agencies with a role to play on a particular issue.

In other countries more radical steps have been taken. Finland reshaped its government in the early 2000s around a small number of high-level strategic goals, with political authority and budgets directed towards these (although, as elsewhere, they've found it hard to reduce the power of departments). In the US the new Department of Homeland Security attempted to coordinate the often competing agencies that were seen to have failed in protecting the US from terrorist attack. In Australia the state of Victoria went further in implementing networked governance for communities, shaping itself around places and people rather than programs, and finding subtler ways to link organic communities into formal governance structures. Joined-up government in many countries has also made it easier to act preventively and pre-emptively, and so deal with problems before they become too acute and costly.

Strategic audits

Joined-up government works best when the whole of government shares a common understanding of what needs to be done and why, for example through regular strategic audits or reviews. In the UK variants of such audits were carried out in 2003, and then again in 2005–06 and 2006–07. Elements included:

- detailed analysis of hundreds of international indicators to show how the UK was performing compared to other countries, and which countries were doing better and might offer useful lessons
- honest reviews of key areas of policy to see which were working and which needed change
- a detailed survey of how different parts of the population were faring
- futures exercises, with some attempt to clarify when different issues might become politically important.

The material was then used for a series of discussions with ministers and officials that led to broad conclusions about strategy, policy ideas and policy reviews. It helped shape the budget setting process and provided a framework for the government's next manifesto.

Where next?

The general lessons from around the world are that joined-up government has been most successful where there have been clear objectives, political commitment, viable shared structures at lower levels and strong cultures of collaboration. Equally important, success seems to depend on the key drivers of behaviour[5] —money, kudos and career rewards and targets—being in alignment.[6] Joining up can be encouraged top down but it can also grow bottom up.

However, joined-up government is about more than structure—it also depends on relationships. The emerging tools of social network analysis help to reveal how well these relationships work, with maps showing who connects to whom, who is helpful to others, and which junior staff glue the system together. Network analyses can show organisations that are clustered too tightly together or that are too loose.

The other requirement for the joining-up process to work is a shared understanding of how systems work, and a shared language for making sense of them. Systems thinking can be a source of creativity—seeing possibilities in new ways. It helps to emphasise the connectedness of contemporary societies and economies across apparently diverse fields and national boundaries.[7]

What will the future bring? Are we at the early stages of a fundamental transformation of government or is joined-up government just another fad? Although governments are necessarily quite conservative institutions, the pace of change is unlikely to lessen because the factors described earlier show no signs of receding. But it is unlikely that government will ever be predominantly organised in horizontal rather than vertical structures. If it was, there would be as many boundary problems as there are today. Instead, the future shape of government is likely to involve a combination of systems—vertical hierarchies for carrying out long-standing tasks with clear lines of management and accountability, and horizontal structures for determining strategy and carrying out shorter-term tasks.

In effect that would mean government evolving further in the direction it is already taking, and would involve, among other factors:

- more work becoming project based, with teams created for time-limited periods drawn from many different agencies
- more policy making being done in a crosscutting way, and with the close involvement of practitioners
- a larger share of budgets being tied to outcomes, and then allocated across departments and agencies according to how much they can contribute to outcomes
- more vertical functions being passed out to agencies, leaving behind slimmer but more integrated central staffs
- a much greater emphasis on shared knowledge management as the glue holding central government together.

In the longer term more radical options may also be feasible. Some have advocated that responsibility for whole systems (e.g. the criminal justice system) could be organised in an integrated way, potentially with purchaser–provider splits, rather than divided between many different agencies and professions each with their own budgets, structures and targets, as they are at present. Other ideas that would encourage joined-up behaviour include 'blind' strategy sessions, where prospective ministers invest time in devising and agreeing strategies prior to the allocation of ministerial posts.

In most contexts it is right to continue with an evolutionary rather than a big-bang approach. But, over time, the biggest gains will come from moving beyond the relatively modest joining up of the late 1990s and 2000s to more fundamental systems redesign. I have already spelt out many of the reasons for this, but one other concerns the motivations of bureaucracies. Contrary to the claims of the public choice school, most bureaucracies do not seek to maximise their resources or turf. Instead, what they often value as highly is autonomy or relatively undisputed jurisdiction. Moves towards joining up that reduce this autonomy for all players are almost certain to be resisted and are likely to be ineffective. By contrast, moves that create new structures and powers, or that give existing agencies greater autonomy to tackle a crosscutting problem, stand a far higher chance of succeeding.

The barriers remain substantial, and Harold Seidman's ironic words remain a healthy warning to all reformers. The quest for coordination, he wrote, 'is the 20th century equivalent of the medieval search for the philosopher's stone … if only we can find the right formula for coordination we can reconcile the irreconcilable.'[8]

The fact that there is no such formula should not be a counsel of despair. Joining up in all its forms has happened, is happening and will happen even more in the future. It may rarely, if ever, be perfect. But governments that can think and operate in 360 degrees will, over time, prove better at solving problems and meeting needs than governments that remain trapped in inherited vertical organisation.[9]

References

1. Sources include: Bogdanor V (ed.) Joined up government. British Academy, 2005; Sproule-Jones M. Horizontal management: Implementing programs across interdependent organisations. J Can Public Admin 2000;43(1):93–109; the work of Vincent Ostrom on the virtues of weak hierarchies and polycentricity; the OECD paper on Policy Coherence, 2003.
2. The speech was made in late 1997 and was to launch the Social Exclusion Unit. Various other people subsequently claimed to have coined the phrase—though in every case they appeared to do so later than this.
3. Governing partnerships: Bridging the accountability gap. London, Audit Commission, 2005.
4. Some of the underlying analysis and prescription was set out in a series of works at the think tank Demos: Mulgan G et al. The British spring. 1997; 6 P. Holistic government. 1997; 6 P, Stoker G. Governing in the round. 1998.
5. See http://www.nao.gov.uk/publications/workinprogress/joinedup1.htm
6. Wiring it up. UK, Cabinet Office Performance and Innovation Unit, 2000.
7. See Chapman J. Systems failure. London, Demos, 2002; and the presentation prepared by Mulgan, Mabey and Laing for the 2004 International Systems Dynamics Conference, Oxford, England.
8. Phillips DG, Seidman H. Currents and soundings: From the professional stream. Public Admin Rev 1996;26(4):329–333.
9. Further discussion of this typology and related issues can be found in Damanpour F et al. The relationship between types of innovation and organisational performance. J Manage Stud 1989;26:587–601; Rogers E. Diffusion of innovations. London, Free Press, 1995; Van de Ven A et al. The Innovation Journey. Oxford, Oxford University Press, 1999.

Social determinants of health: The key to closing the health equity gap

Fran Baum
Commissioner, Commission on the Social Determinants of Health
Professor, Department of Public Health
Flinders University

Introduction

The Commission on the Social Determinants of Health (CSDH; the Commission) was launched by the World Health Organization in March 2005 to report on what actions on the social determinants of health (SDH) need to be taken by governments and others in order to realise the goal of health equity between and within countries. The intent of the Commission has always been to both provide evidence on what actions work and to make practical recommendations about which policies will work in particular circumstances. The Commission's report, due to be launched in September 2008,[1] is expected to bring an impetus to national, regional and international efforts to act on SDH in order to improve health equity. The Commission is paying particular attention to what we can learn from:

- identifying existing programs, policies and initiatives that improve health equity
- enabling factors that will result in change at the upstream level
- how to move from theory to practice—collecting knowledge that is relevant to policy and advocacy.[2]

The publication of the Commission's report will prove particularly opportune for Australia because it will follow a change of national government in Australia to one which has an overt commitment to working for health equity. Thus, the focus of this paper is the current and future implications of the Commission's work for Australia, especially in terms of action to improve health equity, and the importance of all sectors taking action on social determinants to reduce health inequity. The work of the Commission has focused on contributions from 19 Commissioners (including its Chair Sir Professor Michael Marmot, the Nobel Laureate Professor Amartya Sen and the previous President of Chile Ricardo Lagos) and the following five streams of action:

Knowledge networks—the organisation of knowledge to inform health policy proposals and action on SDH. Nine knowledge networks (KNs) have each produced a substantive report on knowledge in their area and recommendations for action. The KNs are gender equity, evidence and knowledge, social exclusion, priority public health conditions, early childhood development, employment conditions, globalisation, health systems and urban settings.

Country action—demonstration and highlighting of the opportunities and possibilities of action, as formalised in country partnership agreements and action plans. The country work stream partners at the time of writing include Sri Lanka, Chile, Iran, Canada, England, Sweden, Kenya and Brazil.

Civil society—whereby the social mobilisation and long-term political sustainability of the SDH agenda is being organised through an extensive civil society process.

Reform of global institutions—including action on SDH and health equity in the policies and investment strategies of global institutions (including the G8, World Bank and global funds) through engagement of the institutions around key thematic issues emerging from KNs and of relevance to countries.

Reform at the World Health Organization—developing the plan for institutional change at WHO so that it can also provide long-term support to countries in advancing the SDH agenda after the Commission has ended.[3,4]

Potential for reducing health equity gap

While Australia has one of the highest life expectancies internationally, there is still considerable scope to reduce health inequities in this country. There is a 17-year difference in life expectancy between Indigenous and other Australians.[5] Seventy per cent of Indigenous peoples die before they are 65 years of age, while only 21% of other Australians do.[6] Significant differences also exist between people of different socioeconomic status in Australia. In 2000–01 a boy born in the most disadvantaged area had a life expectancy 3.6 years less than a boy born in the area of most advantage.[6]

The Commission's final report will make it clear that inequities can be dramatically reduced through action on SDH if there is political and social will to do so. The report will suggest that there is a strong motivation for governments to take action on health equity because the distribution of health is a marker of sustainable social and economic development. The extent to which wellbeing is distributed fairly reflects the performance of not just the health sector but all sectors—hence the importance of the Health in All Policies approach. Ensuring action on SDH is emphatically a whole-of-government issue.

Implications for Australian governments from the Commission's report

The Commission's report will speak to multiple players including governments in countries at all levels of development, international bodies such as the World Health Organization, the World Bank, and donor bodies including the Gates Foundation and the Global Fund. Australian governments will need to study the report and determine areas for action. This process is illustrated in Tables 1–3, which provide summaries of the main areas of recommendation from the Commission and suggests the implications for Australia.

Structural drivers for health equity

Structural drivers for health equity (Table 1) are those factors that set the context for reducing health inequities. Australia is well positioned in this regard compared to many other countries.

For example, our taxation system remains somewhat progressive despite the GST and other changes introduced by the Howard Government. There have been some successes in restricting market activity in favour of public health, with good examples being Australia's lead in tobacco control[7] and the success, using policies across a number of sectors, in reducing road traffic accident deaths.[8] These examples offer important lessons for how chronic disease could be reduced through structural changes to our living environments to encourage healthy eating and exercise.[9]

While some countries outrank Australia in terms of gender equity, advances have been made in recent years, especially in terms of government action on gender violence. However, further changes can still contribute to increasing the empowerment of both men and women to live equitable lives free of violence and the abuse of power.

Participation is widely recognised as an essential component of a healthy society. There is much that can be done by Australian governments to ensure that citizen voices can be heard in public debates on a wide range of topics relevant to health. The absence of meaningful participation and consultation with Aboriginal communities was one of the most common criticisms of the Howard Government's Northern Territory intervention. The power of an informed and interested citizenry has been shown in a number of forums, including in health policy. Examples include citizen juries[10] and the use of the internet, during the November 2007 election campaign, by the social movement *Get Up* to mobilise many citizens, particularly young people, to use their vote strategically. The Commission's report will make it very clear that these underpinning drivers of health equity are essential steps in closing the equity gap.

Table 1: Main steps for reducing health inequity—structural drivers

Structural driver	Possible Australian action
Fair financing—increasing proportion of national budget spent on human welfare and development, and ensuring allocation is fair and reflects needs	• Taking advantage of the current budget surplus to increase investment in education and preventive health care • Ensuring income tax is more progressive • Increasing the amount of GDP Australia spends on aid to low-income countries
Market regulation—markets are not good at ensuring good distribution so governments need to intervene to balance public and private activity	• Considering the role of government regulation in promotion of public health. Current examples are regulation of food advertising on children's prime television time, distribution of primary medical services, collapse of public housing, and increasing unaffordability of private housing
Gender equity—tackling gender bias in institutions	• Ensuring gender bias is tackled in all areas of life including parliamentary representation, private and public sector management positions, and access to employment and education • Continuing and intensifying actions to reduce gender-based violence
Fair decision making and participation—participation in decision making to reduce exclusion and promote equity	• Working to improve operation of parliamentary democracy • Encouraging genuine rather than token participation in government decision making • Funding independent bodies to support citizen participation • Supporting recipients of government funding to participate in critiques of government policy
Ensuring action on health equity in all policy areas—this responsibility needs to be shared across government portfolio areas	• Implementing Federal government-led efforts to improve coordination across sectors between federal, states and territory governments and in all jurisdictions • Implementing Health in all Policies approach as a major COAG goal

Source: based on draft report from the Commission on the Social Determinants of Health

Table 2: Main steps for reducing health inequity—conditions of everyday life

Conditions of everyday life	Possible Australian action
Universal early childhood development—a focus on physical, social, emotional, language and cognitive development is a great investment in health equity	• Ensuring the provision of publicly funded and affordable child care that pays attention to child development • Ensuring each jurisdiction has integrated services for young children that work across welfare, health, education, employment sectors • Ensuring workplaces are family friendly
Healthy places—communities and neighbourhoods can promote health and shape the behaviour of individuals	• Funding health promotion initiatives that aim to create healthy places and ensuring these involve multiple sectors and community involvement, and help to make healthy choices the easy choices. A national network of Healthy Communities initiatives would enable synergy and learning between projects • Focusing on environmental causes of illness rather than directly trying to change behaviours
Fair employment and decent work—will provide a sound basis for health equity	• Amending the work choices legislation to ensure workers have decent working conditions that balance their needs with those of employers, and restoring crucial collective bargaining rights • Ensuring a balance between work and life as a major aim of government policies
Universal health care—access to healthcare is a crucial social determinant of health	• Maintaining and extending Medicare and its universality • Ensuring there is universal access to dental care
Universal social protection across the life course—recognising the benefits of universal rather than targeted approaches	• Aiming for universality rather than targeting as the basis for social policies

Source: based on draft report from the Commission on the Social Determinants of Health

Table 3: Main steps for reducing health inequity—capacity for analysis, monitoring and action

Capacity and motivation to understand and act on social determinants	Possible Australian action
Social determinant literacy	• Recognising the need for professional development across sectors to generate an understanding of what works to bring about change in population (as opposed to individual) health • Including a segment in all professional training on the importance of social and economic determinants of health and wellbeing and the limitation of direct behaviour change
Civil society	• Funding NGOs such as Public Health Association of Australia which have been defunded in past 10 years to ensure independent citizen voice on social determinants and health equity, which will assist in reinforcing a social movement
Research	• More NHMRC funding of research and capacity building on research on the social determinants of health

Source: based on final report from the Commission on the Social Determinants of Health

Conditions of daily life that support health equity

The Commission recognises that it is the conditions of everyday life that determine whether people are healthy or unhealthy. Each of the areas listed in Table 2 require actions from a government that is not focused entirely on the needs of economic growth but, rather, argues for policies which balance economic, social, cultural and environmental concerns (for detailed discussion see Baum 2008).[11] Good conditions of daily life reflect living environments that encourage and support healthy behaviours. This is made possible when we invest in our children's education, make living environments healthy and sustainable, promote fair and decent workplaces, and provide universal access to health care and a measure of universal social protection across the life course.[12]

Capacity for analysis, monitoring and action

Action to close the health equity gap is most likely to happen when there is broad understanding of what factors improve population health (as distinct from the health of individuals) and how policy can be used as a powerful lever (Table 3). Professionals in many sectors need to understand the differences between population health and clinical medicine. Civil society is crucial in creating a constituency for action on social determinants. International movements such as the People's Health Movement[13] have been influential, and within this country professional associations such as the Public Health Association of Australia and the Australian Health Promotion Association have advocated for the importance of social determinants.

Finally, there is an urgent need for vastly increased investment in research on social determinants. Australia has been a trailblazer in producing information to support a focus on SDH. Since the first Social Health Atlas was published in 1990, atlases have been published for Australia as a whole and for individual states and territories.[14] They include a broad range of data on social inequity in general and, specifically, on health inequity. Data on health inequities has also been produced by Turrell, Oldenburg et al.[15] and the Australian Institute of Health and Welfare.[16,17] Australia, therefore, has a sound knowledge base from which to act and is ahead of many other nations, some of which may not even have vital registration systems let alone data on the extent of inequity.

The vast majority of the National Health and Medical Research Council's[18] budget is devoted to its medical brief and very little is invested in the public heath aspect. Research is needed to understand the social processes underpinning inequity and to evaluate interventions designed to address social determinants. Australia has been particularly poor in investing in such research, and very few policies are thoroughly evaluated in terms of their health and equity impact. Thus, a central task for the new Australian Federal Government is to increase investment in long-term research to monitor health inequities and to evaluate policy interventions to reduce them.

Conclusion

Sixty years ago the World Health Organization was founded and 30 years ago the Alma Ata Declaration on Health for All was written. It is fitting that the Commission on the Social Determinants of Health will report in the year of these anniversaries. The central messages about how we achieve health equity haven't changed even though the threats to health that we now face may have. The power of citizen participation, ensuring a health perspective in policies in all sectors, and nominating health and wellbeing as key aims of government decision making all remain central. South Australia has already picked up the Health in All Policies agenda from Europe and this could now form the basis of concerted action on the social determinants of health through the Council of Australian Governments (COAG). This is a golden opportunity to take the Commission's report and develop a national plan of action to advance health equity and close the gaps in health status between different groups of Australians.

References

1. Commission on the Social Determinants of Health. Closing the gap in a generation: Health equity. Taking action on the causes of the causes. Geneva: WHO, 2008 (forthcoming).
2. Irwin A, Scali E. Action on the social determinants of health: Learning from experience. Geneva: CSDH, WHO, 2005.
3. For more information about the Commission's work streams and, in particular, details of the scope of the 9 KNs, see the CSDH website at: http://www.who.int/social_determinants/en/
4. Irwin A, Valentine N, Brown C, Loewenson R, Solar O, Brown H, Koller T, Vega J. The Commission on Social Determinants of Health: Tackling the social roots of health inequities. PLoS Med 2006;3(6):e106. DOI:10.1371/journal.pmed.0030106
5. Australian Health Ministers Advisory Council. Aboriginal and Torres Strait Islander Framework 2006 Report. Canberra: Department of Health and Ageing, 2006.
6. Australian Institute of Health and Welfare. Australia's health 2006. AIHW cat. no. AUS 73. Canberra: AIHW, 2006.
7. Chapman S, Wakefield M. Tobacco control advocacy in Australia: Reflections on 30 years of progress. Health Education and Behaviour 2001;29:274–289.
8. Baum F. The new public health. Melbourne: Oxford University Press, 3rd edition, 2008.
9. Dixon J, Broom DH. The seven deadly sins of obesity: How the modern world is making us fat. Sydney: University of New South Wales Press, 2007.
10. Wiseman V, Mooney G, Berry G, Tang LC. Involving the general public in priority setting: Experiences from Australia. Soc Sci Med 2003;56(5);1001–1012.
11. Baum F. The new public health. See, particularly, Part 6 Healthy Societies and Environments, pp. 369–442. Melbourne: Oxford University Press, 2008.
12. Starfield B, Birn A. Income redistribution is not enough: Income inequality, social welfare programs, and achieving equity in health. JECH 2007:61;1038–1041.
13. People's Health Movement website http://phmovement.org/
14. Details of the Social Health Atlases are provided at http://www.publichealth.gov.au/publications.html
15. Turrell G, Oldenburg B, McGuffog I, Dent R. Socioeconomic determinants of health: Towards a national research program and a policy and intervention agenda. Brisbane: Queensland University of Technology, 1999.
16. Draper G, Turrell G, Oldenburg B. Health inequalities in Australia: Mortality. Canberra: Australian Institute of Health and Welfare, 2004.
17. Moon L, Waters A-M. Socioeconomic inequalities in cardiovascular disease in Australia: Current picture and trends since the 1990s. Bulletin no. 37. AIHW cat. no. AUS 74. Canberra: AIHW, 2006.
18. NHMRC is Australia's peak body for supporting health and medical research. For details see http://www.nhmrc.gov.au/

The impact of chronic disease and the role of population health

Tony Sherbon
Chief Executive
South Australian Department of Health

Introduction

It is clear that the most profound challenge currently facing the health system is the increase in chronic disease. This is true not just for South Australia or, indeed, for the developed world. The World Health Organization has warned that the global burden of chronic disease is such that by 2020 chronic disease will account for three quarters of all deaths.[1]

The health system must respond to this challenge with both immediate and longer term objectives. In the short term we need to respond with initiatives that prevent, detect and treat chronic disease. In the longer term we need to consider initiatives beyond the health system, which deal with the causal determinants of disease. The Health in All Polices approach featured in this issue of the Bulletin is one such approach.

What is the picture of chronic disease in South Australia?

The majority of the burden of disease in Australia is due to chronic disease, and its prevalence in the population is rising. This is a relatively recent phenomenon, with chronic disease overtaking infectious disease and injury as the dominant health problem only in the 20th century. It is estimated that chronic disease now accounts for 80% of the burden of disease, mental health problems and injury, as measured by disability-adjusted life years.[1]

The *South Australian Burden of Disease Study* found that three disease categories—cardiovascular disease, cancers and mental health disorders—were responsible for more than half the disease burden in this state.[2] In terms of premature death, the study found that cardiovascular disease and cancers account for more than 60% of premature deaths in South Australia.

In South Australia, at least 470,000 people over the age of 16 have at least one chronic condition. For example, 39% of South Australians have one of the following chronic diseases: arthritis, cardiovascular disease, asthma, diabetes, osteoporosis or chronic obstructive pulmonary disorder, all of which are largely preventable. And an estimated 12% of the state's population suffer two or more chronic diseases.[3]

The burden of chronic disease is even more concerning for Aboriginal and Torres Strait Islander peoples, with over two-thirds of excess deaths in this population attributed to diseases of the circulatory or respiratory systems or to endocrine, nutritional and metabolic diseases. Self-reported diabetes is almost four times as high in this population as for other Australians.[4]

What are the causal factors for chronic disease?

Is this explosion of chronic conditions related to an ageing population? There is no doubt that ageing is a factor, particularly in South Australia. However, we also know that people are arriving at older age healthier than ever before. International evidence suggests that we are now enjoying healthier years of life well into our old age.[5] We know that the genetic component of this picture is minimal at best—after all, we've lived with our DNA for millions of years. This surge of chronic conditions is very much a 21st century global phenomenon across all cultures and societies, both rich and poor.

There are a number of behavioural lifestyle risk factors which are associated with most of these chronic conditions, including:

- a sedentary lifestyle without sufficient physical activity
- tobacco use
- alcohol misuse
- a high-energy diet high in sugar, fat and salt, and consequent overweight and obesity.

These risk factors are cited repeatedly in many health studies and are identified as the principal causes of chronic conditions in our populations. But such factors didn't just appear by themselves at this time in our history. There is clear evidence that they have been caused by the way we organise our societies. The main drivers of chronic conditions and the risk factors which give rise to them are often referred to as the social determinants of health.

The essence of the evidence concerning the social determinants of health concludes that health is created or threatened according to a wide range of social and economic factors, including:

- overall economic activity and a fair distribution of the benefits of the economy
- access to meaningful employment
- access to educational opportunities
- good urban planning which promotes physical activity and social engagement
- access to good safe food
- good housing options and access to good transport
- effective support for families in the early childhood years.

What are the impacts of chronic disease?

The increased burden of chronic disease is putting increased stress on the health system and the health budget. The health budget is consuming ever more of the state's resources and, at current trends, could consume the entire state budget in the foreseeable future.

This is borne out by the Productivity Commission, which has made it clear that the impact of our ageing population's growing demand for health services, combined with an increasing burden of chronic disease and changes in health care technology, poses serious threats to the future prosperity of the state.

> 'The major source of budgetary pressure is health care costs, which are projected to rise by about 4.5 percentage points of GDP by 2044–45, with ageing accounting for nearly one-half of this.'[6]

There are also links between a healthy population and a healthy economy. As Ståhl et al state in *Health in all policies: Prospects and potentials*:

> 'Health and wealth are related. It has been shown that better health boosts rates of economic growth… For high-income countries it has been demonstrated that good health contributes positively to the economy while poor health can have substantial negative effects.'[7]

Reforms to the South Australian health system

Given the growing burden of chronic disease on the population, effective prevention and management of chronic diseases must be a key policy objective of any health system.

Our health services are among the best in the world, and we are very good at treating people once they are ill or injured and keeping them alive longer into old age. In South Australia the state government is engaged in a wide-ranging series of reforms and is undertaking a number of initiatives focusing on prevention, early detection and improved primary health care services. These include extension of GP services into the community, (what we are calling GP Plus centres), practice nurse initiatives, lifestyle and risk factor advisers and support officers, and community mental health services.

What else do we need to do about it?

These very significant initiatives and achievements mainly focus on risk factor levels of intervention. They involve prevention, detection and early intervention as well as efforts designed to aid self-management and the prevention of further complications for those who have already developed certain chronic conditions.

However, it is very clear from the evidence presented here that improving population health is about far more than having excellent health services. We need to take a population health, not just an individual health, approach. As stated in the South Australian Burden of Disease Report:

> '…the attainment of good population health is not simply a function of policy or even of medical science. Rather, it is influenced by a complex array of demographic, economic and social factors.'[2]

Because these factors are outside the health system, working on them requires us to move outside traditional health care approaches and directly consider the social determinants of health. A "Health in All Policies" (HiAP) approach does this and South Australia is working on such an approach with Thinker in Residence Ilona Kickbusch.

> 'The HiAP approach is based on the recognition that population health is not merely a product of health sector activities, but to a large extent determined by living conditions and other societal and economic factors, and therefore often best influenced by policies and actions beyond the health sector. In addition to the recognition that HiAP is about population health and health determinants, it also concerns addressing policies in the context of policy-making at all levels of governance…'[7]

This is the task we are setting for ourselves as we move forward in implementing the HiAP approach, which is dealt with in more detail by other authors in this Bulletin.

References

1. National Health Priority Action Council. National Chronic Disease Strategy. Australian Government Department of Health and Ageing, Canberra, 2006.
2. Department of Health. Population health in South Australia: Burden of disease and injury estimates, 1999–2001. Adelaide, 2005. http://www.health.sa.gov.au/burdenofdisease/DesktopDefault.aspx)
3. South Australian Monitoring and Surveillance System (SAMSS) January 2004–December 2006
4. AIHW report (2003) The Health & Welfare of Australia's Aboriginal & Torres Strait Islander peoples. Canberra: AIHW. (see pages 193 & 134
5. Mor V. The compression of morbidity hypothesis: A review of research and prospects for the future. J Am Geriatr Soc 2005;53(9Suppl):S308–S309.
6. Productivity Commission. Economic implications of an ageing Australia. 2005. http://www.pc.gov.au/study/ageing/docs/finalreport
7. Ståhl T, Wismar M, Ollila E, Lahtinen E, Leppo K (eds). Health in all policies: Prospects and potentials. Finland Ministry of Social Affairs and Health, 2006.

Health expenditure and ageing: Impact on South Australia

Rohan Callaghan
Economist, Revenue & Economics Branch
South Australian Department of Treasury and Finance

Stuart Hocking
Director, Economics, Revenue & Economics Branch
South Australian Department of Treasury and Finance

David Meier
Principal Project Officer, Policy Analysis & Government Enterprises Branch
South Australian Department of Treasury and Finance

Brett Rowse
Deputy Under Treasurer
South Australian Department of Treasury and Finance

Melinda Thorpe
Economist, Revenue & Economics Branch
South Australian Department of Treasury and Finance

Introduction

The following is based on the presentation given by Brett Rowse, Deputy Under Treasurer, Department of Treasury and Finance, to the Health in All Policies conference held in Adelaide on 21 November 2007. It is a summary of work undertaken by the South Australian Department of Treasury and Finance to assess the medium to longer term impact of population ageing on the South Australian Budget. The projections follow a similar approach to that used in the Commonwealth's Intergenerational Reports (2002 and 2007) and the 2005 Productivity Commission Research Report *Economic implications of an ageing Australia*.

The current level and future directions of government health expenditure and budget impacts in South Australia are assessed, taking into account both the ageing of the population and the costs and usage of medical technology. The value of the concept of Health in All Policies is considered in the light of the factors highlighted.

Modelling of future population age and health expenditure

Governments are interested in what might happen in the future (the next 40 years) to health expenditure. To this end, Australian governments have undertaken modelling to project future costs. The projections suggest that 'ageing will reduce economic growth at the same time that it intensifies demands for public services such as health, aged care and the age pension'.[1]

For the purposes of fiscal impact, the important demographic variable is the age *structure* of the population (as distinct from the overall rate of population growth).

Figure 1 shows how South Australia's population age structure is projected to change over the next 40 years based on ABS and Planning SA projections. There is projected to be an increase in the percentage of the population in the older age cohorts and a decrease in the proportions in the younger age cohorts and those of working age. For example, those aged 65 years and over are forecast to increase from 14.9% of the population in 2003 to around 27.5% in 2042. The proportion of the very old (85+ years) in the total population is projected to jump quite markedly from less than 2% to around 6.5%.

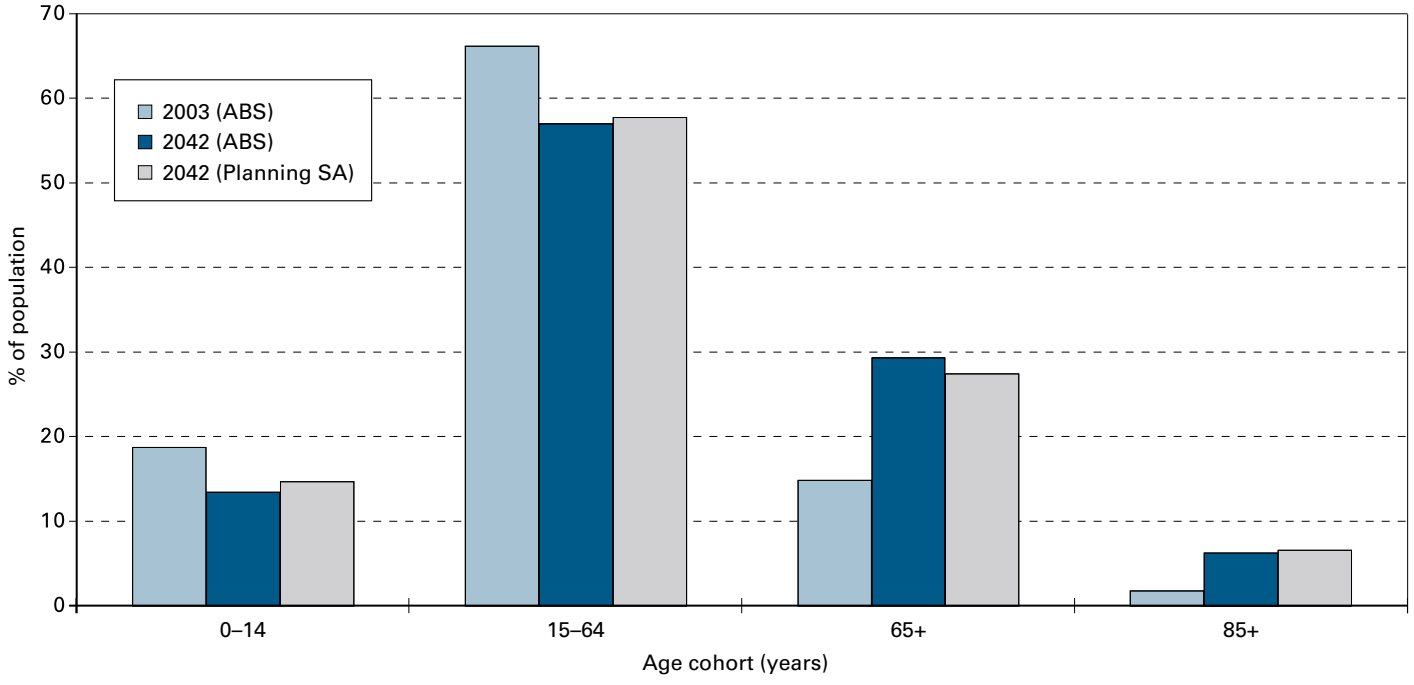


Figure 1: Age structure of the South Australian population

Note: The 85+ column is a subset of the 65+ column.

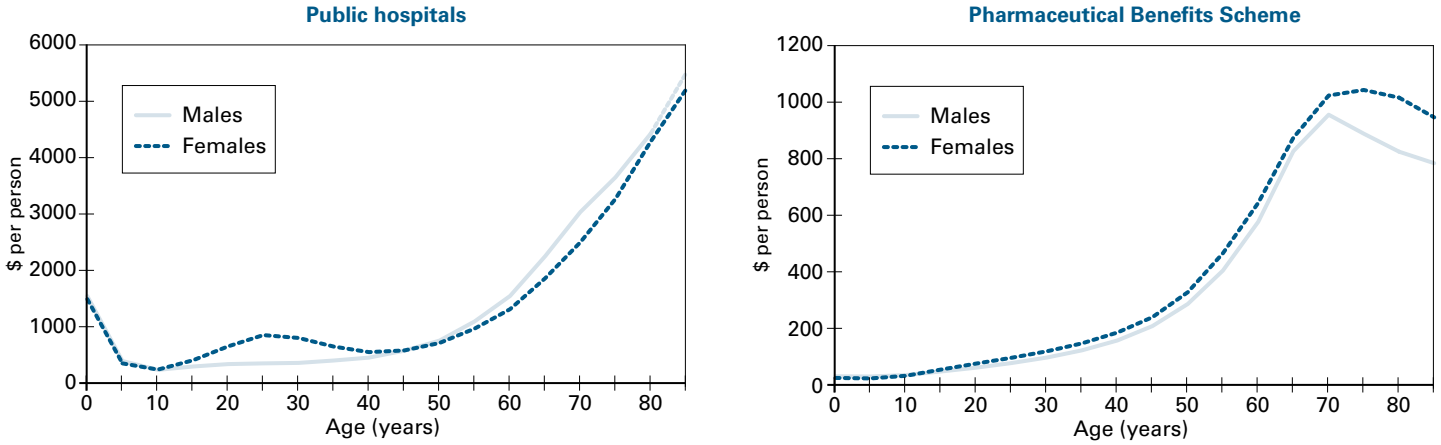


Figure 2: Age profiles of expenditure on public hospitals and Pharmaceutical Benefits Scheme

Source: Hospital profile is based on New South Wales unit record data provided by the National Centre for Social and Economic Modelling (NATSEM)[2]; PBS profile is based on Health Insurance Commission unpublished 2002–03 data.[3]

The charts prepared by the Productivity Commission in Figure 2 show the age profiles of public hospital and Pharmaceutical Benefits Scheme (PBS) spending. Clearly, demand for health services rises strongly as people get older.

As a larger proportion of Australia's population is projected to be in the older age groups (Figure 1) and as older age groups represent the greatest cost in health expenditure (Figure 2), the overall cost of providing health services will rise significantly based on current service delivery structures (i.e. on a 'no policy change' basis). This is a big potential pressure on the South Australian Government's budget.

Figure 3 shows the impact on government finances of population ageing alone. It ignores any above-average growth in health demands or costs. Starting from 2005–06, each line shows the projected movement in the annual 'primary' budget balance, which is the difference between operating expenditure and operating revenue, excluding interest payments on debt.

Age-related increases in expenditure on health and social security and welfare, in particular, lead to growing fiscal pressures. While the deterioration for the states is significant, the Commonwealth deterioration is much larger (five-and-a-half times greater in per capita terms). This assumes that the Commonwealth keeps increasing specific purpose payments (SPP) to the states in line with the growing demand for health services. But if the Commonwealth were to exercise greater restraint in 'tied' funding to the states than is assumed here, a greater funding burden would be shifted to the states.

South Australia's annual primary balance is predicted to deteriorate by around $810 million in real terms by 2041–42, which is equivalent to 7.2% of total revenue in 2005–06. However, fiscal equalisation would moderate the impact of ageing on South Australia so that the deterioration in the fiscal balance is similar to that for other states. Fiscal equalisation is the process by which GST revenues are distributed among the states according to their relative 'needs'. The deterioration in South Australia's primary balance would be much greater ($1.6 billion in real terms) without fiscal equalisation, as shown in Figure 3 by the line 'without HFE' (horizontal fiscal equalisation).

There are other pressures on health services apart from ageing. Rising costs of technology usage have been observed for some time, as has rising demand from community expectations regarding the quality and availability of public health services. For example, according to the Productivity Commission's report *Economic implications of an ageing Australia*, spending on pharmaceuticals in Australia over the past 20 years has grown by 7.5% per annum per head of population.[4]

The scenario in Figure 4 combines the impacts of ageing with rising health costs. Under this scenario the fiscal pressures increase significantly as a result of the additional health demand and cost assumptions. The projected deterioration in the Federal Budget has doubled compared with the ageing only scenario, and the deterioration for the states has become three to four times larger. South Australia's annual primary deficit has deteriorated by $2.6 billion in real terms by 2041–42 (or the equivalent of 23.0% of revenue in 2005–06), compared with $810 million (or 7.2% of revenue) as shown by the 'pure ageing' line.

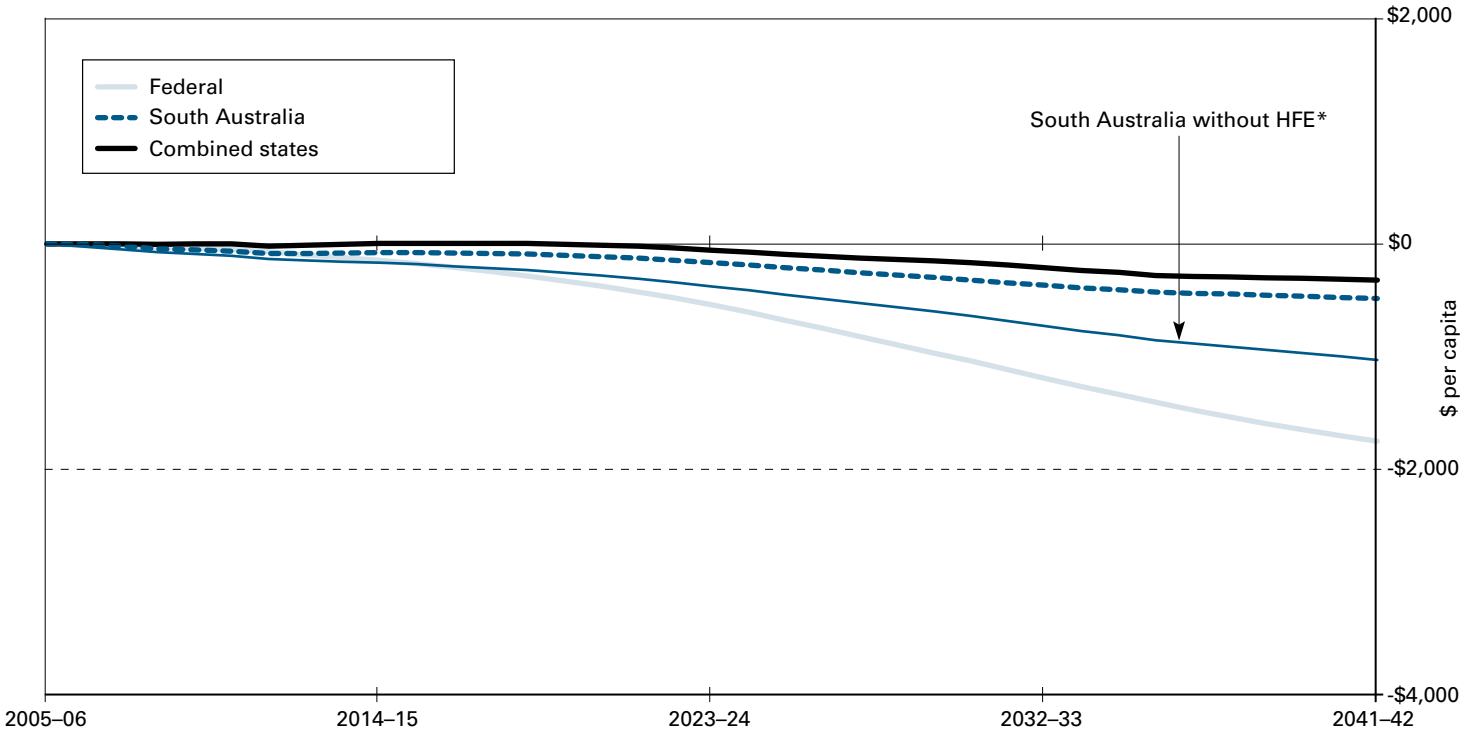


Figure 3: Fiscal impact of ageing: annual budget balance per capita (in real terms) relative to 2005–06

* Horizontal fiscal equalisation

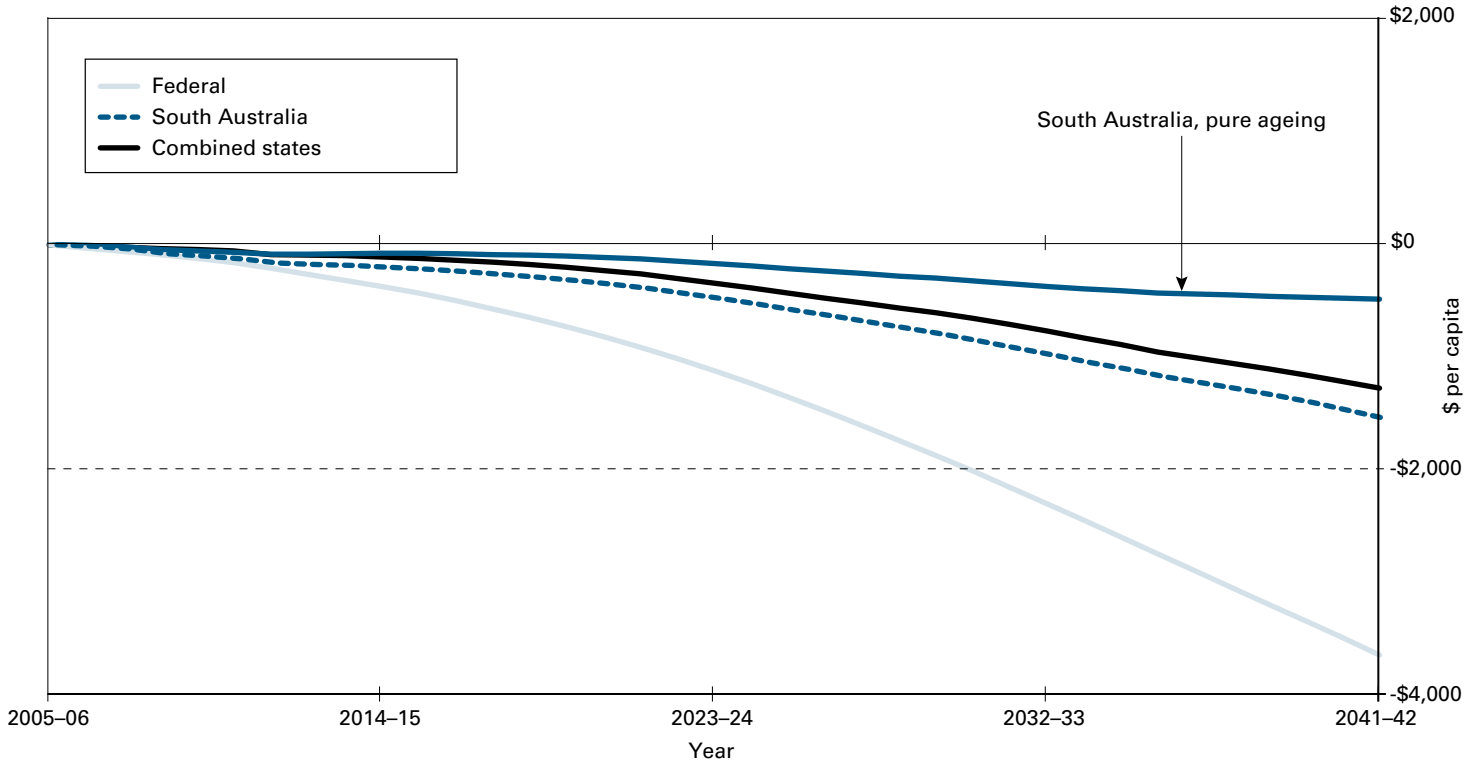


Figure 4: Impact of ageing and rising health costs: annual budget balance per capita (in real terms) relative to 2005–06

Impact of projections

Do the projections set out above represent a problem for the South Australian Government or for individuals' health? In other words, why shouldn't the Government spend more on health if that is what is required and demanded by the public?

The capacity to deliver more health services for an ageing population will depend on budgetary capacity. We contend that governments would not be able to accept a growing fiscal deficit of the magnitude projected because it would mean increasing debt, which would eventually increase interest costs and generate unsustainable budget deficits. We suggest that future generations cannot be expected to accept the increased debt burden generated by previous generations, particularly when that debt has not created any offsetting asset.

Options for dealing with the forecast $2.6 billion deficit include:

- increasing tax revenue. This can be a problem if the public does not accept the tax increases. On the other hand, it is important to realise that even though government budgets will face increased pressure as a result of population ageing, living standards are still projected to rise. Real household consumption per capita is projected to grow by around 84% over 40 years, so this near doubling in real living standards suggests that there could be scope for raising taxes if the community accepts it as a way to fund increased health services.
- reallocation of expenditure from other government services. This could meet resistance if the public does not want to reduce services in other areas (e.g. police, education) to pay for health. If, instead of increasing debt, the Government had to decrease spending to cover the forecast deficit, the reduction would have to be about 23.5%. If health spending were quarantined from the reductions, expenditure in all other areas of government would have to be reduced by 32.5%, which would be a difficult task for the Government to undertake.
- reallocation from other health services such as from acute hospitals to primary care. This could be difficult if the public believes that existing health expenditure is correctly allocated and shouldn't be changed (or, in other words, that the services at their local hospital should not be reduced).
- introduction of policies that produce a healthier society, utilising the resources already within government and in the rest of society to reduce the projected call on health services.

Even though health costs are expected to grow significantly, as noted above, living standards are still projected to rise, potentially providing community capacity to meet these costs. Ongoing growth in incomes and wealth relies, however, on continued productivity growth and increase in the workforce participation rate, especially in the light of projected slower growth in what has traditionally been the working age cohort of the population. Improving the health of the 15–64 years age group will be an important factor in increasing that group's participation in the workforce. Maintaining the health of people over the age of 64 years will assist more of them to remain in the workforce and therefore increase national income.

The modelling presented here assumes an improvement in population health status in line with increasing life expectancy, such that there will be an increase in the number of healthy years compared to unhealthy years lived. An increase in obesity and chronic disease over the next 40 years could therefore make the forecasted deficits larger.

The projections also highlight the importance of fiscal equalisation in ensuring that there is capacity for each state and territory to address the different needs of their respective populations.

Conclusion

The ageing of the population, the growing community demand for and cost of health services, and the increasing prevalence of chronic disease all suggest that more, rather than less, expenditure on health care will be required in the future.

We know that prevention is better than cure and that we should be directing resources towards preventing people getting avoidable chronic diseases rather than attempting to treat them after they have the disease.

Our health system, and the taxpayers' funding of it, is limited, and is currently directed at treating illness rather than supporting wellness. If we are to successfully increase the effort put into preventive health, we need to look beyond the health portfolio and place more reliance on other resources at the disposal of government. Departments other than health need to shift their thinking to a consideration of the health impacts of their policies and the health promotion possibilities of initiatives within their portfolios. As simple but effective examples, some of the present support for elite sporting activity could be redirected to encourage the general population to exercise; more emphasis could be put on educating children in the benefits of healthy living and ensuring that school canteens provide suitable food; and planning systems could be used to reduce motor vehicle usage and encourage other, healthier forms of transport. This is Health in All Polices.

References

1. Productivity Commission. Long-term ageing is today's policy challenge. Media release, 27 October 2005. http://www.pc.gov.au/study/ageing/docs/finalreport/mediarelease
2. Thurecht L, Bennett D, Gibbs A, Walker A, Pearse J and Harding A. A microsimulation model of hospital patients: New South Wales. Technical paper no. 29, National Centre for Social and Economic Modelling, University of Canberra, May 2003.
3. Health Insurance Commission (HIC). Medicare database 2004. http://www.hic.gov.au (now http://www.medicareaustralia.gov.au).
4. Productivity Commission. Economic implications of an ageing Australia. 12 April 2005.

South Australia's Strategic Plan and HiAP—perfect partners

Tanya Smith
Deputy Chief Executive, Cabinet Office
Department of the Premier and Cabinet

Introduction

Governments have a responsibility for maintaining the health of people, thereby enabling them to live a socially and economically fulfilled life. Good health is something that we all want and expect, and we tend to take it for granted. Conversely, poor health imposes a huge cost on the population (in terms of quality and length of life for those affected as well as pressures on carers and families) and a significant financial burden on the health system.

Although major developments have been made in managing and preventing acute illnesses, chronic health conditions are emerging as a significant and ongoing cost to the community. As the population ages, these chronic health conditions and costs will only become greater.

Many of these chronic conditions are preventable. They are closely linked to living conditions and lifestyle factors, all of which are influenced by policies outside the health sector (hence the term *determinants of health*). This puts health on the agenda of policy makers in all sectors and at all levels, directing them to be aware of the health consequences of their decisions and to accept responsibility for health.

This paper looks at the Health in All Policies (HiAP) approach that has been adopted by the South Australian Government through South Australia's Strategic Plan. In conjunction with the Department of Health, the South Australian Cabinet Office has encouraged agencies to apply a 'health lens' over a range of targets across the plan to understand how the determinants of health influence health and wellbeing at individual, family and community levels.

The case for an HiAP approach

There are three compelling reasons to adopt an HiAP approach across government that focuses policy away from illness treatment and towards illness prevention:

- ***recognition that health inequalities will only be reduced if the illnesses and the conditions that cause them are addressed***
  On a wide range of health status measures people who live in regional and remote areas generally fare worse than people who live in major cities.[1] The difference in life expectancy between Aboriginal and non-Aboriginal

populations has been well documented. The median age of mortality among South Australia's Aboriginal population has been 25–30 years less than for non-Aboriginal South Australians.[2] These are just two examples of health inequality that will clearly not be addressed by treating the illnesses only.

As the South Australian Government submission to the 2006 Productivity Commission Review of Health Workforce notes, '…health inequalities will only be reduced through concerted and integrated action that is not just vested in the delivery of clinical services, but also addresses socio determinants of health'.

- ***funding***

The Productivity Commission on the Economic Implications of an Ageing Australia stated:

'…the major source of budgetary pressure is health care costs, which are projected to rise by about 4.5 percentage points of GDP by 2044-45, with ageing accounting for nearly one half of this.

In the absence of policy responses, the aggregate fiscal gap will be around 6.4 percentage points of GDP by 2044-45, with an accumulated value over the forty years of around $2,200 billion in 2002-03 prices.

On past trends much of this could be expected to be borne by the Australian Government but there are significant potential burdens faced by State and territory Governments.'[3]

Modelling undertaken in 2006 by the Department of Health in South Australia indicates that '…by 2042, without significant change to the health system, the entire State budget could be consumed by the health care sector'.

Such scenarios are not economically sustainable for governments and require a different policy approach.

- ***the need to manage the demand for services given an increasing ageing population***

South Australia has the highest proportion of older people in the nation, with one in six people over the age of 65 years. In the next 15 years that population will nearly double as the 'baby boomer' generation ages.

The ageing of South Australia's population has significant health implications for the state. People aged between 65 and 75 years are twice as likely, and those aged 85 years and greater over five times more likely, to be admitted to hospital as the rest of the population.[4]

Conceptualising health through its determinants is important because determinants can often be directly and quickly influenced through policies and interventions in the various areas of policy making. This means that policies, interventions and actions outside the health sector can address determinants of health more directly than health policy. The improvement of health through determinants can thus be achieved in an easier and more straightforward manner than through more traditional approaches based on treatment of illnesses.

There is a need therefore to integrate health considerations into other policies and sectors beyond the health sector.

South Australia's Strategic Plan

Given the compelling arguments for an HiAP approach, how can the Strategic Plan framework assist?

South Australia's Strategic Plan was launched by the South Australian Government in March 2004, and updated in January 2007 after a comprehensive statewide community engagement process to include the views of South Australia's many communities of interest.

The plan expresses values, priority areas and actions for the future direction of the state. Premier Rann has described it as a 'goad to action for all South Australians' and 'a plan for everyone – for business, for the community, and for government – not a plan for government alone'.[5] It is a key organising document and reference point for the activities of the government through its agencies. But it is also a whole-of-state plan with ambitious targets that can only be achieved through cooperation within and between government, industry and the community. Partnerships will be critical to its success. The plan throws down a challenge to all South Australians to take action that will achieve a better future for the state.

The plan contains 98 targets arranged across the following six interrelated objectives:

- Growing Prosperity
- Improving Wellbeing (which contains a number of health specific targets)
- Attaining Sustainability
- Fostering Creativity and Innovation
- Building Communities
- Expanding Opportunity.

Example: Linking the Strategic Plan targets

T2.2 TARGET – **Healthy weight:** increase the proportion of South Australians 18 and over with healthy weight by 10 percentage points by 2014.

How will the adoption of an HiAP focus by policy officers and decision makers that have primary responsibility for the other targets in the Strategic Plan assist with achievement of this target? A couple of examples of linkages between targets are provided as illustrations:

T1.1 TARGET – **Economic growth:** exceed the national economic growth rate by 2014.

Strong economic growth provides for less unemployment. There appears to be a strong link between socioeconomic status and rates of obesity and overweight, with higher prevalence of obesity among people with a lower socioeconomic status.[6,7] Therefore, the linkage between economic growth and healthy weight is that a strong economy provides for more people to be in employment, which increases their socioeconomic status and diminishes the probability of them being or remaining obese or overweight.

T3.6 TARGET – **Use of public transport:** increase the use of public transport to 10% of metropolitan weekday passenger vehicle kilometres travelled by 2018.

Policies that encourage alternative forms of transport ultimately provide for more active and healthier lifestyles in the community. A reliance on cars and other forms of transport that take occupants 'door-to-door' contributes to sedentary lifestyles. Pollutants and chemicals found within vehicle emissions have been shown to be associated with reduced lung function and a higher incidence of respiratory and cardiovascular problems, including cancer.[8] Noise created from traffic and vehicle usage can impact on hearing, communication, concentration, school performance, sleep, temper, hypertension and heart disease.[9] Therefore, policies that encourage greater use of public transport can positively contribute to the healthy weight target as it generally involves more walking and lends itself easily to passengers undertaking additional exercise by disembarking earlier in their journey and walking to their destination.

An important feature of the plan is that neither the objectives nor any individual targets stand alone—they are all part of a larger interrelated framework. Achieving one target should not come at the expense of another. Smart thinking about how we do things can neutralise effects on other targets or even turn them into positives.

The aim is to encourage the collaborative behaviour and innovative thinking required to address some of the most complex issues South Australia faces. Of equal importance, these interactions also include some synergies between targets across the plan.

At the recent HiAP conference held in Adelaide in November 2007, the South Australian Cabinet Office presented a paper on 'South Australia's Strategic Plan… through a health lens'. Fourteen targets were selected for analysis in the paper as they provide representation across all six objective areas in the plan and involve a range of departments outside the health sector.

In adopting an HiAP approach to the Strategic Plan, policy officers and decision makers are encouraged to include a broader consideration of the issues and implications for policy analysis and development to optimise health outcomes for the state.

Cabinet Office's role in encouraging an HiAP framework

In 2006 the role of the South Australian Cabinet Office was strengthened to provide greater leadership coordination across government and greater capacity to turn policy into action.

While the Cabinet Office has responsibility for oversight of the implementation of the Strategic Plan objectives, as a central agency it is also well placed to encourage a whole-of-government approach to policy development. This may include lending assistance if necessary to broker a solution if the policy development process becomes deadlocked or requires some independent direction.

In encouraging agencies to look at the Strategic Plan targets through a health lens, the Cabinet Office has focused on breaking down the traditional misconception that health problems are issues only for the health portfolio.

> 'To date there have been few attempts to address some of the negative impacts of policy decisions made in non-health sectors on the health of South Australians, or to recognise the health-related benefits of making improvements in areas such as education, housing, transport, employment and the physical environment. This remains a challenge for governments as they strive to improve the health of the population.'[10]

The challenge for the successful adoption of an HiAP approach is to move the focus from illness treatment within the health system towards an integration of health considerations across a wide range of policy areas that affect the determinants of health, e.g. environment, education, child development, social capital, housing, transportation and employment.

In many cases there are synergies and logical connections between health and non-health sector targets in the Strategic Plan, but inevitably there will be other targets that are incompatible, or at least inconsistent, in some aspects. That is not to say that policy should never be developed and implemented where such inconsistencies arise. However, thorough policy development requires that such tensions are explicitly acknowledged and addressed so that informed discussions and debate take place and, ultimately, decisions are made in full knowledge of all the likely impacts across a range of considerations.

The role of the Cabinet Office is to ensure that this policy debate occurs and that Cabinet are informed of such issues to aid their decision making.

Conclusion

HiAP is a methodology as much as an outcome. This article has advanced some of the reasons why South Australia should adopt this methodology. South Australia's Strategic Plan is the ideal framework within which to progress the HiAP methodology because it offers examples of linkages between health and non-health sectors and complements the wider agenda to make use of interactions between the plan's targets.

The South Australian Cabinet Office is working with government agencies to incorporate HiAP thinking into both the internal processes of government and dialogue with the community so that decisions are made with the full knowledge of the likely impact across a range of considerations.

It is vitally important to ensure that the HiAP approach retains its momentum. Mainstreaming HiAP within the Strategic Plan framework will ensure that it is not diluted—the linkages between the targets will provide the impetus to retain the momentum.

References

1. Australian Institute of Health and Welfare. Australia's health 2006, s. 4.8
2. Government of South Australia. South Australia's Strategic Plan, 2007, p. 19.
3. Productivity Commission. Economic implications of an ageing Australia. 2005. http://www.pc.gov.au/study/ageing/finalreport/keypoints.html
4. Government of South Australia. South Australia's Health Care Plan 2007–2016, p. 5.
5. Government of South Australia. South Australia's Strategic Plan, 2007, p. 3.
6. Access Economics. The economic costs of obesity. October 2006, p. 14.
7. Government of South Australia. Inequality in South Australia: Key determinants of wellbeing, vol. 1: The evidence. 2004, p. 68.
8. Dora C, Phillips M (eds). Transport, environment and health, World Health Organization, 2000, p. 19–22.
9. Dora C, Phillips M (eds). Transport, environment and health, World Health Organization, 2000, p. 9–10.
10. Glover J, Hetzel D. In: Spoehr J (ed.). State of South Australia. Wakefield Press, 2005 p. 229.

A seat at the head table

Jeff Tryens
Consultant
South Australia Strategic Plan Implementation

Jeff Tryens first heard of South Australia when Premier Mike Rann visited the Oregon Progress Board in June 2003 to learn about that state's 20-year strategic vision, Oregon Shines. Jeff's next contact with South Australia was as a keynote speaker at the launch of the South Australia Strategic Plan (SASP) in early 2004. Jeff's relationship with South Australia escalated from there—first serving as an outside observer in the spring of 2004, then as Executive Director of SA Strategic Plan – Community Connection leading the SASP update, and most recently as a consultant focusing on SASP implementation. Jeff is based in Portland, Oregon.

The adoption of South Australia's Strategic Plan (SASP) as the state's principal long-term planning document provides population health advocates with a particularly valuable new asset—a seat at the head table. In most states, public health advocates labour in the shadow of the big end of town when it comes to the state's top priority—economic development. While economic prosperity is also of primary importance in SASP, it is tempered by the understanding that a state can only prosper if its citizens are properly educated, secure and healthy.

SASP was designed to break down traditional state government silos that house the different disciplines of economic, environmental and social wellbeing. It was also designed to break down the even more impervious walls that exist between state government and other sectors of society. As Premier Rann said in his SASP 2007 message, 'I wanted it (SASP) to be a plan for everyone—for business, for the community and for government—not a plan for government alone.'

It's exciting to see that the population health community has run with that expectation through the Health in All Policies (HiAP) initiative, which is designed to place population health issues squarely in the middle of SASP policy formulation. In particular, the HiAP initiative is in the process of attempting to insert population health into six SASP Targets not usually considered health issues: T1.1 Economic growth; T2.12 Work life balance; T3.7 Ecological footprint; T4.8 Broadband usage; T5.9 Regional population levels; and T6.5 Economic disadvantage.

This will not be an easy task as it challenges some very deeply ingrained cultural norms in state government. Having just reviewed 93 SASP Target implementation plans, I can report that most SASP Target implementation managers still tend to regard their Targets through their particular agency lens. While the Department of Health has done a better job than most, the challenge remains.

My advice for HiAP is not to go too far afield until you're ready to take off the training wheels. Really good coordination between 'natural health-related pairs' like T2.2 Healthy weight and T2.3 Sport and recreation or T2.1 Smoking and T6.3 Birthweight will go a long way toward convincing other partners to take on tougher couplets such as the relationship between T2.4 Healthy South Australians and T6.5 Economic disadvantage. Finally, I would suggest tackling the more multidimensional aspects of how all population health variables affect a Target like T3.7 Ecological footprint.

In 2002 I co-authored a paper examining how the Oregon Benchmarks (the model for the SASP Targets) had affected health outcomes in the state. Titled *Achieving better health outcomes: The Oregon Benchmark experience*[1], the report examined both quantitative and qualitative measures of success. Quantitatively, Oregon did no better or worse, on average, than other states on the particular indicators of population health as measured by Oregon Benchmarks. However, Oregon leaders who we queried generally believed the process had improved health outcomes by elevating their status in public deliberations. In particular, I remember one interview with the head of the state's largest electric utility company. He said the most important part of the Oregon Benchmarks process for him was that bringing together leaders from different sectors of society increased his appreciation of their respective roles in the greater scheme of things.

Bringing leaders together to ponder new ways forward should be at the heart of the HiAP initiative. This exercise should include a broad range of community and business leaders, not just a select group of public employees.

This can be done in South Australia. One of the most successful aspects of the SASP update process was the Target working groups. A mixture of advocates, experts and public servants, these groups chewed over, debated and, generally, came to agreement on needed improvements to the Targets. For some public servants, this open dialogue was a unique and somewhat uncomfortable experience. But, I believe, it resulted in a more widely 'owned' set of Targets.

A similar process should be replicated at the strategy level. HiAP should use its place at the head table to advance a community-based dialogue on how best to achieve key Target pairs. If done well, a set of community 'owned' strategies will emerge that can energise a population health constituency that is representative of the whole community. And it can serve as a model for how state government can reach out to business and community leaders on issues that are of critical importance to South Australia.

Reference

1. Leichter HM, Tryens J. Achieving better health outcomes: The Oregon Benchmark experience. 2002. http://www.milbank.org/reports/OregonProgres/020909Oregon.html

Health in All Polices: Health agencies' role

Kevin Buckett
Director, Public Health
South Australian Department of Health

Introduction

The nub of the argument for a Health in All Policies (HiAP) approach is that health is everyone's business and that the determinants of health lie outside the remit of the health sector. HiAP is based on the understanding that if we are to improve population health outcomes and address the determinants of health, all sectors and agencies need to incorporate a concern for health impacts into their policy development processes. What then is the role of the health system and health agencies in HiAP?

The health system

Overwhelmingly, the focus of the health system is on health care. If we look at health expenditure in Australia, the vast majority is spent on curative rather than preventive activities. In 2004–05 it is estimated that only 1.7% of health expenditure was spent on public health activities.[1] The stage is set for health care costs to continue to rise and take over ever more of the health budget, and for the health budget to consume ever more of the overall state budget.

The increase in health care costs is driven by a number of factors. A major issue is the increase in chronic disease and the impact this is having, and will continue to have on the need for health care services, as obesity levels rise and the incidence of lifestyle related diseases increases. This is further exacerbated by the ageing of the South Australian population. As the population ages, their requirement for health services increases, with the older age groups representing the greatest cost in health expenditure. A further issue is the increase in use of medical technology and the increasing financial burden this is placing on the health care system.

That the focus of the health system is on ensuring high-quality health care is as it should be, both from necessity and from community expectation. We all expect there to be a highly expert health care system in place when we need it, and there is community concern and outrage when this doesn't happen. Highly emotive stories readily appear on the front pages of our media when there is a perceived shortage or health system failure.

However, it is becoming clear that the increase in health care costs is unsustainable. What is required is a paradigm shift, both for the health portfolio and for other government portfolio areas. While not undermining or diminishing the excellence of the health care system, we need to be focusing on population health and the social determinants of health.

Traditionally, the focus of public health has been on risk—clean water and sanitation, food safety, environmental health risks, immunisation, communicable disease control, health behaviour change and health promotion. Many of these major health risks are now well controlled, and we need to focus our attention on the social and physical determinants of health. This is a Health in All Policies approach.

Health in All Policies

The HiAP approach builds on earlier public health movements, which began by addressing insanitary conditions and communicable diseases, moved to behavioural and lifestyle risk factor modification, and then progressed to the third public health revolution which incorporates HiAP.[2]

The major reference work on HiAP, Health in All Policies: Prospects and potentials, defines HiAP as:

> 'HiAP is a horizontal, complementary policy-related strategy with a high potential for contributing to population health. The core of HiAP is to examine determinants of health which can be influenced to improve health but are mainly controlled by policies of sectors other than health.
>
> The HiAP approach is based on the recognition that population health is not merely a product of health sector activities, but to a large extent determined by living conditions and other societal and economic factors, and therefore often best influenced by policies and actions beyond the health sector. In addition to the recognition that HiAP is about population health and health determinants, it also concerns addressing policies in the context of policy-making at all levels of governance… These two aspects of HiAP are of core relevance as they imply that the focus of this approach extends beyond individual factors and lifestyles to addressing how these are influenced by public policies.'[3]

Role of the health system in HiAP

The health system obviously has a key role in an HiAP approach; however, there needs to be a shift in thinking about how health agencies do their business as we move to the view that health is 'everyone's business'.

The WHO discusses the role of health authorities in the following way:

> 'Health systems' stewardship extends beyond the boundaries of the health sector and requires active intersectoral collaboration. The role of the health sector is to advocate and lead intersectoral actions for health and to ensure that policies adopted in other sectors do not damage the health of the population and equity in health care.
>
> The stewardship capacity of the health authorities and their ability to build up a stronger intersectoral partnership are crucial to the good performance of health systems.'[4]

So health agencies should be the catalyst for HiAP. This does not mean necessarily being the leader, but providing resources, support and advice. The health system is data rich, having excellent information systems and expertise in analysing and reporting data. Providing data in a constructive and targeted way to appropriate agencies to help them understand the health implications, both positive and negative, of their policy decisions will assist agencies in their planning and decision-making processes.

Health agencies need to move away from the position of seeing themselves as the experts, and recognise and work collaboratively with the expertise that other portfolios have. They need to reach a situation where other portfolio areas seek their advice on policy deliberations; this will happen by taking a respectful and collaborative approach rather than an authoritarian and overbearing one.

Health impact assessments

A systematic tool for influencing policies in other sectors to safeguard public health is health impact assessment (HIA). Wherever decisions are being made that impact on the health of the population, HIA provides evidence-based recommendations designed to inform the process as it seeks to predict the health consequences of a policy, proposal or project. While there is no legislative mandate for health impact assessments in South Australia, there are in some other jurisdictions, including Tasmania where there are provisions enabling HIA to be a requirement of a development. In the absence of legislative provisions, encouraging and supporting other portfolios to consider undertaking the process is an important role for health agencies as a first step.

Health getting its own house in order

While there is work to be done with other portfolios in moving to HiAP, there is also much work to be done in our own backyard. At the same time as convincing our colleagues in other portfolios of the value and necessity of this approach, more work needs to be done in convincing our own. As Dahlgren notes in the following points:

- '…there is still a tendency within the health sector to "medicalise" – or neglect – the many external causes of poor health and the role of other sectors in promoting health and preventing disease.
- The health effects of environmental, social, agricultural and economic policies and programmes are still neglected by the professional groups responsible.'[5]

Thus, a paradigm shift is required in our own sector as much as in other portfolios.

First steps first

A starting point of HiAP is making the case for understanding the importance of the health implications of policy in other areas and enhancing the feasibility of placing health criteria on agendas of policy makers in non-health areas. This will be easier in the first instance if we work in sectors where the interests of both are compatible and mutual gains can be found. Jeff Tryens in this issue of the Bulletin talks about 'natural health-related pairs' in terms of tackling joint work on the targets in South Australia's Strategic Plan. The same is true here. Make easy gains first with more 'natural' partners, e.g. transport and planning, before trying to work in areas where there may actually be conflict, e.g. where health concerns may potentially conflict with productivity. We will need a body of evidence, experience and past performance in order to move HiAP into these more intractable areas.

Conclusion

The challenges of unsustainable cost increases currently facing the health system are serious and urgent. In South Australia we are in a fortunate position in having the impetus of the work of the Kickbusch Residency and promotion of the HiAP approach, with the Strategic Plan as the glue holding it all together. It is now up to us in the health sector to make the most of opportunities for promoting population health gain in the South Australian community.

References

1. Australian Institute of Health and Welfare. Australia's health 2006. AIHW cat. no. AUS 73. Canberra: AIHW, 2006. http://www.aihw.gov.au/publications/aus/ah06/ah06-c11.pdf
2. Kickbusch I. The contribution of the World Health Organization to health and health promotion. American Journal of Public Health 2003;93(3):383–388.
3. Ståhl T, Wismar M, Ollila E, Lahtinen E, Leppo K (eds). Health in All Policies: Prospects and potentials. Finland: Ministry of Social Affairs and Health, 2006.
4. WHO Regional Office for Europe. Health in all policies. http://www.euro.who.int/healthsystems/Stewardship/20070312_6
5. Dahlgren G. The need for intersectoral action for health. European health policy conference: opportunities for the future. In: Vol. II, Harrington P, Ritsatakis A (eds). The policy framework to meet challenges: intersectoral action for health. Copenhagen: World Health Organization Regional Office for Europe, 1995. Quoted in ref. 3, p. 11.

The South Australian Health in All Policies model: The developmental phase

Carmel Williams
Project Catalyst, Kickbusch Residency
South Australian Department of Health

Angela Lawless
Project Catalyst, Kickbusch Residency
South Australian Community Health Research Unit

Heather Parkes
Acting Executive Director
TRACsa

Following the release of Professor Ilona Kickbusch's Interim Report as Thinker in Residence, the Department of Health (DH) and the Department of the Premier and Cabinet (DPC) commenced a process of discovery regarding how best to deliver on one of her key recommendations—developing a Health in All Policies (HiAP) approach in South Australia.

In the six months between Professor Kickbusch's first residency in Adelaide in February 2007 and her return in October 2007, three interconnected strategies were implemented:

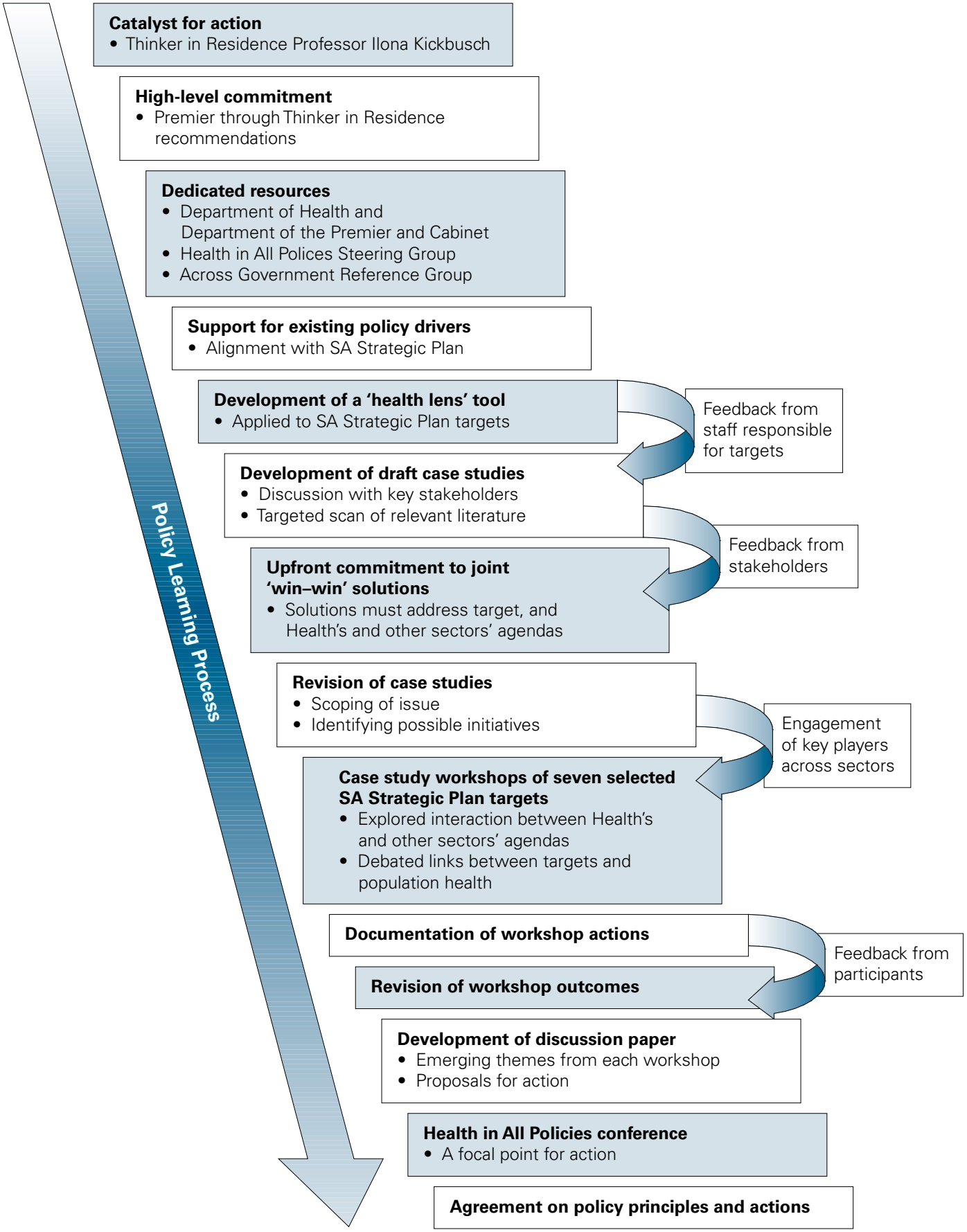
1. the application of a health lens over a sample of South Australian Strategic Plan (SASP) targets
2. the coordination of an HiAP state-based conference
3. the development of a series of case studies on selected SASP targets.

Each of these strategies was underpinned by the understanding that the solutions to major health issues facing our society lie outside the health sector. Therefore, the health sector must engage effectively with other sectors to deliver improved population health outcomes.

These strategies comprise the first, or developmental phase, of HiAP in South Australia. The consultation undertaken across sectors in preparation for the HiAP conference, the analysis of SASP targets through a health lens and the case studies on the targets, provide a series of steps which could be adapted and implemented by other agencies and in other jurisdictions. Professor Kickbusch referred to these steps as South Australia's Health in All Policies Model, where strategies have been developed to put the theory into practice.

The steps in this model are outlined in Figure 1. The model indicates the commitment at the highest level to implement HiAP—the Premier through the Thinker in Residence Program, with Professor Kickbusch as the catalyst for the whole approach; the Department of the Premier and Cabinet

Figure 1: South Australian Health in All Policies model: The developmental phase



with the Cabinet Office taking a lead in the process; and the Department of Health working in partnership. The SASP provides the strategic framework underpinning the process, emphasising feedback and engagement with other sectors.

DPC undertook an analysis of the SASP, examining the interconnections and synergies between a sample of targets across all six objective areas and their health impacts. The 'health lens' was developed by adapting the

social determinants of health into a narrower framework, and then scanning the available literature for both positive and negative health impacts based on this framework. Although it was a desktop-based analysis, once completed it provided a mechanism for the integration of health considerations across a wide range of policy areas that affect the social determinants of health, such as the environment, education, child development, social capital, housing, transportation and employment. With DPC rather than DH taking the lead, this exercise was itself an example of an HiAP approach.

The health lens analysis identified relationships between sectors and stimulated further work by all sectors, thus capturing the spirit of HiAP. It aided policy makers and decision makers outside the health sector to recognise these interconnections and appreciate the important role that non-health policies play in promoting health.

Health in All Policies conference

In order for the health lens analysis to move from theory to practice, a policy learning process was developed that culminated in a state-based HiAP conference, co-convened by DH and DPC and held in Adelaide on 21 November 2007. The conference aimed to increase understanding of the key interactions and synergies between health, the economy and the achievement of SASP targets. It was designed to deliver specific outcomes such as agreement on HiAP principles and identification of future opportunities for action. Senior executives from across government were invited and over 150 participated.

The policy learning process: Case studies as action learning

In the lead-up to the conference a series of discussion papers presenting case studies on seven selected SASP targets were developed. Using the health lens analysis as a staring point, the interaction between the SASP target and population health was explored in more depth. Stakeholders from across government then participated in workshops which sought to identify win–win solutions where both improved population health outcomes and progress towards the SASP target could be achieved. This process provided a basis to engage senior decision makers in a policy learning process. The case studies and workshops provided an opportunity to put the HiAP approach into action on real targets.

The following table highlights key interactions between population health and the seven SASP targets included in the case study process.

Table 1: The seven case study targets and links to population health

Case study target	Associated population health issues
Objective 1 – Growing prosperity T1.1 Economic growth *Exceed the national economic growth rate by 2014*	• Economic growth is predicated on employment and /or productivity growth supported by capital/infrastructure investment • Employment growth is predicated on increasing and sustaining available healthy labour supply—people, participation, productivity • Healthy people are more productive and can be fully engaged in the labour force. Productivity needs to grow at historically high levels to meet the target • The demographic profile of SA means that the biggest threat to SA's economic growth is a lack of suitable and/or sufficient labour supply over the next 10+ years • The SA labour force can be improved, thus economic growth improved, by bringing those marginally attached into greater employment participation • People who have access to safe, secure and satisfying work have better health and wellbeing than people who are either under- or unemployed • This has flow-on effects for population health gain
Objective 2 – Improving wellbeing T2.2 Healthy weight *Increase the proportion of South Australians 18 and over with healthy weight by 10 percentage points by 2014*	• Over half of SA adults and a quarter of SA children are overweight or obese, and the prevalence is rising • The prevalence of overweight and obesity within SA is not evenly spread within the community, with higher prevalence among people with lower socioeconomic status • Overweight and obesity are risk factors for a number of chronic conditions, which are placing an ever-increasing economic burden on the health system • Poor health associated with overweight and obesity is contributing to costs associated with reduced productivity through absenteeism and mortality

Case study target	Associated population health issues
Objective 2 – Improving wellbeing T2.2 Healthy weight *Increase the proportion of South Australians 18 and over with healthy weight by 10 percentage points by 2014 (continued)*	• Solutions to halt the obesity epidemic will require policy responses from a broad range of stakeholders at the federal, state and local levels • At the state level some of the key sectors identified include education, food production and supply, transport, urban planning and the food industry
Objective 2 – Improving wellbeing T2.12 Work–life balance *Improve the quality of life of all South Australians through maintenance of healthy work–life balance*	• Australians are participating in paid work for longer over their life courses, with women increasingly contributing • Measures to improve work–life balance can encourage more people into employment and help them to remain in the workforce longer, and assist all people to balance work and private responsibilities • Promoting a culture and environment that strikes a balance between work and other pursuits will support individual health and wellbeing and help build stronger communities • Poor work–life outcomes show a clear relationship to (self-reported) physical, mental and social wellbeing
Objective 3 – Attaining sustainability T3.7 Ecological footprint *Reduce South Australia's ecological footprint by 30% by 2050*	• Measurement of the ecological footprint provides an indicator of renewable resource consumption, in much the same way that economic indicators such as gross domestic product represent aspects of the financial economy • SA's ecological footprint is more than three times the world average • There are clear links between the health and environmental sustainability agendas with respect to food production and consumption. For example: - reducing over-consumption of food, which contributes to overweight and obesity and also has ecological impacts - increasing the consumption of plant-based food—fruit and vegetables—which is better for health and reduces the ecological footprint - preparing and consuming food closer to its source of origin reduces packaging, transport costs and environmental impact - greenhouse gas emissions and pollution can be reduced through increased bicycle and public transport use
Objective 4 – Fostering creativity and innovation T4.8 Broadband usage *Broadband usage in SA to exceed the national average by 2010 and be maintained thereafter*	• South Australian data show a lower level of household access to broadband than the national average • The SA Broadband Strategy identifies health as a primary sector for actioning broadband initiatives • Increased availability and uptake of broadband technology can lead to: - improved delivery of health information and services, real-time professional support for remote practitioners and improved self-management support of health conditions - connections for community members, particularly those who are physically isolated - support for improved educational attainment and opportunity - an increase in economic opportunities/employment for people in regional SA through business tools and support packages - improved access to financial services • Effective access to current technology (such as broadband) has been identified as an emerging determinant of health and wellbeing

Case study target	Associated population health issues
Objective 5 – Building communities T5.9 Regional population levels *Maintain regional South Australia's share of the state's population (18%)*	• Economic diversity is becoming critical to the maintenance of small regional communities in SA, particularly given the interconnectedness of social and economic infrastructure, the importance of local employment and educational opportunities, and the need to maintain or enhance health infrastructure in more regional areas • The importance of maintaining economic diversity within smaller regional communities is fundamental to population diversity. The challenge for achieving this target is to balance growth in some parts of the state with its impact on smaller communities • The health of people living in country SA is poorer when compared to that of people residing in metropolitan Adelaide • The quality of life of all South Australians benefits from a state that provides diverse opportunities for recreation, business and living
Objective 6 – Expanding opportunity T6.5 Economic disadvantage *Reduce the percentage of South Australians receiving government benefits (excluding age pensions) as their major income source to below the Australian average by 2014*	• The opportunities for reducing economic disadvantage lie in: - increasing the level of disposable income through increased level of employment and greater labour market participation - increasing opportunities for full participation in community life - reducing marginalisation from the labour market of those injured at work or in motor vehicle accidents by improving return to work outcomes - recognising that investment in the early years in education and health returns greater economic opportunity and income to the individual and leads to improved health

Discussion of themes from the case studies

One of the underlying concepts of HiAP is that the health of populations can be improved through organised societal responses designed to protect and promote health, and to prevent injury, illness and disability. A population health approach aims to prevent, through organised efforts, whole-population problems. Generally, population health efforts try to focus on the upstream determinants of health—environmental, social, economic and behavioural. This focus clearly delineates population health from clinical health services, which are designed to manage episodes of disease. This is a difficult concept and discussion in the workshops regularly moved back to individual health approaches and the availability of health services. In order to maintain focus, a population health expert with sound knowledge of the SASP target and related population health issues was engaged to support the case study process.

Equity was another theme commonly identified by case study partners. Frequently, the socially and economically disadvantaged were identified as a population group vulnerable to unintended negative impacts on health from SASP target policy decisions. In hindsight, this is not a surprising result, as HiAP aims to ensure that social determinants support health and deliver improved health outcomes. People who experience social and economic adversity tend to have poorer health outcomes and are more vulnerable to the unequal distribution of social determinants such as education, employment, transport, income, social support and housing. South Australia has recognised the importance of including equity considerations under the HiAP banner and this has been adopted in the HiAP principles developed at the conference (see Kickbusch article in this Bulletin).

Specific case studies

The links between population health and three of the case study targets (T2.6 Healthy weight; T2.12 Work–life balance; T4.8 Broadband usage) are explored more fully in the following three papers.

Conclusion

The policy learning process proved the utility of using the HiAP approach to examine connections between health outcomes and achievement of SASP targets. Feedback from delegates at the HiAP conference indicated strong support for continuing both the health lens analysis and the case study process. There was broad agreement from conference delegates that HIAP is an important approach to include in future policy-making processes.

Case study: Healthy weight

Michele Herriot
Director, Health Promotion Branch
South Australian Department of Health

SA Strategic Plan target T2.2 Healthy weight – *Increase the proportion of South Australians 18 and over with healthy weight by 10 percentage points by 2014*

Introduction

There can be no clearer need, nor more urgent case, for a Health in All Policies (HiAP) approach than the major health problem of overweight and obesity. The levels of obesity in Australia, and indeed across the world, are well documented, as are the ensuing health consequences both for the individual and at the population level. What is less clear is where and how to intervene and where the responsibility for such intervention rests.

The approach of using a 'health lens' to identify ways to achieve the overweight and obesity reduction target set by the SA Strategic Plan (SASP) and improve population health provides one opportunity to explore these concerns. The case study outlined here aimed to collectively identify proposals that build on the initiatives of the Eat Well Be Active Healthy Weight Strategy for the overweight and obesity target from an HiAP approach.[1]

Consequences of obesity

Overweight and obesity poses a health burden at all ages and is therefore a significant population health concern. Although overweight and obesity is considered a disease in its own right, it is also a major risk factor for other diseases. It increases the risk of premature death and contributes to a number of non-fatal yet debilitating conditions that reduce quality of life. In Australia overweight and obesity accounts for 7.5% of all 'disability adjusted life years' (DALYs).[2] The adverse health outcomes caused by carrying excess weight are both physical and psychological in nature.

Overweight and obesity places an economic burden on the health care system as well as contributing to costs associated with reduced productivity and mortality. It may also be influencing absenteeism and preventing workers from staying in the workforce through its association with chronic disease and injury.[3]

In a report prepared for Diabetes Australia the estimated financial cost of obesity in Australia in 2005 was $3.767 billion. Of this, productivity costs were estimated as $1.7 billion (45%), health system costs as $873 million (23%) and carer costs as $804 million (21%). Losses from transfers (taxation revenue foregone, welfare and other government payments) were $358 million (10%) and other indirect costs were $40 million (1%). The net cost of lost wellbeing (the dollar value of the burden of disease, netting out financial costs borne by individuals) was valued at a further $17.2 billion, bringing the total cost of obesity in 2005 to $21.0 billion.[4]

The complex system of causality in the obesity picture

Causality with overweight and obesity is not simple. Its increasing levels in the population are multi-factorial, being a complex interplay of individual factors—diet, physical activity and genetic makeup—and our environment, in the broadest sense of the word. As stated in the UK Foresight program's *Tackling obesities: Future choices–project report*:

> 'At the heart of the issue lies a homeostatic biological system that struggles to maintain an appropriate energy balance and therefore body weight. This system is not well adapted to a changing world, where the pace of technological change has outstripped that of human evolution.
>
> Human biology, growth and development early in life, eating and physical activity behaviours, people's beliefs and attitudes, and broader economic and social drivers all have a role to play in determining obesity.'[5]

Intervention points in this complex system

Given the complex causality of obesity, the solution is neither easy nor obvious. The Foresight report quoted above takes a system mapping approach and considers possible intervention points in this system. The system arranges the variables into the following seven interrelated clusters:

- physiology—individual biological variables
- individual activity—the levels of recreational, domestic, occupational and transport activity
- physical activity environment—factors which facilitate or obstruct physical activity
- food consumption—characteristics of the food market in which consumers operate
- food production—drivers of the food industry, such as pressure for growth and profitability
- individual psychology—includes psychological attributes, e.g. self-esteem, food literacy
- social psychology—includes education, media availability and consumption, and social attitudes to weight.[6]

This 'obesity system map' indicates the complexity of the obesity issue, characterised by a large number of variables and causal linkages. Intervention needs to reflect this complexity and be equally broad ranging and substantial. It must be effective across different areas of government policy and not be seen as the responsibility of specific portfolios. An HiAP approach is vital.

Health in All Policies approach – Generation H!SA

Based on the approach of the Foresight report discussed above, Professor Ilona Kickbusch in her recommendations as Thinker in Residence has made suggestions for a way forward. She has proposed the Generation H!SA, or Generation Healthy, approach to achieving the overweight and obesity target. The target group is the next generation of South Australians.

Professor Kickbusch considers that the overweight and obesity target provides an exemplary opportunity for key interactions across the SASP, as this target can only be achieved if there is real cooperation and collaboration across portfolios and sectors.

The components of the Generation H!SA approach as outlined by Kickbusch are:

- the highest political commitment through child-specific policies focused on wellbeing. Intervention in the early years is absolutely crucial as we know that health in early life is the basis of health in adult life. Therefore, investment in the early years reaps benefits both for the individual child and for society as a whole in the future.
- a long-term and intergenerational strategy based on an environmental approach. This recognises that the environments in which people live, work, are educated, are cared for and spend their leisure time have a major impact on health outcomes. Educational, workplace and community environments influence health, and are settings where protective factors such as physical activity and good nutrition can be actively supported. Social and built environments have a huge influence on the foods people choose to eat and how easy it is to be active and thus influence weight. If we are to impact on population health, it is at this level that we need to intervene.
- an approach that combines HiAP with partnerships. Overweight and obesity cannot be impacted upon by the health sector alone. We need to form meaningful partnerships across the government, non-government and community sectors.
- new mechanisms for across-government implementation and accountability. This will be the task of the HiAP approach as we move forward towards implementation.
- a scaling-up of the efforts of the health and education sectors. Generation H!SA would constitute a priority action for the health sector. Many strategies are already planned or in place, but these need to be brought together and examined for possible synergies and opportunities for cooperation.
- secured funding, possibly through new financing mechanisms such as taxes on unhealthy products. This mirrors the model used in many places to reduce the use of tobacco, in which the price of cigarettes was increased, making them less desirable while also making money for action on smoking prevention.
- dedicated research, modelling, surveillance, evaluation and monitoring. To be fully engaged, Generation H!SA will require quality data to monitor the impact of interventions on child health. This could be via a population cohort study of the relevant generations of children as well as well-evaluated pilot and demonstration projects.
- citizen action, involvement and participation.

Generation H!SA is underpinned by the International Convention on the Rights of the Child, which takes account of the social gradient of obesity—there are confirmed links between obesity and socioeconomic status; and which is built on a combination of change approaches—from environmental, regulatory, policy and health literacy approaches, to personal treatment interventions and disease management approaches.

This complements the across-government work already underway in South Australia, which includes partnerships with: PIRSA to encourage fruit and vegetable consumption; DTEI to support active transport; DECS on the Right Bite school canteen program; DEH on the Healthy Parks Healthy People program; and Recreation and Sport on 'be active' workplaces, to name but a few examples.

Professor Kickbusch's recommendations will now go forward to the South Australian Government for consideration.

References

1. South Australia Department of Health. Eat Well be Active Healthy Weight Strategy for South Australia 2006–2010. http://www.health.sa.gov.au/pehs/branches/health-promotion/hp-healthy-weight.htm
2. Begg S, Vos T, Barker B, Stevenson C, Stanley K, Lopez AD. The burden of disease and injury in Australia 2003. AIHW cat. no. PHE 82, p. 79. Canberra: AIHW, 2007.
3. Australian Institute of Health and Welfare. Obesity and workplace absenteeism among older Australians. Bulletin issue 31, AIHW cat. no. AUS 67. Canberra: AIHW, 2005.
4. Access Economics. The economic costs of obesity. 2006. http://www.accesseconomics.com.au/publicationsreports/showreport.php?id=102
5. UK Foresight program. Tackling obesities: Future choices. Project report, 2007, p. 58. http://www.foresight.gov.uk/
6. UK Foresight program. Tackling obesities: Future choices. Project report, 2007, pp. 78–79. http://www.foresight.gov.uk/

Case study: Work–life balance: What do we know, what do we need to know?

Barbara Pocock, Natalie Skinner and Philippa Williams
Centre for Work + Life
University of South Australia

SA Strategic Plan target T2.12 Work–life balance – *Improve the quality of life of all South Australians through maintenance of healthy work–life balance*

More and more Australians are participating in paid work for longer over their life courses. Women are increasingly contributing to paid work and, in a tight labour market, Australia's economy relies on them. Putting more time and effort into paid work, however, has important implications beyond the workplace—it affects individuals' health as well as personal, household and community wellbeing.

Governments are increasingly aware and attentive, at least rhetorically, to these work–life issues due to their widespread occurrence in community conversation, as well as their demographic, health and labour market implications. The Government of South Australia has included a healthy work–life balance (WLB) target in the SA Strategic Plan (SASP) lead by SafeWork SA (SWSA). The target has also been selected as one of the case studies for the Health in All Policies (HIAP) project, as a SASP target which has clear implications for improving population health.

International studies show that poor work–life outcomes are associated with significant health costs that occur across the labour market. In 2001 Canadian researchers estimated that the health costs in Canada of high work–life conflict amounted to C$13.8 billion. This conflict was attributable to role overload (i.e. too much to do in the time available), caregiver strain and work–family spillover.[1] We lack any reliable assessment of the direct and indirect costs of poor work–life outcomes to the health system in Australia but, based on the Canadian assessments, they are likely to be considerable.

Measuring work–life effects in Australia

In 2007 the Centre for Work + Life (CW+L) at the University of South Australia established a new Australian measure of work–life interaction—the Australian Work and Life Index (AWALI).[2] It is the first survey of work–life interaction across Australia and will be re-run annually from 2008 to 2010. This industry linkage grant project is a collaboration between the University of South Australia, SWSA and the Western Australian Health Department, and is supported by the Australian Research Council. The project will allow comparisons of work–life interaction across Australia over time.

Through the participation of employees in the Western Australian health service, it will include analysis of the causes and consequences of different work–life outcomes through qualitative analysis of interviews and focus groups. The analysis will investigate work–life issues at three important life stages: the point of entry to occupations, family formation and into retirement. Through this deeper study involving a wide range of health occupations, we hope to inform workforce strategies in this sector and provide evidence about policy interventions that either help or hurt the work–life outcomes of employees across the health workforce.

The first AWALI survey in 2007 found that work affects most working Australians beyond the workplace.[3] Over half of the employees we surveyed find that work sometimes, often or almost always affects their personal activities, and 60.7% find it regularly keeps them from spending the amount of time they would like with family or friends. Men report less satisfaction with their work–life balance overall than women, reflecting their longer hours at work. However, when hours are controlled for, women have worse work–life outcomes than men and are much more pressed for time, reflecting their greater unpaid work hours.

It seems that work is also having a significant impact on workers' community connections. Just under half the respondents felt that work sometimes, often or almost always interferes with their capacity to build and maintain community connections and friendships.

Australian workers often feel rushed for time, with 55.6% of women feeling often or almost always rushed or pressed for time compared to 49.9% of men. This is particularly the case for women with children, with 72% feeling rushed for time compared to 44.2% of women without children.

Controlling for hours, male employees in permanent employment have the best work–life outcomes. Longer hours of work are consistently associated with worse work–life outcomes. While part-time workers generally experience less work–life interference than those working full-time, for women part-time work may not provide very much protection from negative work-to-life spillover, and such interference is worse for women who work longer part-time hours (16–34) than for full-time working women.

Less than half the respondents reported working the amount of hours they wanted, with many preferring to work fewer hours. Those with a good match between actual and preferred hours have the best work–life outcomes and those who want to work less have the worst.

Work–life spillover is greater for those in poorer quality jobs, and this holds consistently for a range of job quality measures including job security, work overload, time and task autonomy, flexibility of working time and overall job satisfaction. Particular occupations are associated with lower levels of work–life interference and others with much higher rates. Managers, professionals, community and personal service, and technical and trades workers are most likely to experience work–life interference, while sales and clerical and administrative workers are least affected.

However, despite such high levels of spillover from work to life, three-quarters of Australians are generally satisfied with their work–life balance.

Health and work–life outcomes

It is widely accepted that work can have significant positive and negative impacts on psychological and social wellbeing[4] as well as workers' physical health. It is not surprising, therefore, that negative work–life spillover is associated with impaired physical and mental health.[5]

The relationship between work–life outcomes and workers' health in Australia is confirmed by the AWALI 2007 research. Men and women with the worst work–life outcomes also have the poorest health ($P < 0.001$), and this effect is stronger for women than men.

Workers working the hours preferred and those with shorter working hours had better self-reported health outcomes. These relationships, however, are statistically significant only for women. Women with poor health are more likely to have a mismatch between their actual and preferred hours (70%) than women with good health (56.7%). For most workers the mismatch occurs as a function of working more hours than preferred.

Use of medical services and work–life outcomes

AWALI 2007 also contained two behaviour-based self-reported measures of health—the number of visits to a health professional in the past 4 months and the number of prescription medications purchased over the same time period. These results also indicated a relationship between poorer work–life outcomes and poorer health. In general, those who are dissatisfied with their work–life balance are also most likely to make frequent visits to a health professional (four or more times in the past 4 months) and to make more frequent purchases of prescription medication.

A Health in All Policies approach

The 2007 AWALI report reflects the lively and widespread community conversation underway in many Australian homes and workplaces about what work does to our health. With rising workforce participation rates, spillover effects reach into a growing proportion of homes. People are giving a lot to work—and taking a lot home from it as well.

The health and medical costs of poor work–life interaction for individuals, households and the health system are poorly measured at present. They are privately experienced but have public effects on our health budget that are likely to continue to be substantial. They deserve more public attention and clearer measurement. The health workforce in particular deserves closer study, given that it comprises around 10% of Australia's total labour market and faces important challenges in recruitment and retention.

As part of the South Australian Government's response to the WLB target, SWSA is developing a range of resources to assist employers and employees implement flexible work arrangements. The SWSA program is also supporting the AWALI project, and has proposed a further extension of the project to examine the health and workforce impact of WLB provisions in the health sector as part of the HiAP project proposals. This extended project would explore the health impact of contemporary work patterns on the South Australian population, with a specific case study analysis of arrangements for workers within the health sector.

The AWALI project has highlighted that the way in which work is organised is creating increasing strain within the current workforce; and that high numbers of working parents, greater numbers of older workers, the intensification of work and the growth of long hours of work all have an impact on health and continued workforce participation. Health represents a good case study for extrapolation to the broader SA labour market as the sector covers both blue and white collar workers, shiftwork, casual and permanent staffing arrangements, and a high number of women. Like the rest of the SA labour market, it also has an average age of over 40 years with large numbers contemplating leaving the sector. The implementation of WLB initiatives can not only improve participation rates through supporting workforce engagement and retention, but also has direct health outcomes for workers by reducing stress factors at work and allowing time for family, exercise and other interests.

Some of the most influential workplace players—managers and professionals—are the most affected by long hours and work–life pressures. They are in charge in many locations, including in the health system. What does their experience of poor work–life outcomes mean for those they supervise and manage? What cultures are being re-created through their expectations and the transmission of their own stresses? These questions also deserve closer study.

The CW+L aims to build on ongoing collaboration with the Western Australian health sector and the South Australian Government, through SWSA, to help inform better policy responses to the increasing challenges around work–life issues in Australia and, in particular, assist those working in or managing Australia's health system and workforce. Consideration of the impact of access to quality work arrangements as a social indicator of health will be an important contribution to exploring how policy initiatives can influence health outcomes.

References

1. Duxbury L, Higgins C. The 2001 National Work-Life Conflict Study: report three. Healthy Communities Division, Health Canada, Ottawa, Ontario, 2004.
2. Pocock B, Williams P, Skinner N. The Australian Work and Life Index (AWALI): Concepts, methodology and rationale. Discussion paper no. 1/07, Centre for Work + Life, Adelaide, 2007. http://www.unisa.edu.au/hawkeinstitute/cwl/publications.asp
3. Pocock B, Skinner N, Williams P. Work-life in Australia: Outcomes from the Australian Work and Life Index (AWALI) 2007. Discussion paper no. 2/07, Centre for Work + Life, Adelaide, 2007. http://www.unisa.edu.au/hawkeinstitute/cwl/publications.asp
4. Layard R. Happiness: Lessons from a new science. London, Penguin, 2005.
5. Allen TD, Herst DEL, Bruck CS, Sutton M. Consequences associated with work-to-family conflict: A review and agenda for future research. J Occup Health Psychol 2000;5(2):278–308.

Case study: Broadband and public health

Joanne Murray
BroadbandSA, Information Economy Directorate
Department of Further Education Employment Science and Technology

SA Strategic Plan target T4.8: Broadband usage – *Broadband usage in South Australia to exceed the national average by 2010 and be maintained thereafter*

Introduction

South Australians from all walks of life are beginning to understand that broadband will have a profound effect on their future and will undoubtedly shape many aspects of the way they conduct their lives.

South Australia's Strategic Plan[1] identified broadband usage as one of the challenges facing the state. In addition, the South Australian Broadband Strategy[2] identifies health as a primary sector for actioning broadband initiatives. ICT and broadband are readily acknowledged as underpinning the key drivers of social and economic change in communities, and health services with their ever-increasing costs are a significant part of that changing economy.

There is consensus that social capital, social cohesion, and community networks and infrastructure are significant factors in population health status. Broadband can play a fundamental role in enabling and changing the broader determinants of health by contributing to lifestyle factors, establishing social and community networks, and being a change agent to socioeconomic, cultural and environmental conditions.

There are many examples of how broadband and the application of new technology can contribute to improving population health. Broadband can provide secure, functional and equitable participation in e-health activities by improving the delivery of health information and services, providing real time professional support for remote practitioners, connecting community members (particularly those who are physically isolated) and building social support networks.

One outcome of the Health in All Policies (HiAP) approach is to increase the potential for public policy to contribute to improving population health through the application of new technology and the expansion of accessible, affordable infrastructure. The challenge is to ensure that the improvements are shared equally across the population, particularly in regional South Australia, and that health inequalities are narrowed.

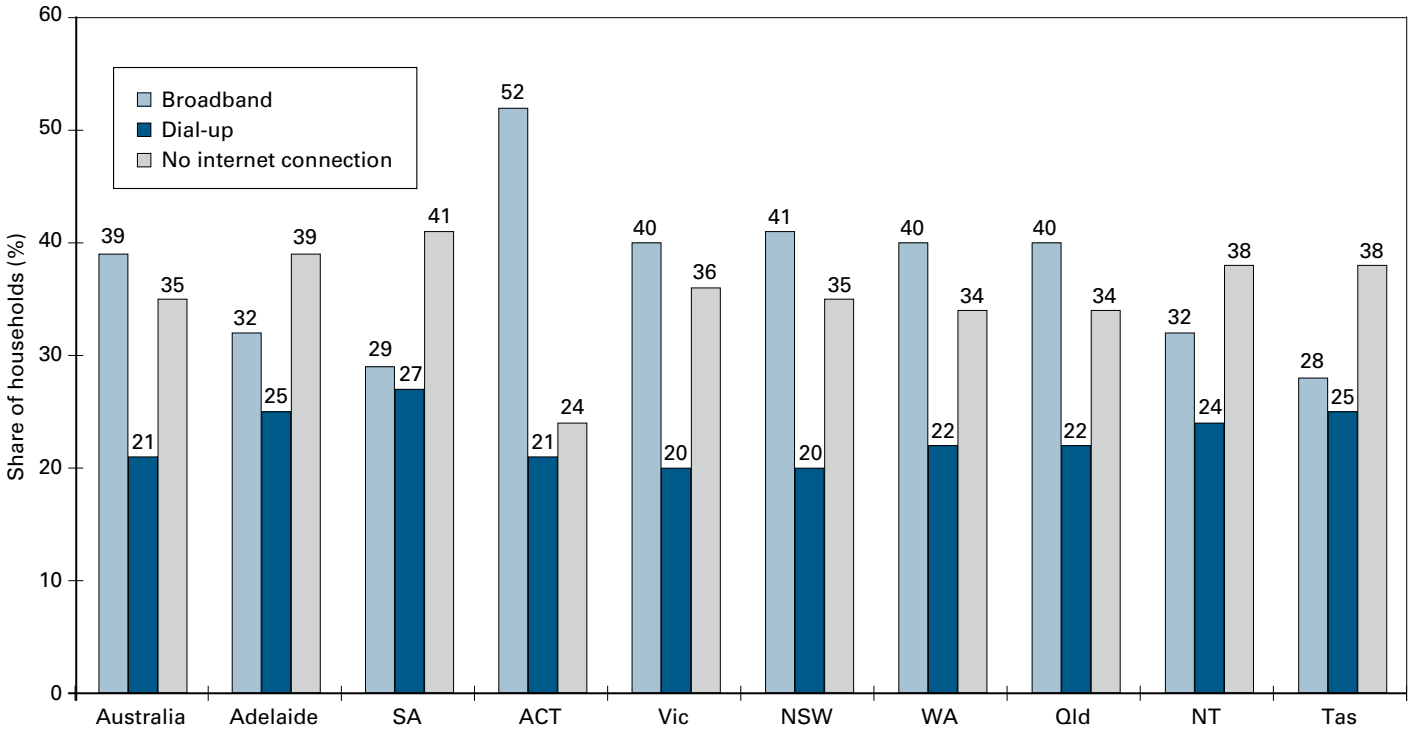


Figure 1: Household broadband use by state and territory 2006

Source: ABS, 2006 Census of Population and Housing

'Broadband comes from the words "broad bandwidth" and is a general term to describe fast, "always-on" internet access. Broadband delivers access to content, applications and a range of services, some or all of which can occur simultaneously.

There is unlikely to be a "one-size-fits-all" broadband solution for Australia as different users will always have different needs. The objective is for Australians to have always-on, multi-megabit-per-second (MBPS) access anywhere, anytime, simply.' [3]

Broadband take-up in the community

ABS data[4] on internet usage by household in 2006 (Figure 1) indicate that 29% of South Australians used broadband, 27% had dial-up, and 41% had no internet connection. Broadband take-up is changing rapidly and it is difficult to maintain up-to-date data. However, the South Australian data has consistently shown a lower level of household access than the national average; in fact, as indicated in Figure 1, we were the second lowest in the country.

There are a number of factors that influence this trend, including:

- socioeconomic constraints—the cost of broadband access is still an impediment
- ageing population—internet usage is higher in younger than older age groups
- education level—internet usage is higher among educated communities
- business employment size—as size increases, the proportion of businesses which use broadband increases
- 'blackspots' that exist in the metropolitan area—about 10% of Adelaide premises cannot access ADSL.

These issues are compounded for people of lower socioeconomic status or in geographically distant or small population clusters. South Australia has a higher proportion of people who have lower incomes and/or are dependent on government income support than other mainland states. It also has a very dispersed population outside the metropolitan area, with very small regional population groupings outside the four main regional centres, which themselves are relatively small.[4] These areas have the most to gain socially and economically from the benefits of broadband.

Analysis of the overall ABS data reveals a relationship between a number of sociodemographic characteristics and internet take-up. The characteristics associated with limited broadband take-up included:

- households with a weekly income of less than $500
- lone person households
- indigenous Australians
- older Australians, i.e. aged 65–74 and 75+ years
- people with a disability
- the highest level of education attained being year 10 or below
- a minimal or absent proficiency in English.[5]

In South Australia age and income had the strongest relationship with broadband take-up. An increase in both total internet and broadband take-up was observed as weekly household income increased.[5]

Online technology provides new opportunities for communication and is increasingly being used to provide information and services. The state faces a challenge to find a way to support people in developing the capacity and confidence to access available online resources and services such as e-health. With this in mind, focus could be directed to communities who may be disadvantaged or marginalised, whether through social and economic circumstances, isolation or limited access to services. Developing the use of online technology in these communities will ensure that they are not left behind and further disadvantaged, and may also be used as a tool to redress aspects of their disadvantage. Through the use of broadband technologies the socioeconomic divide between South Australians and the rest of Australia can be narrowed.

Potential population health benefits from increasing usage of broadband

Broadband can contribute to improved delivery of potential population health benefits. Individuals can access health information and services, and real time professional support and assistance in building their own social support networks.

The convergence of voice, data and video is becoming increasingly important in the health sector as video-conferencing, health call centres, tele-health services and shared secure databases are used. These applications enable regional hospitals to remotely access specialist and allied health skills available within major health facilities, which are predominantly located in metropolitan centres.

Broadband is improving communication between doctors and other health providers and assisting with the rapid online delivery of results, referrals and requests across different geographical settings, including the high need areas of rural and remote regions. Productivity benefits can be gained through such widespread use of electronic health information.

As an important first step in facilitating improved access to broadband for health care providers, the Australian Government introduced the $60m Broadband for Health Program, which aimed to provide broadband internet access to general practitioners, community pharmacies and Aboriginal Community Controlled Health Services nationwide. The program has successfully connected more than 90% of South Australian pharmacies to broadband, while around 65–70% of GPs are using broadband for pathology downloads, correspondence, banking and medical information research.[6]

Online technology is also increasingly becoming a tool for the delivery of health information and programs, whether supporting community-based health promotion campaigns or providing high-level e-consultation.

One example of e-health is the tele-health (telepsychiatry services) application between a small regional hospital (Whyalla) and a large Adelaide-based teaching hospital (Royal Adelaide Hospital). Using broadband services, the regional hospital has immediate access to the expertise of the city hospital through high-definition videoconferencing. Medical specialists help diagnose and treat patients remotely over a dedicated broadband link. These services were trialled in 1993, resulting in over 65 additional sites within rural South Australia accessing the service. The success of such services highlights the benefits of pursuing the enhancement (rather than replacement) of service delivery to rural and remote regions via videoconferencing facilities.

This type of technology shows how broadband can overcome workforce shortages that are often an issue in regional Australia, and at the same time ensure that South Australians have access to the highest quality health care.

Elsewhere in the world broadband is making enormous differences to the health care sector. For example, the Veterans Association of America has implemented a remote patient monitoring program that has reduced hospitalisation by up to 60%. The social benefit of this type of program—which allows older people to stay at home and retain independence—is enormous.[7] There are also huge economic savings with such schemes, particularly if we project into the future recognising that South Australia has an ageing population.

The Department of Health and Ageing is in the process of tendering for a South Australian Care Planning System (SACPS). The SACPS is a web-based system that will improve collaboration between health care providers by giving them the tools to create, share and store care plans electronically; and give patients the ability to access their care plans securely via the internet.[8]

The application and benefits of ICT and broadband technologies for health is not a new concept. In 2002 the Commonwealth Government determined that real 'social benefits' can be derived from wider use of online technologies, resulting in a reduction in human suffering and better health outcomes. The report concluded that, even then, health care practitioners had shown tremendous adaptability and resilience in making use of restrictive narrowband applications to achieve better health outcomes at a lower cost. The emergence of affordable broadband should therefore ensure that significant benefits are now achievable.[9]

The Commonwealth Government identified three main drivers of broadband take-up in health: clinical applications, education and professional development, and electronic management of patient records. It also indicated that the single most important driver of the take-up of broadband is cost.[9]

Supporting improved educational attainment and opportunity

Medical specialists are increasingly using the internet for information retrieval and incorporation of results into treatment decisions. Information retrieval technology is critical in allowing practising physicians to pull relevant, high-quality information from the massive and ever-changing database of medical research.[10] The internet is changing not only the mechanism by which information is disseminated to physicians, but also the technology of influence—the mechanisms by which patients can affect what their physicians do.[10]

Initial results of a recent survey of residents of Yorke Peninsula in South Australia indicated that the majority agreed or strongly agreed that broadband will help to improve access to health information and services.[11] In addition, almost half of the respondents indicated that they use their broadband connection to access government websites and for studying and education.

A summary of the opportunities and possible applications of broadband for improved population health is provided in Table 1.

Table 1: Summary of opportunities for improved population health[12]

Sector	Opportunities offered by broadband
Educational (university, TAFE, schools, registered training organisations)	Dramatically enhance the effectiveness and potential of distance learning and online education, both real time and time shifted
Community and business	Enhance access to economically valuable information (such as detailed weather forecasts and commodity prices) and research
Business	Enable: • electronic transactions and payment capability • continuing viability of regional businesses and industries (such as insurance, vehicle and machinery maintenance and retail franchises) in a business environment that routinely assumes access to broadband to transmit digital images, complex documents and other large datasets • professional development and support of staff • increased access to markets • increased access to technical support • increased business opportunities
Community	Reduce: • regional social disadvantage by improving access to health, welfare, personal development and lifestyle information, as well as better access to distant relatives and friends • economic disadvantage by access to employment opportunities and self-employment
Health care	Enable improved health services, e.g.: • patient diagnosis, treatment options and care planning • treatment, management and monitoring of chronic disease • prevention and promotion activities • professional development and support of staff

There is no definitive research into the population health benefits of expanding access to, and usage of, broadband. Most of the research focuses on the impact of actual improvements to health services through such technology, rather than the more complex concept of how technology that delivers or supports services through faster, cheaper, and more timely and reliable delivery of information results in an outcome that improves the health of its recipients at a population level.

It can be assumed, however, that the benefits that broadband brings can be correlated with the opportunities it delivers. For example:

- improved social connections facilitated by broadband assisting in maintaining mental health[13]
- improved business opportunities leading to employment growth
- higher levels of employment being linked to better health and higher levels of income.

The issue in a population health context is not that health benefits can be achieved by the adoption of such technology, but rather that the benefits tend to accrue more rapidly to those who are already relatively advantaged (e.g. of higher socioeconomic status and/or with better health).

The potential for public policy to contribute to improving population health

Broadband has the potential to meet some of our most pressing needs (e.g. helping health systems to improve quality, accessibility and population health outcomes) while also becoming more cost-effective.

This makes future broadband use all the more critical for policymakers. Whether in addressing ageing societies, climate change and environmental management, energy efficiency, business, poverty reduction, conservation or health care, the implications for economic and social activities have become far more reaching and profound than many imagined possible. Our expectations of the internet and broadband and what it can deliver are higher than ever and are likely to continue growing.[11]

There is no doubt that transformational benefits are possible in the health sector through a networked system with a capability to deliver a range of clinical, educational, professional development and administrative applications, some of which are already readily available. The application of broadband for these purposes is the true value of this type of infrastructure.

The issue is how to address the challenges of *access to infrastructure, cost/affordability,* and *training and skills* for those who are either not ready adopters of technology or don't have the means to engage in it. Initial results of the Yorke Peninsula survey indicated that a majority of internet and broadband users were influenced to take up broadband through a 'zero cash upfront' offer.[12]

Policy should reflect the need to make available affordable broadband services to the broader community, in some cases directed to certain socioeconomic sections of the population.

Where to from here?

A range of policy measures will be needed to achieve the goal of improving population health through increasing the take-up of broadband. In doing so, South Australia will be establishing an approach that has not been well studied or highly developed elsewhere. The availability of broadband at an affordable price would encourage more widespread use and deliver greater productivity gains and better health outcomes.

Internet- and broadband-based applications underlie major advances in science, business organisation, environmental monitoring, transport management, education and e-government—indeed, it is difficult to think of a policy domain that is not affected by the internet.[11] Nowadays, many things would not operate without the internet, and broadband is rapidly becoming the fourth essential utility after water, gas and electricity.[7]

In only a few years we will be measuring the benefits that affordable broadband access has provided to population health and wondering how we lived without it.

References

1. Government of South Australia. South Australia's Strategic Plan, 2007. http://www.stateplan.sa.gov.au/
2. Government of South Australia. South Australia's Broadband Strategy, December 2004. http://www.innovation.sa.gov.au/ict/broadbandsa/state_broadband_strategy
3. Australian Government. Broadband Blueprint, 2006.
4. Australian Bureau of Statistics (ABS). 2006 Census.
5. Information Economy Directorate, Digital Bridge Unit, DFEEST. Examining the digital divide in South Australia (draft), November 2007.
6. SA Division of General Practitioners http://www.health.gov.au/broadband
7. Senator Stephen Conroy. Address to Australian Telecommunications Users Group (ATUG) Breakfast Event, 12 November 2007.
8. Health ConnectSA. Health Clix Edition 6, November 2007.
9. Australian Government. Broadband in health: Drivers, impediments and benefits, 2002. http://www.dcita.gov.au
10. Ian Ayers. Super crunchers – how anything can be predicted. London: John Murray 2007. Chapter 4, 82–95.
11. Information Economy Directorate, DFEEST. Yorke Peninsula Broadband Study 2007 – initial results. Prepared by McGregor Tan Research, November 2007.
12. This is based on South Australia's Broadband Strategy, the Submission on Broadband Issues by the Broadband Advisory Group to the Western Australian Government and the Victorian Broadband Framework: Pathway to the Future.
13. Australian Government. E-mental health in Australia: Implications of the internet and related technologies for policy, 2002.

Communicable Disease Control Branch Surveillance Report 1 January to 31 December 2007

The Disease Surveillance and Investigation Section of the Communicable Disease Control Branch (CDCB) of the Department of Health (DH) operates a statewide surveillance system for notifiable diseases, enabling analysis of health data and initiation of specific public health controls to prevent further spread of disease.

Collected data inform state and national services through the provision of specified data to the National Notifiable Diseases Surveillance System. A summary of notifiable diseases in South Australia is published on the DH website each week. This includes text and tables with up-to-date counts of all notified infections as well as historical data and information about current cluster and outbreak investigations.

Some investigation and control activities are conducted in conjunction with other agencies that provide expertise and authorities under other Acts in South Australia. These agencies include OzFoodNet Australia, Primary Industries and Resources SA (PIRSA), the Institute of Medical and Veterinary Science (IMVS) and Environmental Health Officers (EHOs) from local government; as well as other branches of DH including Infection Control Service, Food Policy and Programs Branch and Applied Environmental Health.

Summary

In the second half of 2007 CDCB recorded a decrease in reports of many gastrointestinal diseases after a greater than usual increase in summer and autumn.

During 2007 the Disease Surveillance & Investigation Section collected 7,301 reports of notifiable diseases.

Investigation and control activities included:

- 17 cases of meningococcal disease – including one cluster
- 3 cases – *Legionella pneumophila* serogroup 1 disease
- small Q fever outbreak
- a cluster of mumps
- 7 cases of *Listeria monocytogenes* infection
- 1 cluster of cases with Shiga-toxin producing *E. coli* O157 infection
- 5 typhoid cases
- 4 paratyphoid cases
- 5 hepatitis A virus cases
- 106 clusters of gastroenteritis – 79% due to norovirus
- enhanced surveillance for a *Cryptosporidium* outbreak.

In partnership with OzFoodNet, foodborne disease investigations included:

- 2 Campylobacter outbreaks
- 18 Salmonella outbreaks/clusters
- 2 outbreaks of gastroenteritis - no agent identified.

VECTORBORNE DISEASE

Mosquitoes are vectors for two Arboviruses that commonly cause disease in South Australia: Ross River and Barmah Forest viruses. Both infections demonstrate cyclic patterns of disease, peaking in summer months. Each year in early summer a health alert is released from CDCB to raise awareness of these infections, and a prevention program, "Fight the Bite", has operated in South Australia since December 2004.

Arboviruses cause disease ranging from mild to disabling. Common symptoms include arthralgia, rash, flu-like symptoms and swollen glands. Severe complications occur rarely. Blood tests confirm the diagnosis, frequently by demonstration of specific IgM arboviral antibodies in acute-phase sera.

Barmah Forest virus

In 2007, 60 cases of Barmah Forest virus infection were reported compared to 190 in 2006. Cases comprised 40 males and 20 females, with an age range of 15–74 years.

Figure 1 illustrates a large number of cases of Barmah Forest virus infection early in 2006, followed by a gradual decline during the remainder of the year. Although many fewer cases were recorded 2007, the incidence is more than twice the background level of infections normally reported in inter-epidemic periods.

Ross River virus infection

Seasonal variation in Ross River virus disease is observed. Between January and December 2007 inclusive, 214 cases of Ross River virus infection were reported (80 males, 134 females, age range: 4–84 years), compared to 365 in 2006. While these 2007 data are low compared to the number of cases reported in epidemics, they are approximately double the background level of Ross River virus infections normally reported in inter-epidemic periods. For example, 94 cases were reported in 2005. Figure 2 displays Ross River virus incidence since 2002, and reflects the higher than usual background activity.

Ross River virus activity in South Australia can be viewed at: www.health.sa.gov.au/peh, as well as information about prevention of vector borne diseases and the Fight the Bite campaign.

Dengue fever

During 2007, 23 cases of dengue fever infection were recorded, compared to 10 cases in 2006 and five in 2005. Cases comprised 14 males and 9 females; age range 18–64 years. The majority of infections were acquired in Asia, and none were locally acquired.

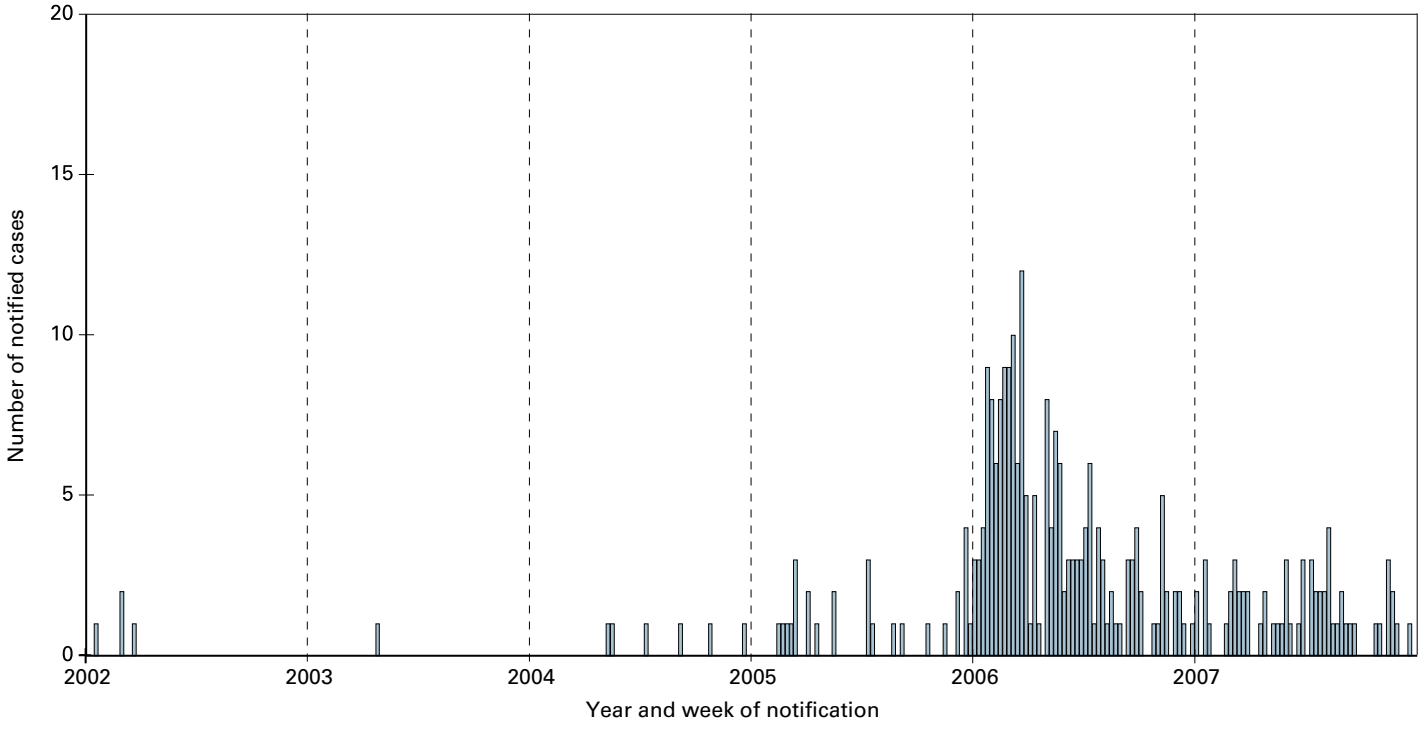


Figure 1: Notified cases of Barmah Forest virus infection, by month of onset 1 January 2002 to 31 December 2007

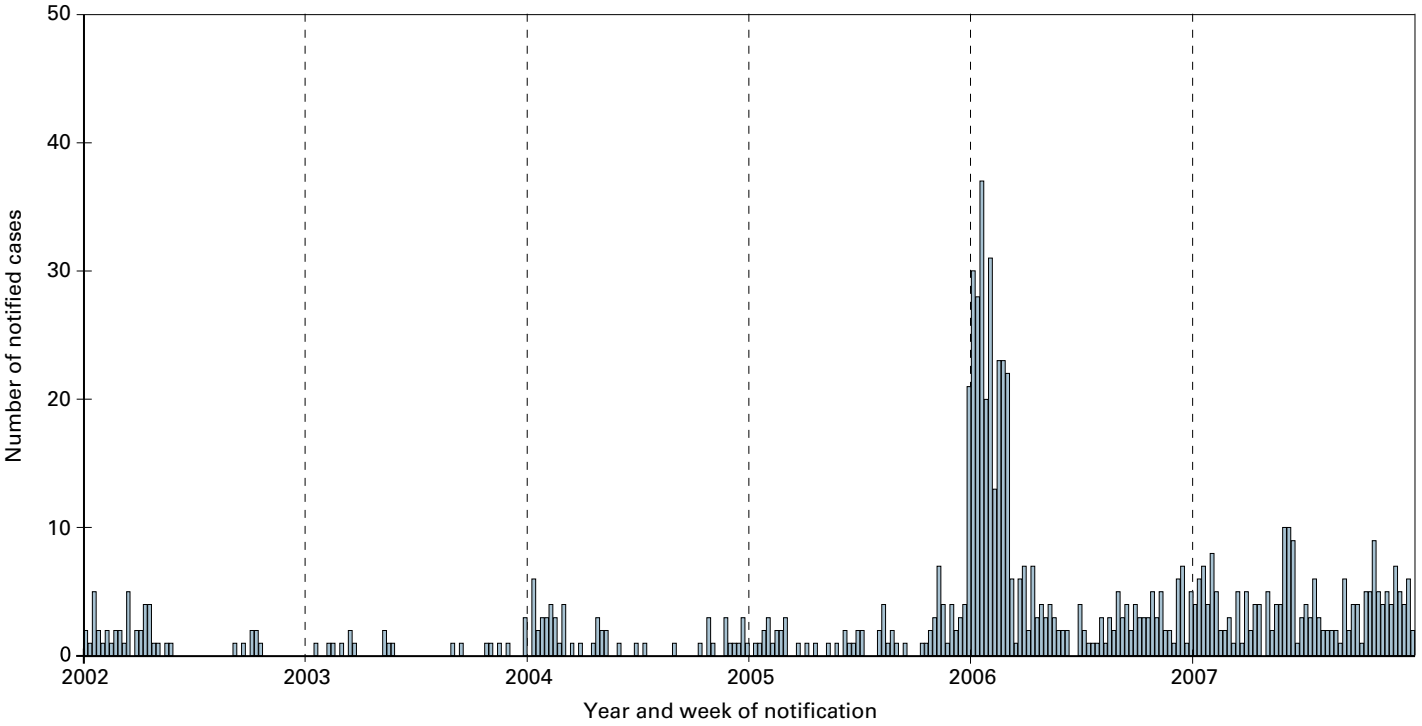


Figure 2: Notified cases of Ross River virus infection, by month of onset 1 January 2002 to 31 December 2007

Malaria

Twenty-four cases of malaria were reported in 2007, fewer than the number of cases reported in 2006 (34) or 2005 (43). Cases comprised 12 male and 12 females, with ages ranging from 2–53 years. All infections were acquired overseas.

Among 17 cases caused by *Plasmodium falciparum*, 12 reported exposure in Africa and four cases were exposed in Papua New Guinea. Of seven cases with Plasmodium vivax infection, three reported recent travel to Papua New Guinea and one case had travelled to India.

ZOONOSES

Brucellosis

One case of brucellosis was reported in the 2007. The case was a 37 year-old male who was exposed through the consumption of several unpasteurised dairy products in a middle eastern country.

Hydatid Disease

Hydatid disease, caused by the larvae of the tapeworm, *Echinococcus granulosus*, is rare in SA. Hydatid cysts, which usually appear in the liver or lungs but can also occur in other viscera, are a result of this infestation; cysts in vital organs can cause severe symptoms. Over the last seven years, an average of five cases per year has been recorded in SA.

Seven cases were reported in 2007, comprising four males and three females aged 11–74 years. In four instances the exposure occurred in an overseas country; in three cases no recent exposure was elicited and the infections may represent past rather than recent infection.

Q fever

Q fever is a zoonotic disease caused by *Coxiella burnetii*, and cases often have exposure to animals, commonly sheep cattle or goats that are natural reservoirs for this infection. Typically, cases are males aged between 15 and 60 years with occupational exposure to animals in the meat and livestock industries, including shearers and farmers (Figure 4). An average of 20 cases per year has been reported for the last 10 years, and 16 cases were recorded in 2006.

Among 24 cases reported in 2007 were 15 males and 9 females aged 7–85 years (Figures 3, 5). In 15 cases, direct exposure to animals was confirmed. A small cluster of community cases was detected mid-year. Within this cluster, four cases were over 70 years and one was aged less than 10 years, atypical for Q fever. The cluster comprised seven cases (three males and four females) linked by residential location. In all cases, the risk factor for acquiring Q fever was not occupational, but proximity of residence to a rural abattoir. Partners in the cluster investigation were local EHOs, Applied Environmental Health Branch and PIRSA.

VACCINE PREVENTABLE DISEASES

Pertussis

Although pertussis vaccine was introduced in 1963 in South Australia, more than 40 years later, *Bordetella pertussis* infection still demonstrates variation in time, appearing as a dramatic increases in disease in spring, roughly every 5 years. Recent data indicate that in SA pertussis occurs most commonly in those 20 years of age and over.

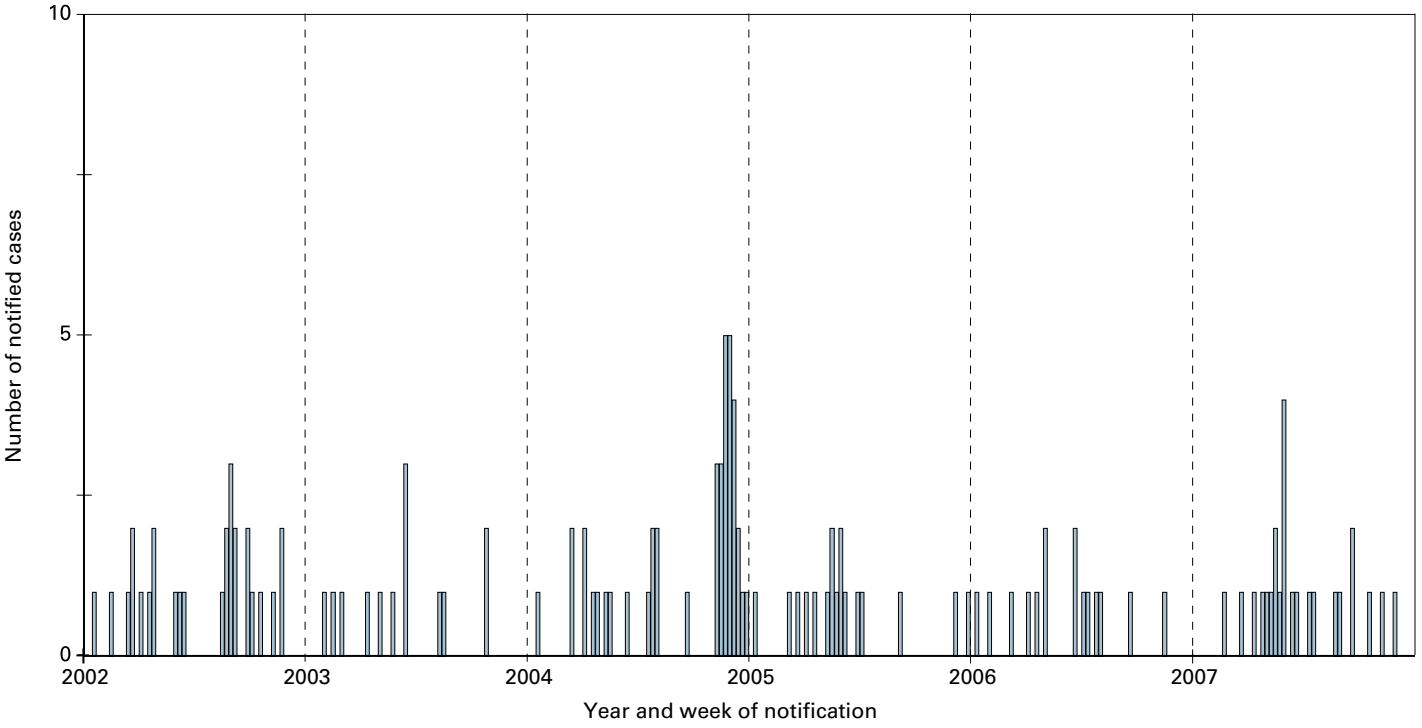


Figure 3: Notified cases of Q fever, by week of onset 1 January 2002 to 31 December 2007

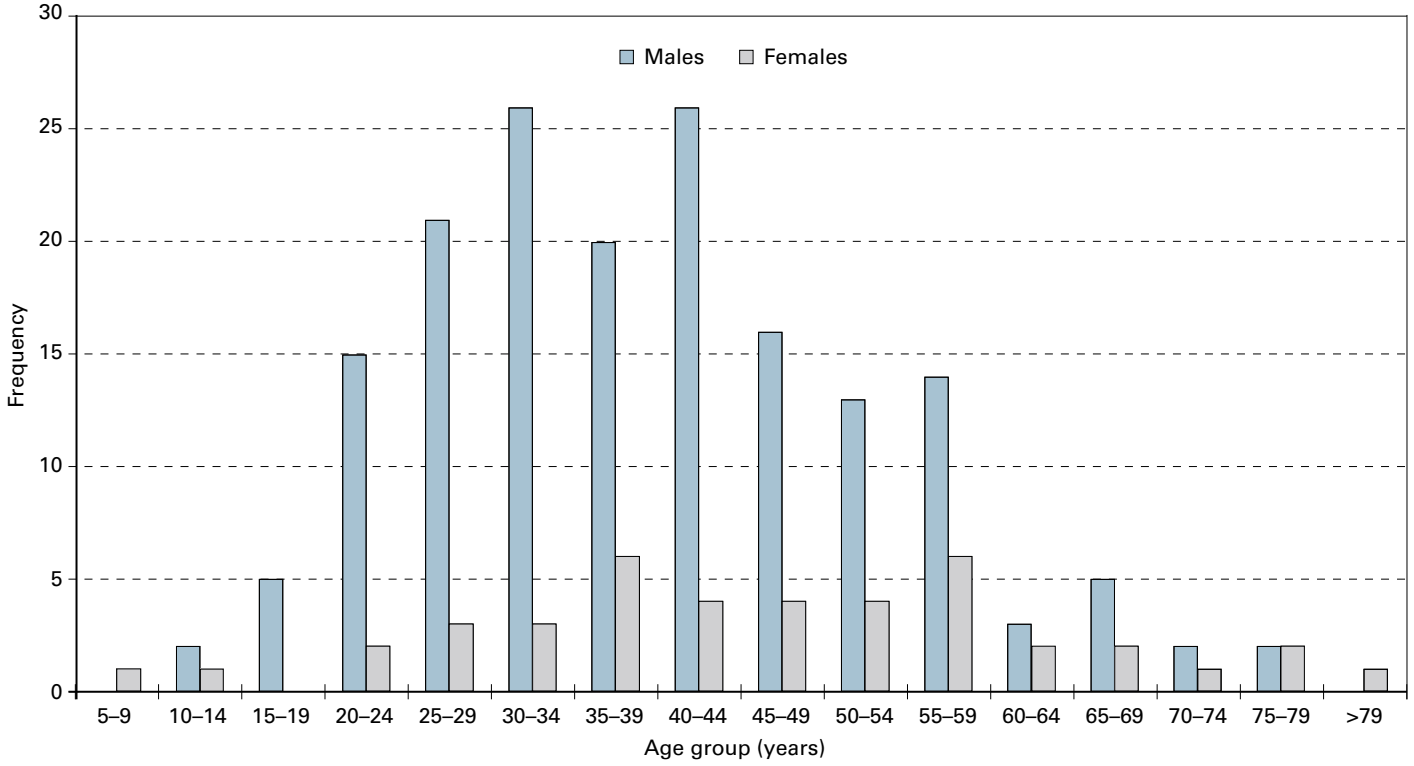


Figure 4. Notified cases of Q fever infection, by age and sex with onset date between 1 Jan 1996 to 30 Dec 2007

Males aged between 15 and 60 years with occupational risks usually dominate Q fever notifications.
In this graph, cases over 70 years of age and <10 years of age represent community infections, five of which were reported during 2007.

An apparent escalation of pertussis cases since 2004, when cases peaked in October, continued until late in 2006 (Figure 6). Some of this increase is now thought to reflect changes in laboratory testing, and some reported cases may have reflected past, rather than current infection.

During 2007, 382 cases of pertussis were notified, compared to 2154 in 2006. Cases comprised 150 males and 232 females with an age range of 1–88 years; mean age 47 years. Cases were geographically dispersed throughout SA. Most cases were more than 20 years of age (88%), and only 24 cases were aged less than 11 years at diagnosis.

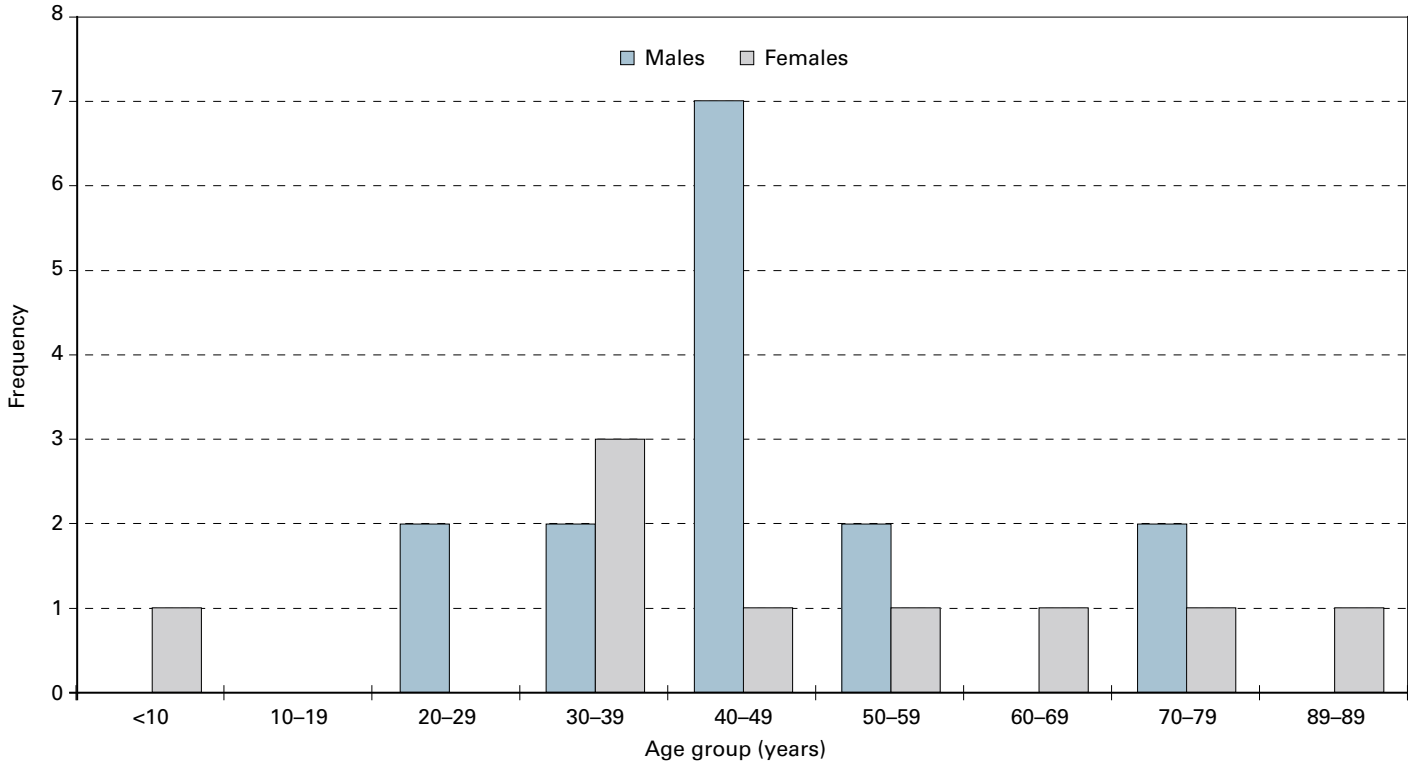


Figure 5. Notified cases of Q fever, by age group and sex, 1 January 2007 to 31 December 2007

In contrast to past years, more than a third of cases were female, and 25% of cases were outside the 15–60 age range.

However, two cases occurred in infants attending child care centres and in these instances information was provided to all children at the child care centres and some children were recommended to seek vaccination.

Figure 6 demonstrates the impact of vaccination diminishing the frequency of cases first in the 5–9, then 10–14 year age groups over time.

Invasive *Haemophilus influenzae*

The introduction of Hib vaccine in 1997 has resulted in a reduction in the number of cases of invasive disease due to *Haemophilus influenzae* type b. However, cases of disease continue to occur in unimmunised or partially immunised children.

Among 18 cases of invasive *Haemophilus influenzae* infection reported in 2007, one was caused by Haemophilus influenzae type b; the case was an Indigenous child aged less than one year and therefore not yet vaccinated.

Cases of *Haemophilus influenzae* infection comprised 14 males and 4 females with an age range of <1–94 years; nine cases were over 60 years and three were less than 5 years. Two cases were reported as Indigenous and Indigenous status was not described in three cases. All except one case were hospitalised because of the disease. As in past years, most isolates were unencapsulated strains (untypeable); as mentioned above, one was type b isolate and another type f.

Mumps

In the years before universal vaccination, mumps was a childhood disease in SA, with peak incidence in the 5–9 year age group. However, many young adults currently aged between 28–42 years, only received a single mumps vaccination in their youth and these individuals are encouraged to seek further vaccination. The increased susceptibility of this group is reflected in cases reported since 2000, when peak rates have been reported in older adolescents and young adults.

Twenty-two cases of mumps were notified during 2007, compared to 20 in 2006. Unusually the cases included a small outbreak in a tertiary institution. Cases comprised 11 males and 11 females with ages ranging from 1–65 years.

A cluster of 8 mumps cases in a tertiary institution occurred among students whose vaccination status was mostly unknown beforehand, many were from overseas. A vaccination clinic was conducted at the institution as part of the control response. Figure 7 demonstrates the cluster of mumps cases in the second half of the year.

Rubella

One case of rubella was reported in 2007, a 35 year-old female from rural SA.

Influenza

The Disease Surveillance and Investigation Section of the CDC Branch collates datasets from both laboratory and clinical sources to describe influenza in SA. Several laboratories report positive tests (IMVS, SouthPath, Women's and Children's Hospital) to the Section.

Clinical diagnoses of 'influenza-like illness' are collected from two sources: Royal College of General Practitioner members participating in the Australian Sentinel Practice Research Network (ASPREN), and emergency departments of several public hospitals. These combined data provide a weekly picture of confirmed influenza infections and influenza-like illness activity across the state.

In the second half of 2007, a marked increase in laboratory detection of influenza infection was recorded between July and October. Among 280 reports for the year, were 149 males and 131 females with an age range from <1–92 years, and a mean age of 15 years. Laboratory reports indicated that 90% of cases were due to influenza A virus. Figure 8 illustrates the difference in diagnoses per week during 2006 and 2007 for laboratory confirmed cases and clinical diagnoses of influenza.

Invasive pneumococcal disease

In 2007, 91 cases of invasive pneumococcal disease were reported in 53 males and 38 females, with an age range from <1–96 years. Twenty cases were residents in rural South Australia, the balance were from metropolitan Adelaide; seven cases were reported in Indigenous Australians. Apart from three cases, all were hospitalised, and six deaths were recorded at notification.

Measles

No cases of measles were reported between 1 January and 31 December 2007.

Varicella

Among 1752 confirmed cases of varicella infection reported during 2007, were 799 males and 953 females whose ages ranged from <1–92 years. Medical notification characterised 725 infections as chicken pox, these cases had an age range of <1–80 years, but 91% of cases were less than 35 years. A further 584 cases were characterised as shingles; these cases ranged in age from 2–100 years; 80% were 30 years of age or more.

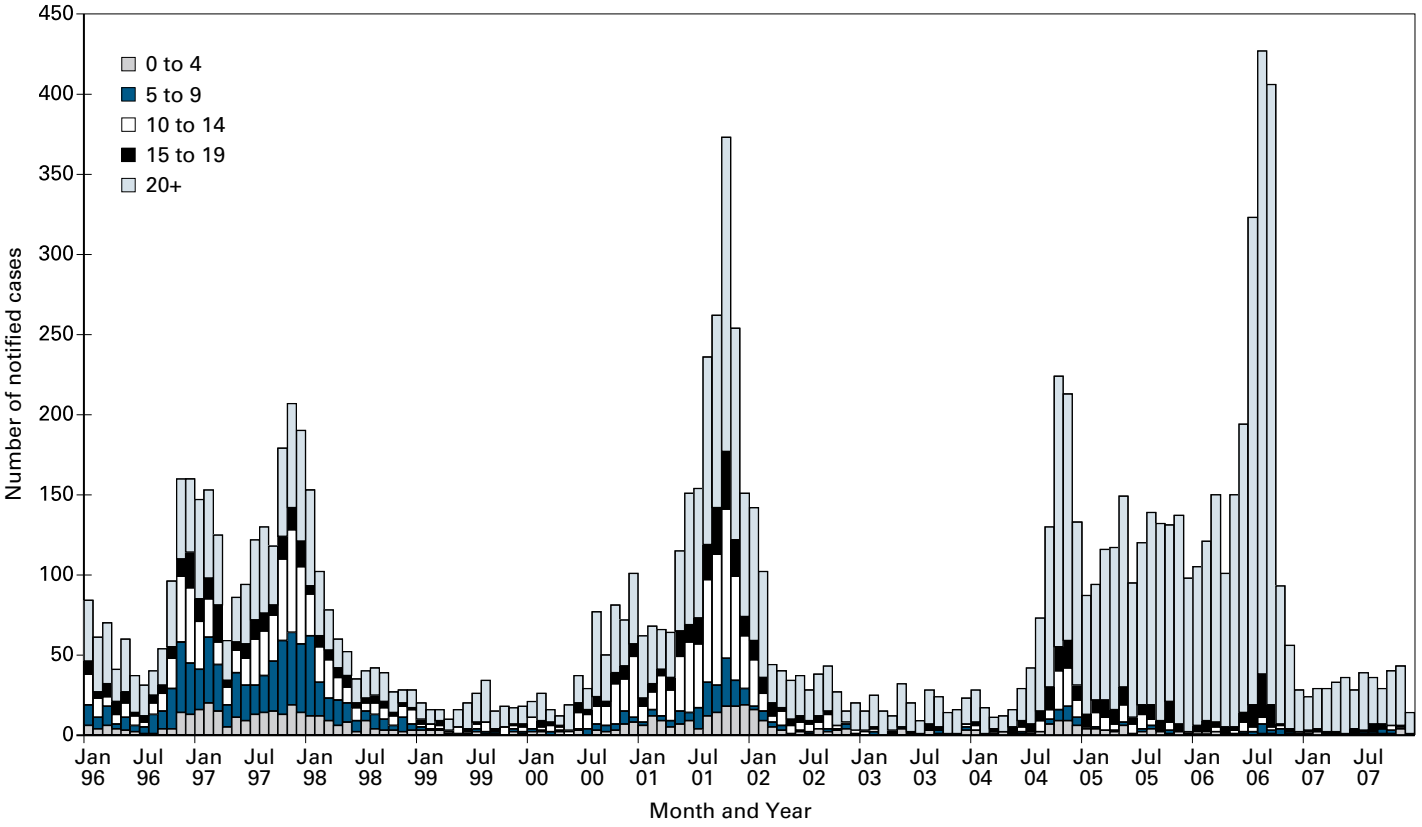


Figure 6: Notified cases of Pertussis infection, by year & month of notification and age group 1 January 1996 to 31 December 2007

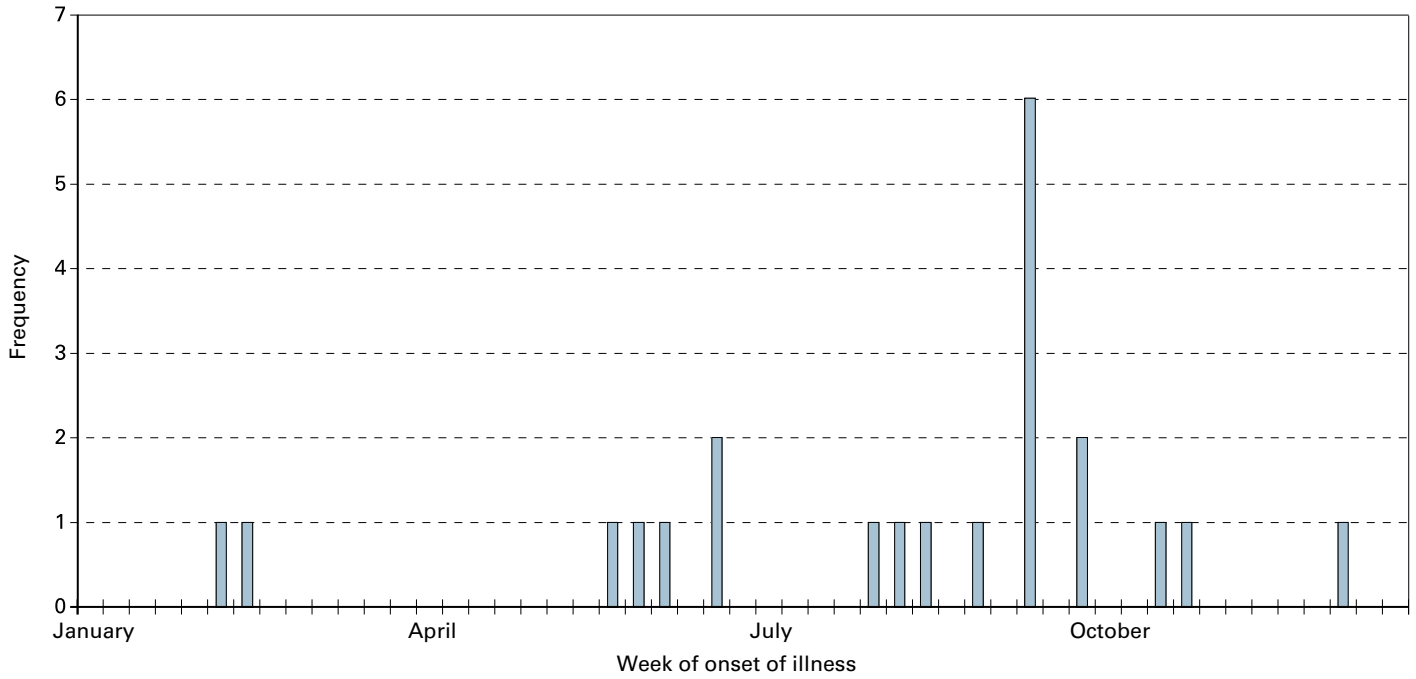


Figure 7: Notified cases of mumps, by date of onset of illness, 1 January 2007 to 31 December 2007

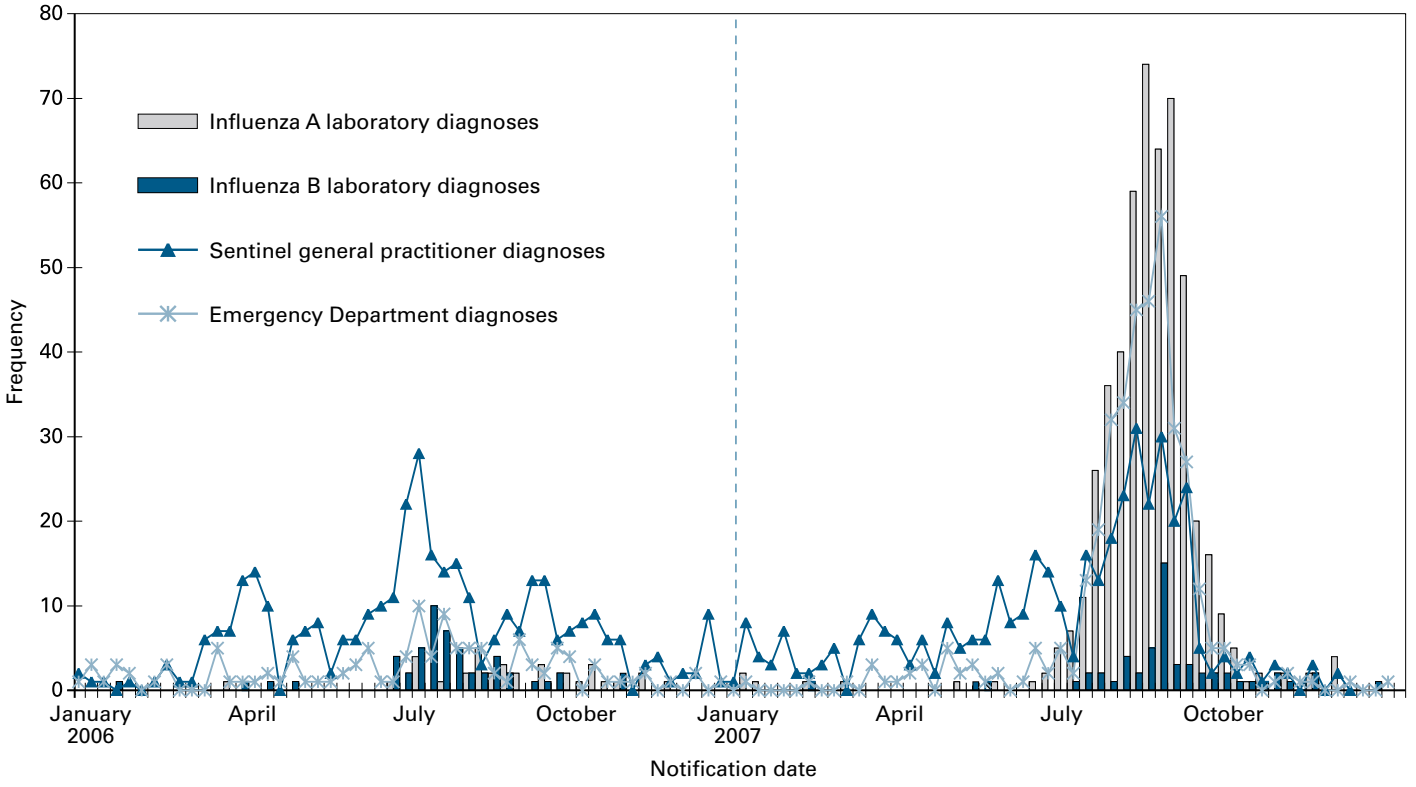


Figure 8: Laboratory and clinical influenza-like illness diagnoses in SA: 1 January 2006 to 31 December 2007

Information about influenza and respiratory diseases is available at: www.health.sa.gov.au/pehs/.

GASTROINTESTINAL DISEASES

As indicated in CDCB weekly web reports, gastrointestinal illnesses dominated disease notification in South Australia in the first half of 2007, when reported cases exceeded the expected seasonal increase in cases. Gastrointestinal illnesses were responsible for 61% of all notifications in 2007. A number of clusters and outbreaks of were investigated during the year, many were outlined in the previous *Bulletin*.

Campylobacteriosis

Campylobacter infection remains the most commonly reported gastrointestinal disease in SA and accounted for 65% of notifiable gastrointestinal illness during the year. In 2007, 2728 notifications were received for cases resident in SA, both metropolitan and rural areas, compared to 2469 cases during 2006. Cases comprised 1478 males and 1250 females, with an age range of <1–94 years; 23% were aged less than 20 years.

Two clusters of Campylobacteriosis were investigated during the year, both occurred in closed communities and EHOs from local government assisted with inspection and control aspects of these investigations.

Cholera

Cholera is an acute diarrhoeal illness caused by some strains of Vibrio cholerae. Transmission occurs through the faecal-oral route by ingestion of contaminated water and food. In its most severe form cholera is extremely virulent, causing acute onset of watery diarrhoea that can lead to death and kidney failure in healthy adults. However, about 75% of people infected with cholera have mild disease or no symptoms.

Two serogroups of *V. cholerae*, O1 and O139, can cause outbreaks and both cause a similar clinical picture; worldwide, *V. cholerae* O1 causes most outbreaks.

To date, *V. cholerae* O139 has only been detected in parts of Asia. Strains of *V. cholerae* other than O1 and O139 cause mild disease but not epidemics.

In the second half of 2007, the only case of cholera for the year was reported in a 38 year-old male recently returned from China. Characterisation of the isolate determined that it was neither *V. cholerae* O1 nor *V. cholerae* O139.

Cryptosporidiosis

Cryptosporidiosis is a parasitic infection of the bowel and Cryptosporidium parasites can be found in a range of animals as well as humans. The infection is spread by the oral–faecal route and commonly occurs by drinking, or swimming in contaminated water. Unlike other gastrointestinal infections, people with cryptosporidiosis must abstain from swimming for 14 days after symptoms disappear.

In early 2007, cases of cryptosporidiosis were reported at greater than expected numbers and enhanced surveillance was initiated in January and ceased at the end of April (Figure 9). All cases were interviewed to reinforce the exclusion period and identify public pools that were possibly contaminated. The Water Quality Section of the Scientific Services Branch, Applied Environmental Health and appropriate local government EHOs were informed of such cases to ensure that nominated pools were treated to kill *Cryptosporidia* and prevent further transmission of infection.

This epidemic of Cryptosporidiosis cases had a distinctive age and sex structure; predominately males aged less than 15 years and females aged 25 to 45 (Figure 10). The second half of the year saw a return to usual numbers, with 23 reported cases, compared to 45 cases in the second half of 2006.

The 459 cases notified during the year comprised 208 males and 250 females, with an age range of <1–87 years. Cases were reported from both metropolitan and rural areas.

Cryptosporidiosis cases with reported risks potentially requiring public health action are referred to local government EHOs, as well as the Water Quality Section of the Scientific Services Branch, Environmental Health.

Hepatitis A

Illness caused by hepatitis A virus ranges from asymptomatic infection (particularly in children) to rare fulminant hepatitis and is unusual in SA. Symptoms include fever, anorexia, abdominal discomfort and jaundice. With an incubation period of 15–50 days, exposure can be difficult to pinpoint. In endemic areas of the world transmission is usually by the faecal-oral route. However, outbreaks due to contaminated food or water have been reported in Australia.

Five cases of hepatitis A infection were reported during 2007; comprising three females and two males; between 8–35 years. Four cases reported recent overseas travel to countries where hepatitis A infection is endemic; one case had occupational risks for exposure to hepatitis A virus.

Listeriosis

Infections caused by *Listeria* bacteria are rare in SA. When these infections do occur, commonly the person also has a chronic illness. Seven cases of *Listeria monocytogenes* infection were notified in 2007, consistent with previous years. Cases comprised three males and four females, all aged more than 65 years (range 67–84 years). Apart from one case, all had underlying chronic illness. Four cases were due to *L. monocytogenes* serotype 1 and three cases were caused by *L. monocytogenes* serotype 4.

Listeriosis cases are interviewed using a targeted food history questionnaire to ascertain the likely cause of infection. No links were found between cases reported in 2007.

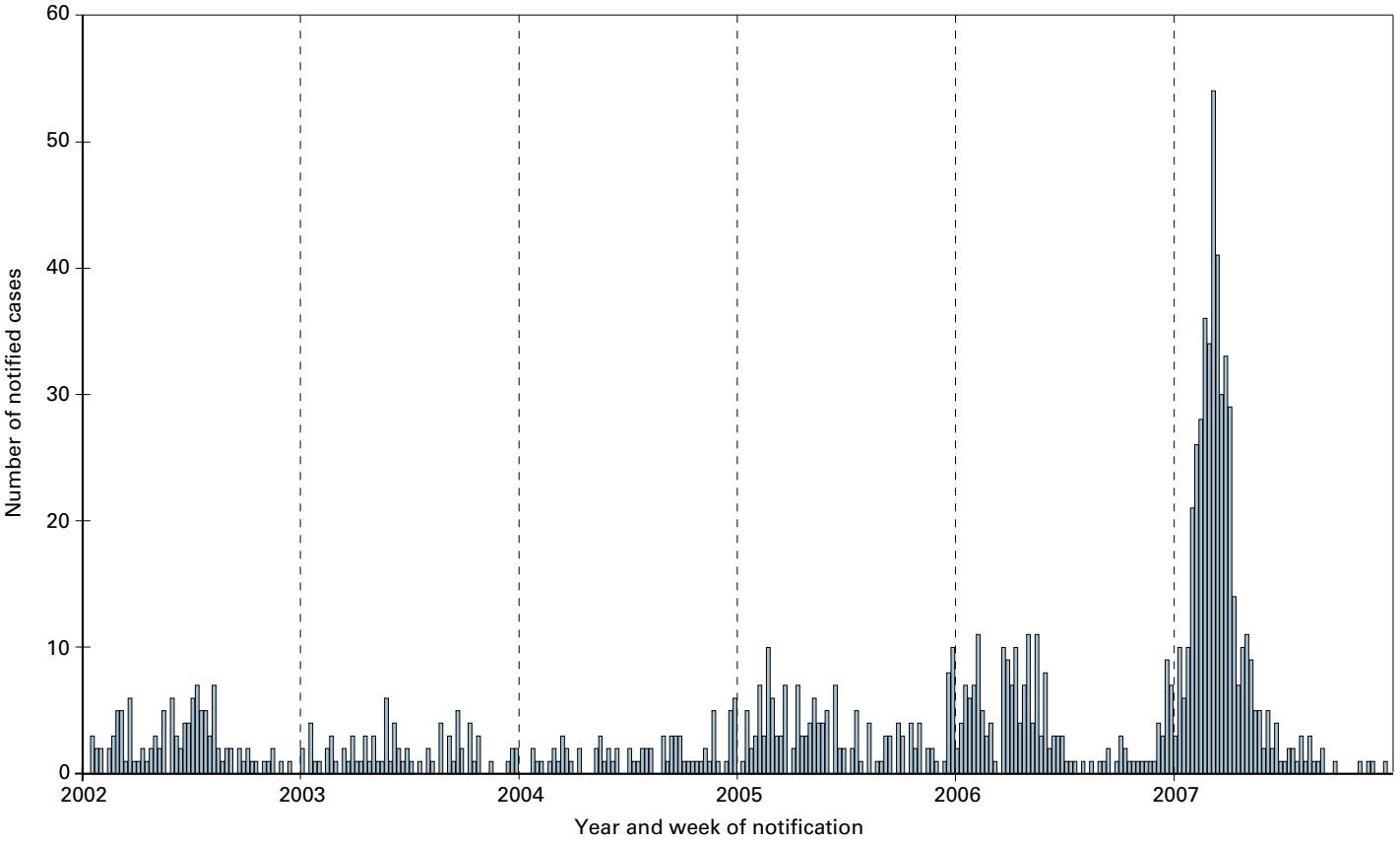


Figure 9. Notified cases of Cryptosporidium infection, by month of onset 1 January 2002 to 31 December 2007

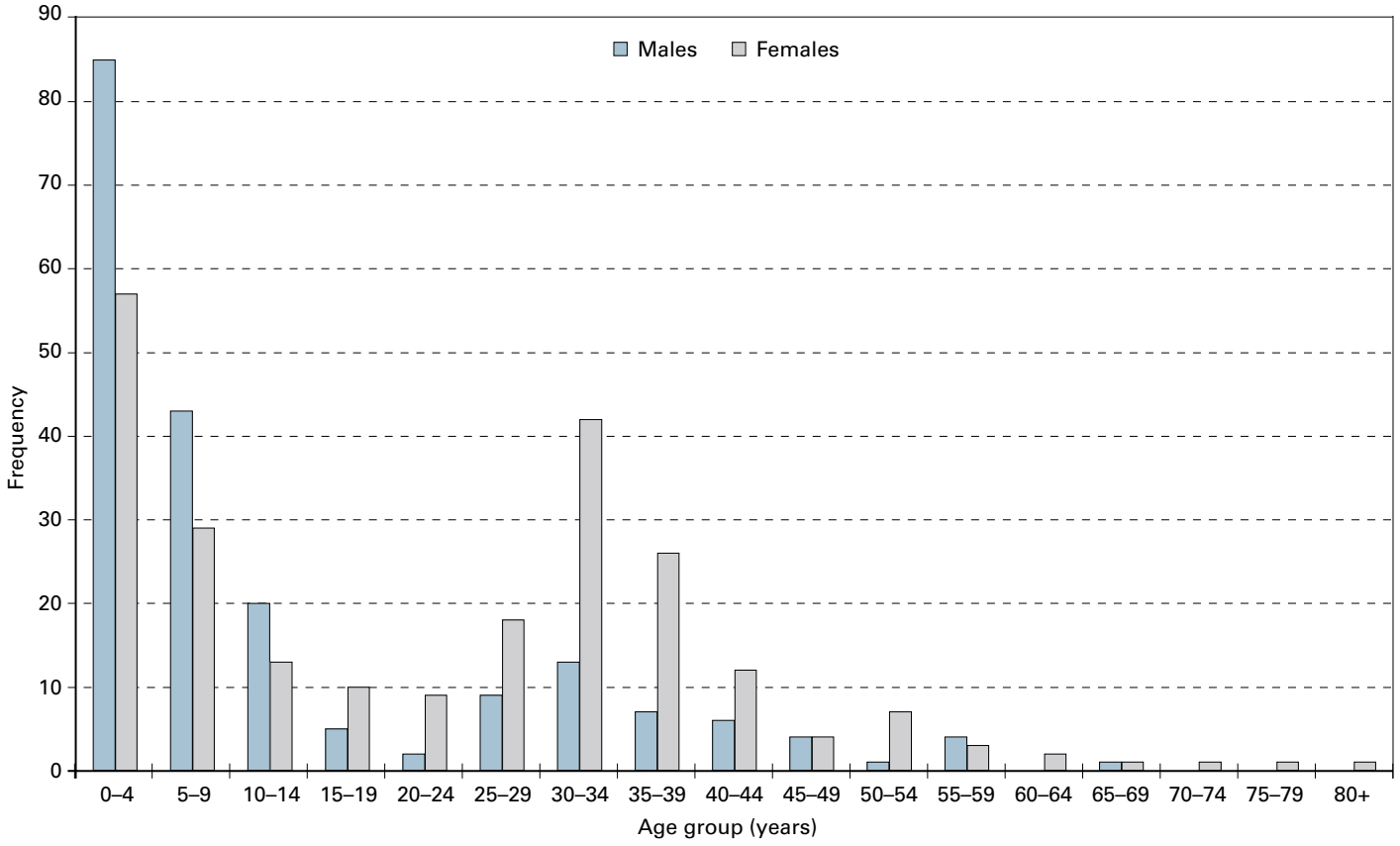


Figure 10: Notified cases of Cryptosporidiosis, by age and sex 1 January 2007 to 30 June 2007

In the first half of 2007, the age range of notified cases of cryptosporidiosis was <1–74 years, but 60% of cases were less than 25 years of age at diagnosis. Figure 10 demonstrates the distinctive age and sex structure of these cases: predominately males under 15 years of age, and females aged 25–45 years.

Shigellosis

Fifty-nine cases of shigellosis were reported in 2007; cases included 28 males and 31 females with an age range from 1–86 years. Among the notification were 27 reports of infection in Indigenous Australians, and 19 of these were due to *Shigella sonnei* biotype a infection.

In contrast to recent years, the most common isolates in 2007 were *Shigella sonnei* biotype a (29 cases) and *Shigella* flexneri 2a (9 cases). Two infections were caused by S. sonnei biotype g or and two by *S. sonnei* biotype e. Eleven infections were due to other *S. flexneri* biotypes; among these were five cases due to *Shigella flexneri* type 4a infection who were reported as Aboriginal. *S. boydii* infections accounted for two cases, and two infections detected in recent migrants were caused by *S. dysenteriae*.

Shiga toxin producing *Escherichia coli* (STEC)

Among the enterohaemorrhagic *Escherichia coli* (EHEC) bacterial strains, are shiga-toxin producing *E. coli* (STEC). Some of these infections cause bloody diarrhoea, and a small proportion of cases progress to shiga toxin-mediated haemolytic uraemic syndrome (HUS). This syndrome can cause severe, chronic disease. In SA laboratory screening of specimens with bloody diarrhoea for genes encoding the STEC toxins enhances prompt notification of these infections.

Early in 2007, a cluster of 12 STEC serotype O157 cases was detected (Figure 11). Most cases were males from metropolitan Adelaide aged 1–81 years. At interview, a comprehensive food history was recorded from each case. This information was immediately referred to the Food Policy and Programs Branch, Environmental Health who conducted inspection, testing and trace-backs on common food items. No environmental source was identified to account for this cluster of cases.

In 2007, 41 cases of STEC infection were notified, compared to 38 cases in 2006. The age range of cases (26 males, 15 females) was <1–87 years. Seventeen cases were admitted to hospital as a result of this infection.

Haemolytic Uraemic Syndrome (HUS)

One case of Haemolytic Uraemic Syndrome (HUS) was reported in the year; a 16 year-old female from metropolitan Adelaide who had no laboratory confirmation of STEC infection.

Salmonellosis

Salmonella infection is usually the second most common notifiable gastrointestinal illness reported in SA and accounted for 21% of these infections. Between January and July 2007, an unusually high number of cases were reported (545), compared to 337 in the first half of 2006. The total number of cases in 2007, 868, exceeded total cases recorded in each of the past five years.

In 2007, cases comprised 425 males and 443 females, with an age range from <1–95 years. In contrast to Campylobacteriosis, 45% of cases were aged less than 20 years. Laboratory tests characterise Salmonella isolates by serotype and phage type.

Salmonella Enteritidis is rarely acquired in SA. Twenty-four cases of S. Enteritidis infection were reported in the period; many reported recent overseas travel including four cases infected with S. Enteritidis phage type 4.

Clusters of infection of various *Salmonella* serotypes reported and investigated in 2007 included S. Infantis (16 cases), S. Adelaide (8 cases), S. Bovismorbificans (7 cases), S. Muenchen (6 cases), S. Oranienburg (5 cases) and S. Anatum (5 cases).

Among cases attributed to infection by the S. Typhimurium serotype, that were further classified by phage type and investigated, were 55 cases of S.Typhimurium phage type 9 infection, 25 cases of S.Typhimurium phage type 29 infection, 22 cases of S.Typhimurium phage type 44 infection, 17 cases of S. Typhimurium phage type 135a infection, 14 cases of S.Typhimurium phage type 108 infection, 9 cases of S. Typhimurium phage type 35 and 7 cases of S.Typhimurium phage type 6var infection.

These investigations were described in the previous Public Health Bulletin. No further outbreaks of *Salmonella* infection were detected in the second half of the year.

Paratyphoid fever

Four cases of paratyphoid fever were notified during 2007; two males and two females aged 5–28 years. Three acquired the infection overseas, but no plausible exposure was determined for the other case and the source of infection remains unknown.

Typhoid fever

Most infections of *Salmonella* Typhi detected in SA are acquired overseas. Untreated enteric fevers, such as typhoid, have significant mortality. Typhoid is transmitted by consumption of food or water contaminated with S. Typhi. Unlike other *Salmonella* infections, up to 10% of those infected can become asymptomatic carriers of the infection.

Five cases of S. Typhi infection were notified in 2007 in three males and two females with an age range of 4–87 years. Four cases were acquired in endemic areas overseas. Contact tracing was undertaken covering the period of infectiousness in Australia; no contacts became infected. In one symptomatic case, contact tracing detected S. Typhi in an asymptomatic household member.

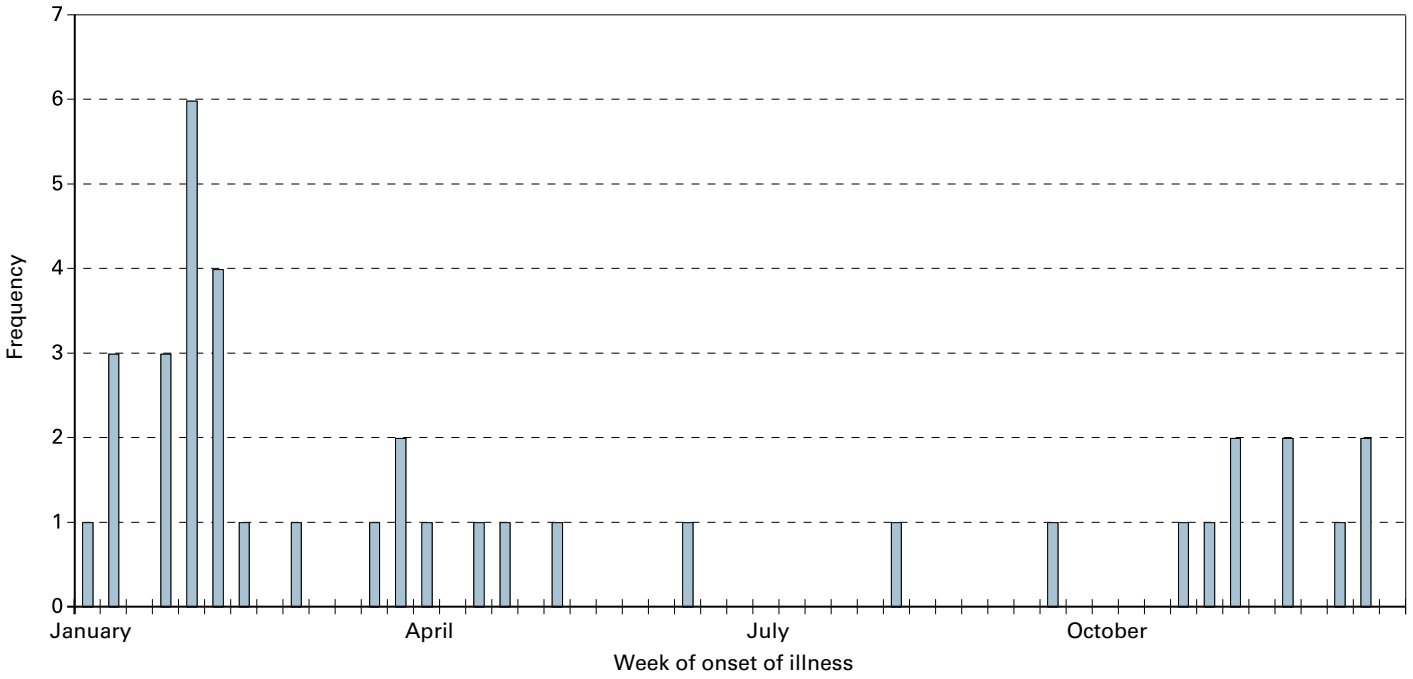


Figure 11: Notified cases of Shiga toxin-producing E. coli infection, by month of onset 1 January 2007 to 31 December 2007

Yersiniosis

Seventeen cases of *Yersinia enterocolitica* infection were notified between January and December 2007 inclusive; one case was co-infected with STEC and two with *Campylobacter*. Cases comprised ten males and seven females, with an age range of <1–61 years. Cases resided in both metropolitan and rural areas.

OTHER DISEASES

Legionellosis

Nineteen sporadic case of Legionellosis were reported during 2007. Laboratory tests attributed 16 cases to *Legionella longbeachae* infection and three to *L. pneumophila* Serogroup 1 infection.

The cases due to *L. pneumophila* Serogroup 1 comprised one male and two females aged 34–82 years. Environmental investigations of each case were conducted by local government EHOs and Applied Environmental Health Branch.

The *L. longbeachae* cases included 10 males and 7 females aged 23–84 years. Cases lived at a variety of metropolitan and rural locations in SA. Six cases had underlying chronic respiratory illnesses.

Invasive meningococcal disease

In Australia, past notifications of invasive meningococcal disease caused by *Neisseria meningitidis* included a proportion of cases attributed to *N. meningitidis* serogroup C infection that were associated with severe disease. The national meningococcal C vaccination programme provides free vaccine to children and adolescents in the high risk age-groups of 0–4 and 15–24 years. This bimodal age distribution of cases is true of SA. The predominant serogroup of *N. meningitidis* responsible for disease remains serogroup B, for which no vaccine is available.

Seventeen cases of meningococcal disease were reported in 2007 in eight males and nine females. Cases ranged in age from <1–83 years. However, most cases were in the age-groups above, with five cases aged less than 5 years and seven cases aged between 16–23 years. Among the latter was a cluster of four cases that occurred in a one week period in rural South Australia. These cases were linked through school. Extensive contact tracing was undertaken and chemoprophylaxis provided for household, school and sporting contacts.

In 12 instances the infection was found to be due to *N. meningitidis* serogroup B. One case was due to *N. meningitidis* serogroup C infection, the first such case since 2005, and one infection was caused by *N. meningitidis* serogroup Y. In three cases, the agent was not isolated.

These data are provisional and subject to further revision.

Notifiable diseases in South Australia: 1 January to 31 December 2007, and annual comparisons 2002–2006

	2002		2003		2004		2005		2006		2007	
	Jan-Jun	Total	Jan-Jun	Total	Jan-Jun	Total	Jan-Jun	Total	Jan-Jun	Total	Jan-Jun	Total
Anthrax	0	0	0	0	0	0	0	0	0	0	0	0
Barmah Forest Virus infection	4	4	1	1	2	6	12	27	138	188	32	60
Botulism	0	0	0	0	0	0	0	0	0	0	0	1
Brucellosis	0	0	0	0	0	0	0	0	0	0	0	1
Campylobacter infection	1119	2491	1527	2630	876	1950	863	2089	900	2469	1595	2728
Chlamydia trachomatis[1]	943	1806	1028	1993	1255	2428	1405	2706	1635	3127	1879	3386
Cholera	1	3	0	2	0	0	1	2	0	0	0	1
Creutzfeldt-Jakob disease	0	0	0	0	1	1	0	0	0	0	2	2
Crimean-Congo Haemorrhagic Fever	0	0	0	0	0	0	0	0	0	0	0	0
Cryptosporidiosis	66	118	47	81	28	76	99	160	146	191	436	459
Dengue Fever	4	8	6	10	3	4	2	5	7	10	8	23
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0
Donovanosis[1]	0	0	0	0	0	0	0	0	0	0	0	0
Ebola Fever	0	0	0	0	0	0	0	0	0	0	0	0
Gonorrhoea[1]	107	209	181	297	209	371	240	401	333	503	299	455
Haemophilus influenzae	4	9	5	11	8	17	5	13	2	8	6	18
Hepatitis A infection	8	16	7	13	7	12	2	9	7	9	3	5
Hepatitis B[1]	139	271	130	242	148	335	148	335	168	316	250	504
Hepatitis C[1]	468	887	437	889	447	818	402	786	372	772	351	716
HIV[1]	16	32	16	45	26	55	30	50	30	61	34	53
Hydatid Disease	6	7	3	8	2	5	0	2	1	2	5	7
Influenza (laboratory confirmed)	138	284	20	309	25	72	58	273	11	87	16	280
Lassa Fever	0	0	0	0	0	0	0	0	0	0	0	0
Legionellosis	28	68	20	63	9	21	13	27	15	28	3	19
Leprosy	0	0	0	0	0	0	0	0	0	1	1	2
Leptospirosis	1	2	0	2	0	1	1	3	0	1	0	0
Listeria infection	0	2	1	1	1	3	1	6	1	4	1	7
Lyssavirus	0	0	0	0	0	0	0	0	0	0	0	0
Malaria	13	19	13	27	9	20	24	43	14	34	13	24
Marburg Disease	0	0	0	0	0	0	0	0	0	0	0	0
Measles	0	1	4	25	2	6	0	0	9	9	0	0
Meningococcal infection	16	31	9	31	9	13	5	23	9	18	4	17
Mumps	4	10	5	12	1	3	3	8	5	20	7	22
Non-Tuberculous Mycobacterial Disease[2]	21	49	20	48	29	68	27	69	23	53	27	66
Ornithosis	3	4	0	1	3	5	0	0	0	0	0	3
Paratyphoid Fever	2	3	1	1	4	6	4	6	4	4	1	4
Pertussis	395	563	118	232	110	909	654	1409	820	2154	178	382
Plague	0	0	0	0	0	0	0	0	0	0	0	0
Pneumococcal infection (invasive)	101	207	71	167	101	199	59	134	40	104	38	91
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0
Q Fever	10	29	9	12	10	36	14	20	9	16	11	24
Ross River Virus infection	40	47	11	20	38	55	28	94	283	365	111	214
Rubella	2	5	1	1	0	2	0	0	1	2	1	1
Salmonella infection	290	507	259	434	294	525	284	586	337	556	545	868
Severe Acute Respiratory Syndrome	0	0	0	0	0	0	0	0	0	0	0	0
Shigella infection	22	25	12	27	36	46	16	41	11	28	16	59
Smallpox	0	0	0	0	0	0	0	0	0	0	0	0
STEC / HUS /TTP	20	38	26	41	10	33	25	38	21	38	30	42
Suspected Food Poisoning	2	4	1	20	19	74	18	66	326	513	37	106
Syphilis[1]	25	33	12	21	8	14	5	13	25	42	28	49
Tetanus	0	0	0	0	1	2	0	0	0	0	0	0
Tuberculosis[2]	18	47	21	47	28	60	23	46	25	71	18	59
Typhoid Fever (S typhi)	1	3	1	2	2	3	1	2	1	2	4	5
Varicella virus	605	1134	445	1226	823	1573	625	1695	728	1673	847	1752
Yellow Fever	0	0	0	0	0	0	0	0	0	0	0	0
Yersinia infection	4	12	5	18	1	6	5	7	7	11	5	17

[1] Data collected by Sexually Transmitted Diseases Services

[2] Data collected by SA Tuberculosis Services

The *Public Health Bulletin South Australia* is a publication of the South Australian Department of Health. The Bulletin aims to provide current data and information to practitioners and policy makers emphasising the value of orienting services towards prevention, promotion and early intervention and to support effective public health interventions.

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The Managing Editor
Public Health Bulletin
Department of Health
PO Box 287, Rundle Mall
Adelaide 5000
Fax (08) 8226 6515
Email phbsa@health.sa.gov.au

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