

Public Health Bulletin SA Prevention

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Editorial

Kevin Buckett

Director, Public Health
SA Health

The prevention of ill health is perhaps higher on the wider political agenda in Australia than ever before. While this is not to say too much, as prevention is only ever awarded a lowly seat at the table, we do probably have opportunities that we have not had previously to push prevention of ill health more to the forefront. The escalating burden of chronic and potentially preventable disease, and the increased demand on health care by an ageing population, have resulted in ever more rapidly increasing health care costs. All these contributing factors make a radical rethinking of priorities for the health agenda imperative. We are at a watershed moment in the health sector where we need to act now.

At the national level the federal government has made an explicit commitment to a prevention agenda, with the Health Minister Nicola Roxon stating that she wants to shift prevention to the centre of health care. The first step was the establishment of the Preventative Health Taskforce with a mandate to provide evidence-based advice to governments and health providers on preventive health programs and strategies. The taskforce has recommended setting up a Preventive Health Agency to provide the infrastructure for coordination of the preventive effort as well as leadership for implementation of the Preventative Health Strategy.

At the state level here in South Australia, SA Health is in the process of developing a Primary Prevention Plan, which Michele Herriot presents in this issue of the *Bulletin*. The plan will guide the development and implementation of policies, plans and programs to support all South Australians, especially those most in need, to be healthy.

In this climate we thought it was timely that the issue of prevention and health be aired in the *Bulletin*. As a way of encouraging debate and dialogue, we decided, rather than having only proffered papers in this issue, we would try to make the discussion more 'immediate' to *Bulletin* readers by bringing a group of key thinkers together around the table and recording their conversations. We were very fortunate that two members of



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the national Preventative Health Taskforce, Prof Mike Daube, the Deputy Chair, and Prof Paul Zimmet, were willing to spearhead this debate. They were joined by two members of the academy here in South Australia, Prof Robyn McDermott from the University of South Australia and Prof Konrad Jamrozik from Adelaide University, as well as by SA Health staff.

Participants in the debate were asked to consider whether we could and should move the debate on prevention away from risk factors and individual behaviours, and think more broadly. There was complete agreement among the members of the group. They agreed that, while risk factors, the causes of ill health, were of course important, any approach to prevention must also consider the broader determinants of health—the causes of the causes. As well as looking at risk factors and determinants, the debate also considered the following: the drivers of preventive action in health; leadership of the preventive effort; opportunities for and funding of prevention; and the vexed question of universal or targeted interventions—should interventions be with those most at risk or with the whole population. Konrad Jamrozik made a very salient point using the prevention of deaths on the road as an example. His point was that a decrease in the road toll comes, not by ending Formula One racing, but by intervening to change the behaviour of the majority of drivers. Jamrozik also discussed this issue in the previous issue of the *Bulletin* in relation to the prevention of heart disease and stroke.¹

Following the debate, two of the participants agreed to reflect further on the issues raised. Robyn McDermott discusses why primary prevention of chronic disease is (mostly) better than clinical prevention and Stephen Christley discusses prevention from an SA Health perspective.

Four further papers continue this focus on prevention. Fran Baum very elegantly tackles the terminology of prevention, making it clear that this is not simply a matter of semantics but of real meaning. Terms like 'preventive health' and 'preventative health', in Baum's view, imply hindering or stopping health, rather than a health promoting approach to creating healthy populations. Baum says that this latter approach was taken by the Commission on the Social Determinants of Health, on which she was a Commissioner, and that in Australia we would benefit from focusing more on what creates health rather than simply on what

prevents ill health. She goes further to propose an agenda for Australia that builds on the commission's report, taking a positive focus.

Stephen Leeder's article on the politics of prevention is very thought provoking. Prevention is political and it is up to us to use this knowledge to assist our cause in the pursuit of prevention. As Leeder sees it, at the last election, for the first time in Australia's history, prevention—in this case, of climate change—influenced the outcome of an election. Leeder's point is that we should keep in mind our successes and learn from them.

Mark Jacobs provides an overview of prevention in New Zealand, pointing out the similarities and differences between Australia and New Zealand. He observes that the similarities are most obvious in the strategies and programs targeted to specific diseases or risk factors. The fundamental difference that Jacobs points to is the fact that New Zealand has a formal treaty relationship between Maori and the Crown. The most obvious implication of this for public health and prevention is that reducing health inequities between Maori and non-Maori has a long history of being taken very seriously.

Leonie Segal's paper is on the place of prevention in the health care system from an economic perspective. She argues that an uncritical reliance on simplistic rhetoric such as 'prevention is better/cheaper than treatment' should not take the place of an evidence-based approach to health funding, and that health economics can provide the analytical framework for exploring this issue.

The aim of this issue of the *Bulletin* is to raise awareness of the topic of prevention, and to open it up for debate and discussion—and, of course, as a catalyst for action. Hopefully, we have succeeded, at least in part, as action is imperative.

Reference

1. Jamrozik K. Risk factors—the evolution continues. *Public Health Bulletin SA*, vol 5, no 3, November 2008.

Debate: Prevention on a broader canvas: is moving beyond risk factors necessary, desirable or possible?

Introduction

The Public Health Bulletin editorial team felt it was timely, in light of current agendas giving higher prominence to preventive health, to use the Bulletin as a forum to debate and discuss the topic. We brought together a group of key thinkers—from the national Preventative Health Taskforce, the academy in South Australia and SA Health—to discuss the issue. As a discussion starter, we introduced the topic ‘Prevention on a broader canvas: is moving beyond risk factors necessary, desirable or possible?’ Spoken comments by participants are recorded below in italics.

The debate participants were:

Mike Daube

Professor Health Policy, Curtin University
Deputy Chair, National Preventative Health Taskforce

Paul Zimmet

Director Emeritus and Director International Research, Baker IDI Heart and Diabetes Institute, and Honorary Professor, Monash University
Member, National Preventative Health Taskforce

Robyn McDermott

Pro Vice Chancellor and Vice President, Division of Health Sciences
University of South Australia

Konrad Jamrozik

Professor and Head, School of Population Health and Clinical Practice
The University of Adelaide

Stephen Christley

Executive Director, Public Health and Clinical Coordination, SA Health

Kevin Buckett

Director, Public Health, SA Health

Michele Herriot

Director, Health Promotion Branch, SA Health

Facilitator: Tom Stubbs

Managing Director, Executive Advisory Services

Risk factors or determinants?

To open the debate, **TOM STUBBS** invited participants to discuss prevention on a broad canvas. He first asked the participants for their thoughts on whether or not we could, should or must move beyond considering risk factors in our approach to prevention. There was general agreement that prevention is about dealing with risk factors, that is the causes of disease; but, equally importantly, it is about dealing with the causes of the causes, that is the determinants of health and illness—be they economic, social or environmental in origin.

ROBYN McDERMOTT:

Social determinants are all around us and they account for a great deal of the difference in relative health risk. But, in the case of obesity, for instance, it's the absolute risk that is increasing for everybody, so certainly we have to look at both risk factors and determinants.

This topic has come up in a few venues where it almost turns into a debate between the risk factor people and the social determinants people. I think that is a big mistake because probably the correct answer to moving beyond risk factors is that it actually depends on the condition you are dealing with. If you just adopt a broader social determinant framework, you'll probably still miss out on some of the best bangs for your bucks. Tobacco control is a good example. Legislation played such a huge part in getting us to where we are now, but we are now left with this residual widening gap between social groups, with smoking rates being much higher in lower socioeconomic groups. We need to get more sophisticated in our understanding of the connection between determinants and risk factors.

MICHELE HERRIOT's view was that, of course, determinants were important, but risk factors have always, and need to continue to be, considered in our approach to prevention:

In my role in providing policy advice to government, and in funding and supporting health promotion programs, risk factors are my (healthy wholemeal!) bread and butter. I'm still doing this job (as Director of Health Promotion Branch) because I think risk factors are important. We have seen the results of a focus on risk factors in terms of successful programs and strategies around, for example, unsafe sex, drink driving and unsafe drinking water. We have an obligation to make a difference and so I think it is important to be serious about risk factors. Inherent in the discussion of risk factors or determinants is the question: is it the

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causes, or the causes of the causes? And my comment is the same as Robyn's, that the dichotomy is very unhelpful and divisive. I think what is important is a comprehensive approach that involves a range of strategies at a number of different levels.

KONRAD JAMROZIK, as an epidemiologist, had a specific slant on the issue, stressing the need for a universalist approach with strong leadership:

As an epidemiologist I approach the issue with a definition of epidemiology, which is about the study of health and health-related events, and about applying the findings of these studies to improving the health of the public. But it is particularly the second part of that definition that interests me here as, in my view, it confers, upon epidemiologists at least, not a licence but a responsibility to lead change.

Now when you couple that with the observation that epidemiology is the core science of public health, and public health is about the organised efforts of society to protect, promote and improve the health of its members, then very quickly you come to a universalist approach. The outstanding successes in public health, and indeed in a broader enlightened society, are all about the strength of leadership to carry through universal approaches.

MIKE DAUBE, as the Deputy Chair of the National Preventative Health Taskforce, brings to the debate more than 30 years' experience of working on tobacco control. The taskforce, as a first step, is tackling three risk factors—obesity, tobacco control and the harmful use of alcohol:

In response to the debate topic, there is no prevention on a broader canvas. Prevention is a pimple on the periphery of health. Less than 2% of health funding goes to public health. Prevention practitioners are an endangered species and will be even more so as Treasury comes harvesting in these hard economic times. And those that do paint on the broader canvas either don't care about prevention or directly oppose our work—whether it is increasing inequity, or ignoring climate change, promoting alcohol and tobacco, and so on.

That said, I don't think prevention practitioners have ever focused solely on risk factors—from sanitary health campaigns of the 19th century to our national Preventative Health Taskforce.

Advocates for prevention are few enough. We have active and passive opposition pretty well wherever we look, so we can't afford the distraction of arguments over philosophies. Prevention is about equity and action on social determinants; it is about educating our colleagues in the health system and elsewhere about paying more than lip service to prevention; it is about opposing anti-health interests; and, of course, it is, and has to be, about acting on risk factors.

Take tobacco control. We have been very successful despite opposition and despite the people who, for years, argued that nothing could be done because there was no precedent. And lately, of course, there has been a similar argument about obesity. We have moved through that stage and, worldwide, our work on tobacco control is now preventing millions of deaths. It is also one of the things we know will do more than anything else to reduce the life expectancy gap and to reduce health inequity. We know exactly what needs to be done in tobacco control so we need to continue. We also need to apply the lessons learnt in tobacco to other areas—obesity, alcohol, STDs and so on. It would be crazy to back off on working on these risk factors, just as it would be crazy to back off on concerns about global and local action on social determinants.

This view was echoed by **PAUL ZIMMET**, who is also a member of the Preventative Health Taskforce and who brings to the debate a world-recognised expertise on diabetes:

I am very much a promoter of a more global approach to prevention. Take the issue of obesity. One group, you could call them 'the food Taliban', are pushing for bans on junk food advertising to kids, attacking the fast food industry and such like, and they think that this approach will fix up the obesity problem. I think that, while this is important, we need a much more global approach—for instance better urban planning. Poor footpaths, inability for people to exercise, perceived danger for people walking at night and getting mugged—all of these issues need to be taken into consideration in the obesity prevention situation.

STEPHEN CHRISTLEY reflected that there are those who have the wherewithal to deal with risk factors on a personal basis, whether it be in approaching a GP for advice on risk factor modification or organising their life to, for instance, include more incidental exercise, such as walking to work. But this is not a population level response:

Unless we make it easier for people to make healthier choices, we are going to fail in the prevention agenda. I personally can make healthier choices, having the social wherewithal to do it, but the challenge for governments in looking at the prevention agenda is to make healthier choices easier for all. So, while it is not a black or white, or one side or the other, issue, unless we address how people interact with their environment and what the incentives are within a society for healthy behaviours, that is, unless we pick up on some of the determinant factors, I don't think we will get far.

KEVIN BUCKETT, having the last word in the discussion of risk factors or determinants, raised an issue touched on by others but not developed—that the determinants lie largely outside the remit of the health system:

There are causes of the causes, and they are the social determinants. Dealing with those determinants will place our society in a much better position, where the causes of disease can be managed and reduced, and we will actually improve health outcomes.

Mike said we know what needs to be done, and to a large extent I think we do, particularly in the case of risk factors and interventions around those risk factors. But I don't think we know what to do to get it done, particularly with the social determinants. The Preventative Health Taskforce has raised the issue of the importance of the determinants of health and where these issues need to be tackled, specifically on obesity, alcohol and smoking. These are obviously the first things that have to be tackled as they are probably the major risk factors.

It is a very good approach but I still don't think we know what we need to do to tackle the determinants of health properly. They don't reside within the health sector's control. We don't own those issues, things like the environment, culture, the economy, education and so on. They are outside the health sector's remit. In the past our approach has generally been an advocacy role, and we have wagged our fingers and told those people in other areas—education, urban development and transport, and so on—what they need to do. But health is not the business of these agencies and they don't necessarily care too much about it. The issue we have to deal with is how we make health the business of those sectors that can really materially influence the determinants.

Drivers for preventive action

A discussion on the drivers for the prevention agenda ensued. The focus was firstly at the level of individuals—what it would take to drive the individual to change their own behaviour; and then it moved to a more global perspective—identifying the drivers for prevention at the political and societal levels, and how can they be triggered.

ROBYN McDERMOTT:

We are all focused on the issues around obesity... and I think it would be of interest to bring together issues concerning obesity and global warming. From a public health and epidemiology perspective, it would be interesting to look at the carbon footprint of obesity in individuals and society, and to model that along with interventions around what would be the best bangs for your bucks on a population level of reducing obesity and reducing our carbon footprint.

MIKE DAUBE brought the conversation back to the drivers for tobacco control, for which there was no perceived cost incentive at the time that prevention action began:

The drivers for action for tobacco control were epidemiologists and physicians, and they went through two phases. First, there was the naïve phase, where they said somebody should do something, but let's wait, and there were some transitional programs. Then they got hard and tough and that's when they started passing the industry scream test, where you knew things were working or could work because the tobacco industry was screaming. That's when things started to happen. We had a comprehensive approach—we got hard and tough, and went for legislation, with big money on public education. So I think there is a terrific lesson to be learnt there, particularly about the drivers for action.

We need the campaigners to be the epidemiologists, physicians and others. Whether on social determinants or risk factors, the crucial thing is not to just hang about and wait. I have seen so many people who have said to wait 10 years while we trial this, and then wait 10 years for that. If we do that, nothing will happen with obesity or alcohol, and we'll start going backwards on tobacco.

Now the focus of the debate moved more to identification of global drivers.

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PAUL ZIMMET raised this issue right at the outset. His point was that if we understand what the drivers of prevention are, we can tap into these agendas and make them ours:

I think in this debate it would be good to talk about the drivers that will actually activate the preventive agenda. It is interesting to me that the main drive in the obesity area has come from Treasury and not the federal health department. And the driver for this was the perceived negative impact on workforce productivity through premature disability as a result of an obese population.

ROBYN McDERMOTT:

I think it is really significant that the driver for obesity has been Treasury and that the driver for tobacco control was not. We have managed to do really well with tobacco control but we have only just started on the obesity question. What is really missing is proper economic analysis of the issue.

STEPHEN CHRISTLEY took up this issue of the cost drivers for prevention:

*It's not surprising that issues around preventive health such as obesity are on the political agenda now, because there has been a cost driver that's put them there. But what I fear is that they're also there because, on a superficial level, particularly looking at obesity as an example, these issues look easier for governments to fix than some of the other causes of health cost blowouts. For instance, in dealing with change in the acute health system, we have to look at the architecture of the delivery system. That means challenging community perceptions of hospitals, models of care and so on, and that means professional interests come into play and there is a need for a robust debate around the issue. My point is that to **really** tackle the societal determinants of obesity will be just as difficult.*

MICHELE HERRIOT, while acknowledging that Treasury was a driver in placing obesity on the political agenda, agreed with Stephen Christley about the depth of understanding of the issue:

At the state level I'm not sure that Treasury yet understands primary prevention as opposed to working with individuals and their risk factors in quite the same way. I think we have a little more work to do to educate them that investing in prevention is not a quick fix, and it will not result in dividends in terms of reduced bed days in hospitals for quite a long time.

KEVIN BUCKETT stressed the economic imperatives and the influence this has had on Treasury to motivate real action on prevention:

I think it is the economic argument that has brought Treasury along. Health budgets and hospital costs are increasing at a far higher rate than state revenue. In South Australia, for instance, within 10 years the health department will need 50% of state revenue. This seriously inhibits other areas of government with their own agendas. I think that is a really strong argument. It is in other sectors' own self-interest to actually do something about prevention where they can, so that the health budget blowouts are reduced or to some extent contained.

MIKE DAUBE took up this issue but disagreed to some extent:

I want to disagree on one observation. I think it is wrong to say that the push on obesity emanates from Treasury. Treasury is concerned about it because people like Paul and others have been banging on about obesity for a long time. You may not feel you are getting anywhere, but if you keep banging on hard enough and with enough scientific evidence, standing and eminence, change can happen.

Leadership

One of the issues running through the debate was the topic of leadership—the fact that strong, committed leadership was vital to getting results, and that some of the issues we are facing now are the result of a failure of leadership.

KEVIN BUCKETT suggested that, on the one hand, we are encouraging people to increase their incidental exercise. On the other hand, local government, who have a major responsibility for the built environment, does not necessarily understand that their actions (for example, in not providing adequate paving, parks, street lighting and so on) may act counter to this.

KONRAD JAMROZIK responded:

That is a failure of leadership. We have been through a kind of retreat from the welfare state that has allowed this laissez faire approach. I think it is becoming far more acute and the pendulum is going to have to be pushed back very actively.

KEVIN BUCKETT:

Where does the leadership come from? We in health can wag our fingers and tell others what should be done, but let us consider a lesson from history. In the 1850s Chadwick came on the scene and said that we needed to do something or the empire would collapse as we keep killing our workforce. This led to the first public health legislation and all the environmental protection. But the view at the time was that people would rather put up with cholera than put up with Chadwick, and put up with the wagging fingers.

MIKE DAUBE:

When you look at why some of these things don't happen, consider what it is that drives our leaders. When I was running a health department (Mike Daube was previously Chief Executive Officer of the Western Australian Health Department), I can remember a lot of early morning and late-night calls from ministers and premiers about various issues, but I can't remember a single late-night call because something preventive hadn't happened. So, again, it is about what drives our leaders.

KONRAD JAMROZIK:

You think about the response to the Port Arthur massacre—there was radical change within 10 days.

STEPHEN CHRISTLEY:

That goes back to your leadership issue. I wouldn't argue your point at all, but I think the political environment as it is at the moment provides great complexities for political leaders, and not a huge number of opportunities.

KEVIN BUCKETT:

I don't think there are many things as stark as the Port Arthur example. But an emergency is always a good thing to drive big public health interventions. For instance, the Garibaldi case (food contamination) in South Australia changed the way the country ran food safety.

PAUL ZIMMET:

We have a bit of a paradox here. Talking about leadership, the Howard government put all the blame back onto individuals in terms of action in the obesity, diabetes and other health areas. I think it would be helpful if we came out with a strong position on the fact that political leadership is important to drive prevention. Of course people engage in unhealthy behaviour and we have unhealthy environments, but doing something about it involves strong political leadership.

MIKE DAUBE:

*An observation about political leadership: Tony Abbott was speaking at the National Press Club in, I think, 2006 and was asked what his greatest achievement as Health Minister was. His response was: ... 'the greatest achievement of the government had been in neutralising health as a political issue.' So I think we ought to recognise that there are different perspectives of leadership, and it is our job to **deneutralise** these areas.*

Opportunities for preventive action

TOM STUBBS picked up the issue raised earlier by Kevin Buckett about the other sectors of government having responsibilities for issues that impact on health. This led to broad ranging discussion on what could and should be done and opportunities for action in the prevention agenda.

ROBYN McDERMOTT:

We need public health policy preparedness—well informed people ready with policies when the political moment comes.

KONRAD JAMROZIK:

More than that, we need to make that moment come. My story of the moment is the Canadian ice hockey player who, when asked his secret of success, said: 'I skate to where the puck will be!' This is something I heard at the first international preventive cardiologist meeting in Montreal in 1997. It is about being prepared—for whatever direction the puck moves—but it is also about influencing the direction of the puck.

MIKE DAUBE:

I've been in tobacco control for 35 years. For the first 25 years people said that we had failed, and now we are having an overnight success! An overnight success takes time!

To get back to seizing the moment. We need to be prepared and have a comprehensive approach. We need to know what it is we want and all be saying the same thing. If public health people can't agree on what they want, then you can't blame governments for not doing what we think is right.

MICHELE HERRIOT raised the issue of readiness to act, which, despite clear evidence, is not always possible because of the political situation:

It is interesting to think around legislation in the food industry for instance, which is one of the more complex

areas in the obesity agenda. From the evidence base, we would argue that the approach should be to legislate. But it is clear that all governments aren't ready or willing to make legislative change yet, although South Australia and Queensland have made a little tiny step. So should we still be pushing for legislation, or should we be trying to give governments some other way of doing things or other things to do? I believe you need a number of initiatives ready to be put in place.

STEPHEN CHRISTLEY:

Yes, I think you need to operate at a number of different levels. In the food context, for instance, you should have healthy food policies for departments of health and health services before you can expect a whole of community approach to healthy food. When you look at some of the social determinants and planning issues using a Health in All Policies approach (currently a major policy initiative in SA Health*), you can get into small projects or create something that is manageable, where you can engage with the community around a particular issue.

KEVIN BUCKETT:

The key element of the Health in All Policies approach that Stephen was just talking about is that, as the determinants of health are largely outside the remit of health departments, we must work with other agencies. But it's about working with them in a particular way. Health shouldn't be taking ownership, but rather, working in partnership assisting them to achieve their targets and policy outcomes while working with them to optimise health benefits from the achievement of their goals. This requires leadership from the centre—without this I think health is going to find it very difficult to actually lead significant progress on intervention on determinants.

KONRAD JAMROZIK:

We need to be savvy about how far ahead of public opinion you get, because if you are too far ahead you can't take people with you. It took me a long time to start talking about the end game in tobacco, which is that smoking be an activity engaged in by a minority of adults, consenting and in private. That's where we are going. Similarly with obesity. Obesity is ecologically unsustainable. Saying that is not victim blaming—obesity is people consuming in excess of their caloric needs.

Universal versus targeted interventions

TOM STUBBS brought the debate around to the issue of universal or targeted approaches to prevention interventions, asking the participants to consider, in the absence of funding for universal interventions, what they would target.

KONRAD JAMROZIK:

I am very cautious about high-risk strategies because time and again we see that the bulk of the problem is in the bulk of the population at moderate risk. For example, you will not do very much to decrease the road toll by ending Formula One Grand Prix racing. Rather, you intervene to change the behaviour of most drivers. That is a lesson that we ignore at our peril. So, when people talk about high-risk approaches, they need to be subjected to very careful scrutiny in my view, as I believe there are better ways of using whatever resource we get.

While there are a lot of things that need to be done, my priorities would be with the structural things. Take food, for example—let's think about salt first rather than fat.

KEVIN BUCKETT:

I heard someone say that you can't legislate for obesity—of course you can't legislate to stop people eating too much but they can be encouraged to eat well. The proposal to ban junk food advertising during children's viewing times is an important first step, but not the only answer. Further, if we are not careful with the junk food issue, we are in danger of attracting a lot of politicians to have a very high-profile fight with a very robust and vehement industry lobby. And once they have fought that battle, they will think that they have done enough in this area, which is of course, far from the case. I think that it is important to recognise that going for an icon approach, like the junk food advertising ban, can backfire if we are not very careful. This is not to say we don't do it, but that we are really careful and strategic.

If you try to pick an intervention, like halving the salt in a loaf of bread, you would do a huge amount in shifting the curve of the whole population away from cardiovascular problems. But I don't know that we should just focus on something as specific as salt. If we

* For a discussion of many aspects of the Health in All Policies approach, see [Public Health Bulletin SA](#), Health in All Policies, volume 5, number 1, March 2008.

are clever, there are also things that we can do that can affect both fat intake and energy intake—things like traffic light labelling on food packaging and public health social marketing campaigns to support it.

KONRAD JAMROZIK:

It would be part of the approach, Kevin. A comprehensive approach in one sentence—regulate salt, educate the public through traffic light labelling and run mass media health promotion activities.

PAUL ZIMMET:

I think we are agreed that addressing the obesogenic environment and other things in the environment that affect health on a broader population level is a much better thing to do than single strategies like attacking food advertising, for instance, and focusing on individual risk factors.

Working in partnerships

The need for a comprehensive approach brought the conversation back to coalitions and partnerships as a way of developing such an approach.

ROBYN McDERMOTT:

I think one way could be to make the link between the outcomes we are trying to achieve in health and the interest that most people have in the environment and their willingness to do something about it.

MICHELE HERRIOT:

Yes, there are some natural kinds of partnerships. The question is, how do you engage with the environment sector, for example, for them to see there is a win for them around environment and a win for us around health? I think you do that by continuing to talk and persuade. I think we have made a way forward with this with obesity for instance, although with some steps back as well. But we mustn't be too hard on ourselves. Tobacco has taken 40 or 50 years to reach where we are today.

KEVIN BUCKETT:

I think that, while we do have natural partners, improving health is still not going to be their core business. We have to do more to make it their core business. It's a question of mutuality, about working together at a senior level. For instance, the performance agreements of chief executives of certain government departments could include actions their portfolio will undertake that will address the determinants of health.

STEPHEN CHRISTLEY:

Take the example of emergency management, which is one of my areas of responsibility. The disaster response groups have moved from planning for specific hazards to an all hazards approach. This discussion we are having here is a bit similar. There are the threats to our society as a whole, a set of common issues, and underneath that we have a whole range of stakeholders and interest groups. Perhaps we need to look at how we mobilise all of those within a framework that covers all of their issues, engaging with a broad number of groups in doing so.

TOM STUBBS brought the conversation back to Konrad's earlier analogy from Canadian ice hockey and skating to the puck:

So, Mike or Paul, in terms of Konrad's puck analogy, would you comment on whether public health is at the point where the puck's going to be. The Preventative Health Taskforce is pretty prominent—is it prominent enough?

MIKE DAUBE:

I think it is getting there. The fact that the Prime Minister made a pre-election promise to put prevention centre stage is a pretty good start. The fact that we have a strong health minister committed to prevention is terrific too. But I keep worrying about Konrad's puck—are we close to that tipping point for prevention? Not yet, no. We need to be outside there pushing government as well.

MICHELE HERRIOT:

I agree. There have to be people externally who push ministers, governments, decision makers, the industry leaders and so on. There is only so much we can do from within government. Again, it's about engaging with partners.

PAUL ZIMMET:

I agree. Four or five years ago public health was not on the political agenda but it is now, and that's through being persistent. The 2007 COAG meeting saw the announcement that climate change and diabetes were the two priorities for COAG. The importance of these issues was recognised.

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STEPHEN CHRISTLEY:

I think if you turn it the other way—what is happening, for example, in the clinical networks (and I can only speak for New South Wales and South Australia)—you have a whole lot of acute care clinicians who are coming very much to understand, or have probably already understood, the preventive agenda as an important part of the armoury of the clinical networks looking at stroke or cardiovascular disease. I think there is a good analogy with previous discussions about how it fits together across government. What we see at the departmental level is a whole lot of fairly fragmented—good, but not lined up—ideas around how you actually coordinate preventive activity. Our role as a department is to work with those people and produce a strategy that focuses on the key objectives, isn't duplicative, is in fact going to achieve outcomes, and is owned by all of those groups.

Funding prevention

The debate on interventions and intervention points was followed by a discussion of possible funding models, given the low level of funding for public health as compared to clinical and treatment services.

ROBYN McDERMOTT:

Just going back to our original discussion around moving beyond risk factors, Konrad made the point that a universal approach was more appropriate than the high-risk strategy. The truth is that, at the moment, there is a funding stream for a high-risk strategy to get GPs to all be screening...

KONRAD JAMROZIK (interjecting):

This, as you know, of course, is not really screening in the public health sense. It's not a properly coordinated effort aimed at screening every member of a defined population.

ROBYN McDERMOTT:

No, of course not. Basically it's doing tests on people who are not sick yet. But, in that sense, because it is not universal, we have a huge amount of the worried well going to GPs consuming fee-for-service money on a totally uncapped budget—unlike public health funding.

I think there is a piece of work to be done to look at the cost-effectiveness of all of these screening activities, and all of the probably well-intentioned Medicare-funded initiatives, which probably are reaching the

people that don't need to be reached and not reaching the ones who do; and whether there is a better use for that money.

KEVIN BUCKETT:

I think that is a key point. Health is quite an inward-looking organisation in many ways. As a sector we are quite good at prevention. Tertiary prevention we are getting better at—with people who have had a stroke or heart disease; and secondary prevention we are quite good at—identifying risk factors and managing these in individuals. But I don't think we're too good at primary prevention—dealing with well people. The health sector, by and large, deals with people who are ill. That's where our focus is and where 98% of the health budget is spent. This is almost inevitable, of course, as we need and want a flourishing sick care system. But the question is: how do we, as a health system, better manage primary prevention?

ROBYN McDERMOTT:

We need a funding model for it. We are doing a whole lot of projects now, inadequately implemented, with very poor population coverage. Perhaps we need to set up a PBS preventive health service which is funded exactly like the PBS.

MIKE DAUBE:

I think you are absolutely right—the playing field is far from level. I think there are then questions about how you approach this type of funding model, because if we are promoting prevention we cannot afford to have our clinical colleagues offside. We don't want an either/or battle and debate with them, but I think these are the kind of things that can be progressed with the support of clinicians, particularly if we are identifying something that can be done that is not coming from their pockets.

PAUL ZIMMET took up Kevin Bucket's earlier point about the levels of prevention: primary, secondary and tertiary:

Kevin has just run the prevention paradigm backwards: tertiary, secondary and primary. WHO introduced a term many years ago—primordial prevention—which is about the underlying conditions dealing with causation of risk factors, which people don't talk about very much. But I wonder if this isn't the level of prevention that we have spent most of our time talking about today—that is, changing the environment to influence the patterns of risk factors or their prevalence.

MICHELE HERRIOT:

Is that something that the Preventative Health Taskforce might look at? Some kind of funding strategy and how it might be managed? Is it something that the national preventive agency might have a role in doing?

MIKE DAUBE:

Yes, the more ideas you give the Preventative Health Taskforce the better, particularly if you are looking at putting a kind of pragmatic hat on in these hard times. We need to identify sources of funding that would make it easier for governments, but won't make all the other agencies think it's being snaffled from the crucial role of funding nuclear submarines or whatever else!

Summary remarks

TOM STUBBS gave all participants the opportunity to provide a summary remark.

STEPHEN CHRISTLEY:

We have all agreed that we need action on both risk factors and determinants, which is pleasing. I think to give us some focus, we have a new federal government who, as Mike has reminded us, came into office with a strong emphasis on prevention. By the third year of its term, after we have got through the hump of the current financial crisis, I think that, given this emphasis, questions will be asked of them about what they have actually done about prevention. And we need to be able to provide that advice. While I don't think we are there yet, as I don't think we have a unified view as to what are our best 10 buys, we are closer than we have ever been to agreeing what the issues are.

I don't think there is an argument about whether we should be doing one thing rather than another—advocacy or leadership or working at a number of different levels from the micro community level to the whole of society level. I think they all need to be done and I think the coalitions and leadership for the particular issues will be critical in taking us forward. Kevin's right about the imperative—there is a strong imperative. We just need to be engaging in how we take that imperative forward.

KONRAD JAMROZIK:

Potentially, the Preventative Health Taskforce provides a forum towards identifying those 10 best buys, and they need to be things that several generations of ministers can be held accountable for. There should be

no question in ministers' minds about what the public health community wants. Ministers have to know what you are going to say before you have opened your mouth, so that they are embarrassed if no action has been taken.

PAUL ZIMMET:

I think we need to raise the agenda of prevention to the highest possible level, not just nationally but internationally, and to be looking at the fact that this is not a problem for the health sector alone but involves urban planning, sports and recreation, agriculture and a range of other sectors. Currently, there are too many silos. WHO have been pushing this integrated approach to prevention and control of non-communicable diseases at government level for 20 years or more, and we are still not getting it.

KEVIN BUCKETT:

Firstly, a cliché: 'look after the things that look after you'. That's why the environment is important, climate change is important, so getting that agenda together is something that is long overdue.

In summary, we need to deal with socioeconomic and environmental determinants and primary prevention issues, and health cannot deal with these things alone. We need to enlist other agencies and sectors who have some sort of ability to deal with those determinants. And to do this we need leadership from central government agencies.

I think health has to redefine its role. Currently, in most states there is a very limited chance for that—it is still very inward looking and still talking about what health needs to do. It is time we started thinking about how to reach out to other agencies who are going to play a role in these things and, perhaps, not to coin a phrase but apologise to one, to humbly go where health hasn't gone.

MIKE DAUBE:

I don't think there is too much disagreement around the table, and nor should there be—you are bringing together members of the prevention family. So we may have little blips here and there but, essentially, we are going to be singing the same song.

I think the key message is having a comprehensive approach, knowing what we want, advocating for it, working in coalitions, keeping at it and not being disappointed if something doesn't happen tomorrow or even next year.

MICHELE HERRIOT:

My thoughts are fairly similar about what is important: leadership; advocacy and the role different people can play in doing that advocacy; being on the same page; understanding that it's not the causes versus the causes of the causes but, rather, both; and, above all, the urgency—that we can't necessarily always wait until we have all the evidence.

One of the dilemmas for me is over universal versus targeted interventions. While it is clear that we need to do both, I just wish someone would give me a magic formula for what's a balance of investment between them! Targeted strategies are a way of engaging the rest of the health sector and maybe helping them to come on board for a prevention effort, albeit focused on individuals, so this needs a lot more thought.

ROBYN McDERMOTT:

I think we need to work to get the portfolio ready for when the next moment comes, and we need to be exploring coalitions to work with. For example, I think the carbon footprint of obesity is a really good one. I think we need to explore who our friends are—sometimes they are there and you don't know who they are—including in the industry.

TOM STUBBS:

In summing up the discussion today, it is clear that you are all in agreement that we should be working on both risk factors and determinants of health, and that it is not a case of one or the other. The sector cannot afford to be seen as in any way divided. The issue of leadership was clearly dominant. I didn't hear anyone disagree that we need persistent advocacy and a strong leadership willing to take the hard decisions. I was quite pleased to hear you say don't wait—it is not more research that is needed, we need to get on with it now—it is urgent. And it came through loud and clear that prevention is everybody's business. We need coalitions and partnerships and we need to be working across government. If we fail, then the consequences of inadequate preventive investment and action will ensure that the population will be unwell and the acute sector health budget will be all-consuming.

Reflection on the prevention debate: SA Health perspective

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Introduction

In reflecting on prevention in a health context, a useful starting point is with the words of Ilona Kickbusch, the Adelaide Thinker in Residence in 2007. In her final report to the South Australian Government, Prof Kickbusch stated:

*'Discussing the state of health at the beginning of the 21st century is not dissimilar to discussing the state of the environment. Both are in crisis and run counter to the notion of sustainable wellbeing, both focus around the ways of life that have developed in our societies and both indicate that significant changes are required at the level of policy and of society.'*¹

If illness prevention was merely a matter of motivating individuals to change behaviours, the road ahead would be easy. It is not. While the need for healthy eating and exercise, and avoiding harmful substances, is generally not argued, actual change in behaviour is harder to achieve, both at an individual and a community level. Similarly, in tackling climate change, while the need for change seems acknowledged, the evidence of change at an individual level is limited.

Some of the ways forward in response to these 'crises' may well be found by linking our actions and working together on issues. There is a narrative that joins concerns that people have over the state of the environment and the imperative to improve the health of the community. The link between a healthy environment and the health of the community can be harnessed in a way that can mobilise action for improvements in both, and make clearer the actions that need to be taken.

Health and environment in partnership

There are some clear complementary links between health and environmental sustainability. For example, the way we currently eat can be unhealthy both for ourselves and our environment. Improving people's diet can make an important contribution to reducing our ecological footprint and our greenhouse gas emissions, while at the same time reducing overweight and increasing life expectancy. Additionally, promoting activities such as walking, cycling and using public transport can reduce carbon emissions, while at the same time improving cardiovascular health and reducing obesity. These examples provide opportunities for the development of new knowledge and new ways of working, and point to the possibility of mutually beneficial partnerships.

This partnership approach to prevention is absolutely vital as we are all now well aware that the determinants of health and illness, in the main, lie outside the remit of the health system. It is now also beyond debate that, if we are to improve the health of the population, we must work on these determinants of health. The provision of good health care alone cannot and never has been sufficient to ensure good health. A person's access, or lack of access, to social goods (such as education, employment, social networks, green space and appropriate transport), good living conditions (for example clean air, clean water, safe and nutritious food, good housing, safe neighbourhoods and stimulating communities) and much more has a more profound impact on their level of health than does access to health care. It takes prevention strategies that act on our social environments, physical environments and economic activities to bring about major health gains. This can only be done with a partnership approach.

The determinants of health

Of course, health is an outcome of lifestyle choices, such as achieving adequate exercise, a healthy diet, moderation in alcohol and not smoking. However, the ability to achieve these healthy lifestyles is in itself mitigated by the determinants of health discussed above. To choose healthier lifestyles you must have the opportunities and resources to make those choices. Those suffering social disadvantage are much more likely to not have those opportunities and resources, and this manifests itself in the greater prevalence of risk factors and chronic disease in these populations. While we do need to deal with these risk factors, simply focusing on lifestyle without considering the

social, regulatory and physical environments in which people live, as well as the underlying determinants, will not lead to real improvement in the health of the population. This is the clear lesson of Professor Kickbusch's residency and the very clear message of all the evidence emerging from the WHO'S Commission on the Social Determinants of Health.²

The need to deal with the determinants of health is one of the challenges facing the community, and any failure will simply contribute to the crisis to which Kickbusch refers in the above quote. The explosion in demand for health services, and the pressure this is placing on health budgets, is due in large part to the increase in chronic diseases that are largely preventable. This explosion, which is clearly unsustainable, is an economic challenge facing governments worldwide. Challenges such as this provide both the necessity and the opportunity for new ways of thinking, and these opportunities need to be grasped.

Health in All Policies approach

South Australia has taken up the challenge facing health, recognising that what is required is a coordinated and significant change at the level of policy, across both government and society. One strategy that SA Health is adopting is moving forward on the Health in All Policies (HiAP) approach, as recommended by Professor Kickbusch. The South Australian Government has recently mandated the implementation of HiAP across government, with the particular focus of developing the health potential of South Australia's Strategic Plan (SASP). This is being done in full partnership with the Department of Premier and Cabinet and all other participating departments and agencies. It is also intended to engage local government in this new approach, as recommended by Professor Kickbusch.³

The crux of this work is to utilise SASP as a starting point for a new way of working. SASP has a commitment to achieving high-level interrelated targets covering economy, environment, communities, wellbeing, education and innovation, towards which all government portfolios must work. For agencies to achieve these targets, they need to move outside their silos and work cooperatively across government. The HiAP approach provides a practical way of working on this broader agenda of prevention by acting in collaboration on priorities with other sectors of the government and the community.

Conclusion

In reflecting on the way forward with the prevention agenda, health needs to look for and grasp opportunities and engage with partners, both the obvious ones and the less obvious ones. We must not ignore risk factors, but continue with programs, activities and strategies which we know are effective in dealing with risks. At the same time, the necessity for a focus on action on determinants must be asserted—HiAP is providing SA Health with a practical method to achieve that focus.

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Why primary prevention is (mostly) a better bet than clinical prevention

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Background

Gains in life expectancy in Australia and other OECD countries since 1980 are mainly due to falls in cardiovascular disease (CVD) mortality, principally stroke and coronary heart disease (CHD). CHD mortality in Australia declined dramatically from a peak in 1970, when male deaths reached almost 580 per 100 000, to below 200 per 100 000 in 2002,¹ reflecting a similar trend in the US and Europe. The decline from 1980 has been analysed for US data and found to be as follows: about half (47%) is due to medical rescue (thrombolysis, angioplasty, stents, coronary artery bypass graft etc) and the other half (44%) is due to changes in risk factors, including cholesterol reduction (24%), blood pressure control (20%), smoking reduction (12%) and physical activity (5%). These reductions have been partially offset by increasing obesity and diabetes, which increased CHD deaths by 8% and 10% respectively.²

So, while life expectancy has hit a new high as deaths from CVD and cancer decline, more people are living with chronic diseases from mid-life, and have increased our reliance on using medications to manage them. The greatest growth is occurring in the number of people afflicted by multiple chronic diseases, where drug management can be expensive, complex and sometimes hazardous.³ In Australia in 2004–05, CVD was the most expensive group of diseases, consuming 11% of total allocated funds—half on hospital in-patient treatment, 28% on drugs, 19% on out-of-hospital care and 3% on research.¹ In the US three-quarters of the two trillion dollar health bill in 2006 was directed at treating chronic disorders, and two-thirds of the growth was attributable to worsening health habits, mainly epidemic obesity.⁴

Cure, clinical prevention or primary prevention?

In the light of this evidence, the focus of clinical care is moving from cure to prevention, where future diseases or risk factors are anticipated in otherwise healthy

people. This usually involves screening in the absence of symptoms, on the assumption that treatment is more effective when the condition is caught early. The creation of new Medicare item numbers for routine checks for those aged over 55 years has led to an increase in these services. These checks will usually detect one or more features of the metabolic syndrome, which will then usually translate into prescriptions for one or more drugs to lower cholesterol and/or blood pressure. Overweight is usually the primary problem; however, weight control (by eating smaller portions of healthy food and taking more physical activity) is rarely addressed effectively in a GP-based encounter, and the likelihood of long-term adherence to prescribed medication is less than 40%.⁵

Further, in Australia it is not known what proportion of 'at-risk' adults actually access these services from GPs. Following trends in other service use, the likelihood is that screening takes place among the better-off and lower-risk groups. Evidence is not available for the population-level effectiveness of adult screening for common CVD risk factors, the effective targeting of the groups most likely to benefit from clinical prevention, the subsequent (mostly drug) management of these groups and the potential cost of these measures. The current arrangements, however, make it likely that prevention interventions in clinical settings take from the poor and give to the rich, as impoverished and culturally disenfranchised people are less likely to take part in preventive activities than those who are better off.

Having doctors counsel patients to lose weight or quit smoking may or may not be effective, but it is not cost-effective.⁶ Most doctors lack the time, skill and motivation to provide ongoing, sustained counselling. It is time to rethink the mantra of (clinical) prevention as always better than cure. Some of the potential harms of preventive treatments include increased fear of illness where none exists, clinicians' frustration over an expanding list of screening imperatives that are impossible to accommodate in the 15-minute standard consultation, and the potentially toxic effects of drugs taken for life in healthy people without any evidence of benefit to them individually.⁷

The 'yield' of screening recommendations will differ markedly according to the prevalence of the risk condition in the population. For example, while the relative increase in long-term CVD mortality in a population will vary with blood pressure, the absolute mortality risk at the same blood pressure will vary

significantly between different groups. Thus, the uncritical application of screening and treatment for blood pressure would lead to different outcomes in different populations.⁸

The health care delivery system, as it is currently configured, favours paying for treatment of chronic diseases rather than preventing them in the first place. Instead of debating whether clinical prevention or treatment saves money (probably neither do), we should determine the most cost-effective ways of improving population health. In some cases it will be treating those with established disease, but mostly it will be creating environments that support good health practices, and it will be in the community rather than the clinical setting.

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Prevention: the Commission on the Social Determinants of Health and recasting the debate to focus on health and wellbeing

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Introduction

This article provides a perspective on the current debate in Australia about the 'prevention agenda', including a critique of some of the premises underlying this agenda. It describes the key findings from the report of the Commission on the Social Determinants of Health (CSDH)¹ that have most relevance to Australia, and proposes an agenda for Australia to promote health equitably in a way that builds on the commission's report and is positive in focus.

Prevention or promotion —what's the difference?

'Prevent v.t. 1. Hinder, stop (The Concise Oxford Dictionary, 6th edition, Sykes, JB (ed.). Clarendon Press, Oxford, 1976).'

There has been long-term confusion between the terms 'disease prevention' and 'health promotion', often being used interchangeably. Most distressingly, sometimes they are combined in 'preventive health' or 'preventative health', implying that there is effort to prevent (i.e. hinder or stop) health. In fact, a careful reading of the history of health promotion makes it clear that disease prevention has traditionally been very much part of efforts to keep illness, disease and risk factors for disease under control. However, health promotion, while incorporating such efforts, is also concerned with a salutogenic approach that seeks to promote health in a positive way. This view has been most articulately argued by Antonovsky,^{2,3} who maintains that the disease prevention agenda tends to assume a dichotomous classification where people either have a disease or are at risk of it, or do not have a disease. By contrast, a salutogenic approach is based on a continuum model which, as the basis for health promotion, 'directs both research and action efforts to encompass all persons, wherever they are on the

continuum, and to focus on salutary factors'.³ This is far from being a semantic distinction and implies a quite different approach to creating healthy populations than one based purely on preventing disease. Kickbusch⁴ notes that Antonovsky's perspective consistently leads to the key question: How is health created? She also states that health promotion is in 'constant need of being reminded or reminding itself of Antonovsky's key question, so as not to define "health" simply as the absence of risk factors'.

Currently, in Australia, we need reminding of this key question. Our preventive health agenda is actually a disease prevention agenda. There is, of course, much to applaud about this—it often takes a public health perspective, it does seek to prevent disease and it does concentrate on the need to shift the focus of the health system to what causes illness. Yet, it is also frustrating because it could be so much more exciting and cutting edge if it also asked questions about what creates health and, more interestingly, what creates health equitably. Australia is not alone in this—Raphael⁵ has pointed out that Canada's efforts are similarly focused on a limited disease prevention agenda that does little to consider the basic structures of society and how they might detract or contribute to health. He notes that health promotion has become de-politicised, focusing on 'population health', with an application of epidemiology to social issues and a strong discourse on lifestyle choices. This also resonates with the preventive health agenda in Australia, as shown by the following quote from the Preventative Health Taskforce website⁶:

'The Taskforce will provide evidence-based advice to governments and health providers on preventative health programs and strategies, focusing on the burden of chronic disease currently caused by obesity, tobacco and the excessive consumption of alcohol.'

Our current prevention agenda has a built-in tendency to see those individuals or groups who do not achieve low risk and low disease rates as deviant in some way—characterised as high-risk groups or non-compliers. They, rather than the social and economic structures that constrain their lives, are viewed as the problem. The Commission on the Social Determinants of Health offers a view of health and health equity as embedded within political, economic and social relations, and demonstrates how a more salutogenic perspective can be adopted.

Perspectives from the Commission on the Social Determinants of Health

The commission has addressed Kickbusch's question: 'How is health created?' and has adopted a salutogenic perspective. Since its formation, the commission has focused national and international efforts on addressing the social determinants of health in order to increase health equity between and within countries. Its focus has been on knowledge about the impact of social determinants on health and what can be done to make the health impact more health promoting—its knowledge networks have developed detailed records of policy and program actions. It has also taken action through the civil society and country work streams, bringing together more than 10 countries including

Bolivia, Brazil, Canada, Chile, Iran, Kenya, Mozambique, New Zealand, Sri Lanka, Sweden, Thailand and the United Kingdom. The focus of this work has been on the facts that create healthy and equitable societies. Table 1 summarises some of the main recommendations from the commission's report and provides some ideas for how these can be translated to Australia. What is striking about the report is that, while it recognises the public health importance of the continuing burden of both infectious disease (especially in poor countries) and chronic disease, it also accepts the evidence that shifts in the pattern of disease largely reflect factors to do with the organisation of societies and the distribution of power. It is this perspective that is largely absent from the current Australian debate concerning 'preventive health'.

Table 1: Selected key recommendations from the Commission on the Social Determinants of Health that highlight application to Australia

Key recommendation	Example of application to Australia
Improve daily living conditions	
Equity from the start (including physical, social/emotional, and language and cognitive domains) to ensure that all children reach their potential	<p>Ensure coherent policies between sectors for early childhood and through the school years.</p> <p>Implement generous parenting leave.</p> <p>Develop policies to support parents.</p> <p>Focus on public health perspectives on child support and protection.</p>
Healthy places – healthy people	<p>Introduce major initiative to shift urban planning to encourage physical exercise, and use planning regulations to control fast food and alcohol outlets.</p> <p>Put health equity at the heart of urban governance and planning.</p> <p>Develop a range of healthy-setting initiatives including healthy and sustainable communities based on local government, state government and NGO cooperation.</p>
Fair employment and decent work	<p>Introduce policies to reduce health impacts of precarious employment.</p> <p>Safeguard occupational health including exposure to material hazards and psychosocial impact.</p> <p>Encourage healthy work–life balance.</p>
Social protection across the life course	<p>Aim for universality rather than targeting and conditionalities in social protection payments.</p> <p>Increase generosity of family policy.</p> <p>Maintain and extend Medicare (including to dental services).</p> <p>Create citizen debate about how health service spending can be curtailed.</p> <p>Achieve a demonstrated shift of health dollars to primary health care and health promotion.</p>

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Table 1: continued

Key recommendation	Example of application to Australia
Tackle the inequitable distribution of power, money and resources	
Health equity in all policies, systems and programs	Adopt an across-government Health in All Policies initiative led by the state Premier's Departments or the Prime Minister's Department. Adopt a social determinants function across policies and programs by health departments, and a stewardship role to support this approach across government.
Fair financing	Implement progressive taxation and advocate for global financial mechanisms to ensure funding for global action on the social determinants of health. Increase expenditure on overseas aid to 0.7% of GDP.
Market responsibility	Ensure that basic services essential to health (water, sanitation, power supply, health services) are publicly run and accountable. Encourage citizen debate about public ownership of assets and the need for regulation to control private sector activity.
Gender equity—tackling gender bias in institutions	Increase female representation in parliaments, governments and boards of management. Assess broader family and work policies to ensure they encourage gender equity. Continue work to reduce gender-based violence.
Political empowerment—inclusion and voice	Work to improve operation of parliamentary democracy. Encourage genuine rather than token participation in government decision making. Fund independent bodies to support citizen participation. Support participation of recipients of government funding in critiquing of government policy.
Good global governance	Australia to support the development of a global architecture of regulation. Australia, as a member state, to strongly encourage WHO to adopt a social determinants of health approach in all its policies and programs.

A positive health promotion agenda for Australia

Ultimately, we need to see the emergence of a new Weltanschauung: a new view of the world, a new framework of ideas within which to make choices and decisions.⁷

The tone of the current prevention agenda tends to be negative and defensive. It appears to be motivated by fear of a threatening tidal wave of health care expenditure in the wake of a growing epidemic of chronic disease. This would explain the focus on risk factors (something very tangible that can be tackled and is therefore immediately politically attractive). It also explains the relative silence on the social determinants of health, especially those that address the more fundamental causes of inequity and ill health.

Moving to a salutogenic approach would enable Australia to harness an approach to improving health that was based on hope and vision rather than fear and overtones of the 'nanny state', a spectre that haunts popular responses to public health initiatives. Focusing on health and wellbeing also means that we are likely to evolve an agenda that both tackles those issues that will improve daily living conditions and attends to the inequities in power and resources that drive how health is structured in all societies. This will require a shift in mindset—a willingness to set aside a preoccupation with risk factors and embrace a visionary approach that seeks to ask fundamental questions about the way in which society is organised. Obviously, this short article cannot address this question fully. I have elaborated in more depth on some of the changes required in *The New Public Health* (Part 6: Healthy Societies and

Environments).⁸ There, I make it clear that the approach must incorporate an ecological perspective and assess the extent to which the basic structures of society (the economy, the structures of our cities, and the fabric of our community and social lives) contribute or detract from health. Crucially, there are no simple answers.

In terms of immediate response, I would suggest that Australia establishes an *Australia 2040 Commission*, whose brief would be four-fold:

- > to develop a broad strategic vision and plan for Australia's future
- > to be mandated to encourage cross-government action towards implementing this plan
- > to encourage and facilitate a widespread citizen debate about the future, posing the question of determining what kind of society we want for us and future generations to live in by 2040
- > to determine measures of our progress as a society that go beyond a focus on economic development and encompass a consideration of human health and wellbeing.

It is worth considering this proposal in light of this moment in history. We are emerging from a period of economic rationalism or neo-liberalism that saw public services privatised, markets deregulated and a rampant individualism and consumerism take hold of public imaginations.^{9,10,11} There are many signs that this was not healthy, especially for our mental state.^{7,12,13} The signs are that this radical experiment with a new world order is now under question. The global financial crisis, the election of a US president with a vision for change, the rejection by the Australian electorate of the Work Choices policy, and the growing acceptance that action on global warming is essential to our survival all create a climate in which a new vision for our collective future is imperative.

A 2040 Commission would be able to provide vision and integration across government. It would encourage and stimulate a broad citizen dialogue about our future in order to produce a strategic planning framework for ensuring a healthy Australia. It would enable us to explore the great issues we face—how to develop economic activity in a way that does not threaten our very survival; how to best protect the environment for future generations; how to create a society that encourages mentally and physically healthy citizens; how to distribute the benefits of society more equitably; how to ensure social and economic inclusion;

and how to recognise the responsibilities that Australia has for creating a more equitable global community and ensure that this community happens.

There are many building blocks that the 2040 Commission could use to develop consensual visions and plans for the future. The Australia 2020 Summit¹⁴ produced ideas and suggestions for our future that could provide a starting point for the 2040 Commission. Of course, the Commission on the Social Determinants of Health is a fantastic resource as it makes a strong case for the need to attend to the underlying determinants of health. Table 1 indicates some ideas for how its report could translate to the Australian setting. The Australian Social Inclusion Board will have much to offer as an across-government venture; and the South Australian Social Inclusion Initiative has shown that such an approach can be effective in breaking down bureaucratic barriers.¹⁵ Within the health sector the National Preventative Health Taskforce, the National Indigenous Health Equality Council and the National Hospitals and Health Service Reform Commission show signs of producing ideas that are relevant to a broader understanding of health, for example using policy to create environments that make healthy choices easier to make.

Other sectors crucial to the determinants of health, including housing, employment, education and environment, will all have existing processes that could feed into the 2040 Commission. There are also many citizen groups and non-government organisations that would bring an essential voice to the table. Much could also be learnt from the growing literature on happiness, and how different social organisations and personal habits can shape the extent of happiness.¹⁶ This literature notes that, like health, after a certain level of economic development there is no linear relationship between average happiness levels and economic development measured in GNP. This signals the need for a citizen debate about what the sources of satisfaction are and what type of society is likely to bring about happiness and health.

Finally, we need to develop a few agreed measures or an index to determine how well we are doing as a society. Economic growth remains a central factor in how we measure success and progress but, increasingly, the wisdom of this is questioned. Calls are mounting for measures of progress that count factors that matter to people's everyday lives. An example is the Happy Planet Index,¹⁷ developed by the New Economics

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Foundation, which is based on the criteria of average life expectancy, life satisfaction and ecological footprint. When applied, this index demonstrates that there is no necessary relationship between long and happy lives and high levels of resource consumption. Adding an equity measure to this index would be useful. The idea of the index would be to shift Australian decision making to a broader base than purely economic.

Conclusion

A preventive agenda for Australia is important and will help shape our health sector. Yet so much more is possible. There is little doubt that we are at a point in both Australia's history and that of the planet that is both extremely threatening and also full of possibilities for change. Public health, with its central concern about human wellbeing, is in a prominent position to argue for concerted whole of government action for health. An Australian 2040 Commission could lead to a vision, supported by a strategic framework, for shaping our collective futures in a way that is inclusive, equitable and supportive of health and wellbeing.

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The politics of prevention in Australia in 2009

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There are good reasons why prevention is political. First, most people who stand to benefit from prevention, especially the form that reduces exposure of populations to broad-scale risks such as air pollution, dietary salt and poor urban design, are well and not in touch with the health care system except on odd occasions. They really do not wish to be bothered making that contact unless they are sick. They vote accordingly.

Second, the well people in communities at risk may resist because they do not want their lifestyles to change at someone else's behest or for someone else's benefit. As an elderly edentulous man put to me at a public meeting about water fluoridation, why should he have to drink fluoridated water when he had no teeth? They, too, vote accordingly.

Third, those creating the risks—operators of smelters, restaurants and food producers, and property developers—may resist as well, fearing a loss of revenue. And, yes, they vote and they also lobby.

For all these reasons politicians tread warily in relation to prevention—doing and spending little on it compared with treatment or repair services that the public is constantly demanding. Why get into supporting prevention which only public health types want and make yourself unpopular when you could be spending the same dollars on acute care services that everyone likes and will remember you for? You can cut a ribbon at the opening of a new lung cancer ward, but not when you reduce passive smoking in pubs!

Late last year I was invited to address a gathering of hundreds of workplace health and safety officers about prevention of cardiovascular disease. That morning, when I arrived at the conference venue, I thought there must have been a fire alarm. It was actually a *smoke alarm*, but not one with bells and roll calls. I was witnessing a pre-conference gathering of a subset of the OHS officers having a smoke—dozens and dozens of them, forming a sizeable, haze-enveloped pack.

Later in my meeting with the OHS men and women, it was rammed home to me again how complex are the workplace politics of prevention. The complexity is manifested in employee groups disliking employers taking an interest in their waistlines, and employers running scared that they may have to provide their workers with expensive gyms, showers and salads.

Community attitudes to prevention are part of the political mix. I saw ambivalence toward prevention clearly in a questionnaire survey conducted by Tom Pile among enrollees of the Health Maintenance Organisation Harvard Health Partners over 30 years ago. Early in the questionnaire respondents favoured spending more on prevention and less on medical care, but later felt that no dollar should be spared in seeking life extension for them if they developed a brain tumour.

Public transport that is clean, punctual and safe wins no media marks. Nor does prevention. No preventionist wakes on Christmas morning to discover crates of champagne waiting on his or her doorstep—gifts from grateful people who have not suffered traffic crashes or who have not started smoking as a result of the preventionist's professional actions. Compare this with the gratitude (and the Christmas champagne) of the patient whose life has been saved by surgery or medical care, or even psychotherapy.

But there is hope. Once, the environment was considered a topic of interest only to long-haired weirdos who wore cloth sandals, rode bicycles and lived on raw vegetables. Now it is mainstream as we have woken from our dreamtime to find that the world is getting hot because of our industry, agriculture and transport. And we are now discovering that the very things that are perturbing our environment are also making us sick—overuse of fuel, the abolition of the foot as a form of transport, and overconsumption of meat (think methane, forest clearance and obesity).

Through the persistent efforts of many people (of whom South Australia's Fran Baum must surely be Australia's leader), and in partnership with Michael Marmot and many others at WHO and beyond, the intolerable burden placed on the economically less fortunate billions by the way we live is percolating into our consciousness.

For the first time in Australian history it would be fair to say that prevention has influenced elections in the widely felt imperative to act on climate change. Through the green vote of recent decades, and more

recently the outspoken support for a Labor Prime Minister committed to ratifying the 1997 Kyoto Protocol (which he did immediately after election success), the Australian electorate has politically supported prevention.

Mr Rudd said at last year's 2020 Summit that it was now a 'no-brainer' that we need to invest much more in chronic disease prevention. The Federal Treasury is now interested in prevention after catching fright at the future prospect of our hospitals filling up with fat, coughing and diabetic older people whose physical dereliction is completely unnecessary. Bells are ringing.

The political business agenda will increasingly include prevention, even though there may be protest from the health services and their managers that we are now asking them to do things that are foreign.

The big successes in the politics of prevention where politicians have led the charge, or been a significant part of it, are encouragingly and surprisingly many. Think of the legislation for seat belts and random breath tests. Think also of 'slip slop slap', immunisation, and tobacco control pricing and legislation. Think of HIV/AIDS and how much was done by South Australian Neal Blewett when he was Australian Health Minister. He and his colleagues put Australia at the forefront when it came to prevention and epidemic control. The list is long and substantial where politicians were the heroes of prevention.

It is encouraging that the Federal Minister for Health and the Prime Minister have both espoused prevention as part of their political agendas. Much of their interest has been stimulated by the rise of chronic illness, for which prevention is, potentially, a useful strategy. The report of the Preventative Services Taskforce is expected soon—we should make sure that we identify the good things in that report with which we resonate, and help maintain the political momentum necessary for those good things to succeed.

Prevention in the health care system: an economic perspective

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Background—a call to increase spending on prevention

There is a widely held view that in the Australian health care system treatment takes precedence over prevention and early intervention.¹ The recent Australia 2020 and National Prevention summits have intensified calls for a greater emphasis to be placed on preventive health measures.^{2,3} Such calls are, in part, a response to the continuing high burden of chronic illness, much of which is caused or exacerbated by lifestyle choices such as smoking, sedentary behaviour and poor diet. In an ageing population, tackling the growing personal, social and economic burden of chronic illness is seen as imperative, and prevention is increasingly seen as a means to ameliorate this growing burden.

This view is not limited to Australia. The leading Democrat and Republican candidates for the 2008 US presidency proposed to focus on 'prevention' as a key component of their health care platforms, arguing that such a focus 'would save countless lives, pain and suffering by the victims of chronic conditions and billions of dollars'.⁴ The UK Department of Health recently stated that 'an increased commitment to spending on prevention should be part of the shift in resources from secondary to primary and community care.'⁵

The argument for prevention relies on the propositions that prevention is 'better' than treatment and/or prevention is cheaper than treatment, such that an increased focus on prevention activities will improve health and reduce health care expenditure. This paper examines the arguments for a greater focus on prevention, using an economic perspective as a useful framework to inform the discussion.

The meaning of prevention

Various commentators have drawn attention to the confusion surrounding the term 'prevention', and the need to be clear about the type of interventions that constitute 'preventative health measures' prior to engaging in debate around funding priorities.^{6,7} In some commentaries 'preventative health measures' are limited, explicitly or implicitly, to those encompassed within the public health arena and population-based approaches.⁷ Elsewhere, prevention is defined as including clinical services delivered through primary health care, especially for chronic disease prevention and management. Some commentators move somewhat uncomfortably between the two concepts.⁶ Other definitions of preventive health are so broad that they could be construed as encompassing almost the entire gambit of health care, for example the definition proposed by the UK National Reference Group for Health and Wellbeing:

*A 'preventative intervention' is defined as 'a clinical, social, behavioural, educational, environmental, fiscal or legislative intervention designed to reduce the risk of illness, disability or premature death and to promote physical, social, emotional and psychological wellbeing.'*⁸

The Australian Institute of Health and Welfare (AIHW) defines prevention of disease or ill health as any 'action to reduce or eliminate the onset, causes, complications or recurrence of disease or ill health.'⁹

The lack of agreement around terminology translates into confusion regarding current spending on prevention. Figures varying between 1.8% and 6% of the health budget have been cited as 'the spend' on prevention.³ The former is, in fact, the estimated expenditure on public health within nine^a defined programs (\$1.48 billion of total recurrent health spending of \$80.4 billion in 2005–06);^{10,11} while 6% is the expenditure on public health plus community health. Public health excludes preventive services delivered through individual clinician consultations

and by non-health agencies. There is, of course, considerable preventive activity carried out by GPs, dentists, pharmacists, and allied health and nursing staff related to the prevention and management of chronic disease. Consider, for instance, clinician advice to quit smoking, pharmacological management of high blood pressure and high cholesterol, dietician consultations for persons with diabetes and/or who are obese—these are all preventive services. The total 'spend on prevention', defined to include such services, is thus considerable and likely to exceed 20% of Australia's recurrent health expenditure.¹² In 2005–06, for example, over \$2.5 billion was spent on just three classes of preventive medication, namely cholesterol-lowering drugs, anti-hypertensive drugs and diabetes medications.

Using an economic framework to inform the discussion about prevention

Lack of clarity around the definition of prevention and its importance within the health sector underpins confusion concerning the policy objective of a 'greater focus on prevention', and even our capacity to measure whether this objective is being achieved, let alone the impact on community wellbeing.

Health economics is the understanding of markets and market failure, as well as models of priority setting and associated techniques of economic evaluation. Thus, it can provide a conceptual framework for exploring the balance of resource allocation between primary, secondary and tertiary prevention^b and treatment of consequences, and the mix of services within each category. The first thing to note is that the optimal balance of resources between disease stages cannot be ascertained from first principles. Allocating additional resources to prevention is at the expense of their allocation elsewhere. Choices must be made. The benefits gained by allocating additional resources to prevention are offset by the loss of benefit from services forgone. Even where a preventive service is ultimately cost-saving, with downstream cost savings greater than

a Public health expenditure as defined includes: i) communicable disease; ii) selected health promotion; iii) organised immunisation (ie not by GPs); iv) environmental health; v) food standards and hygiene; vi) breast cancer screening; vii) cervical cancer screening; viii) prevention of hazardous and harmful drug use through national strategies and ix) public health research.

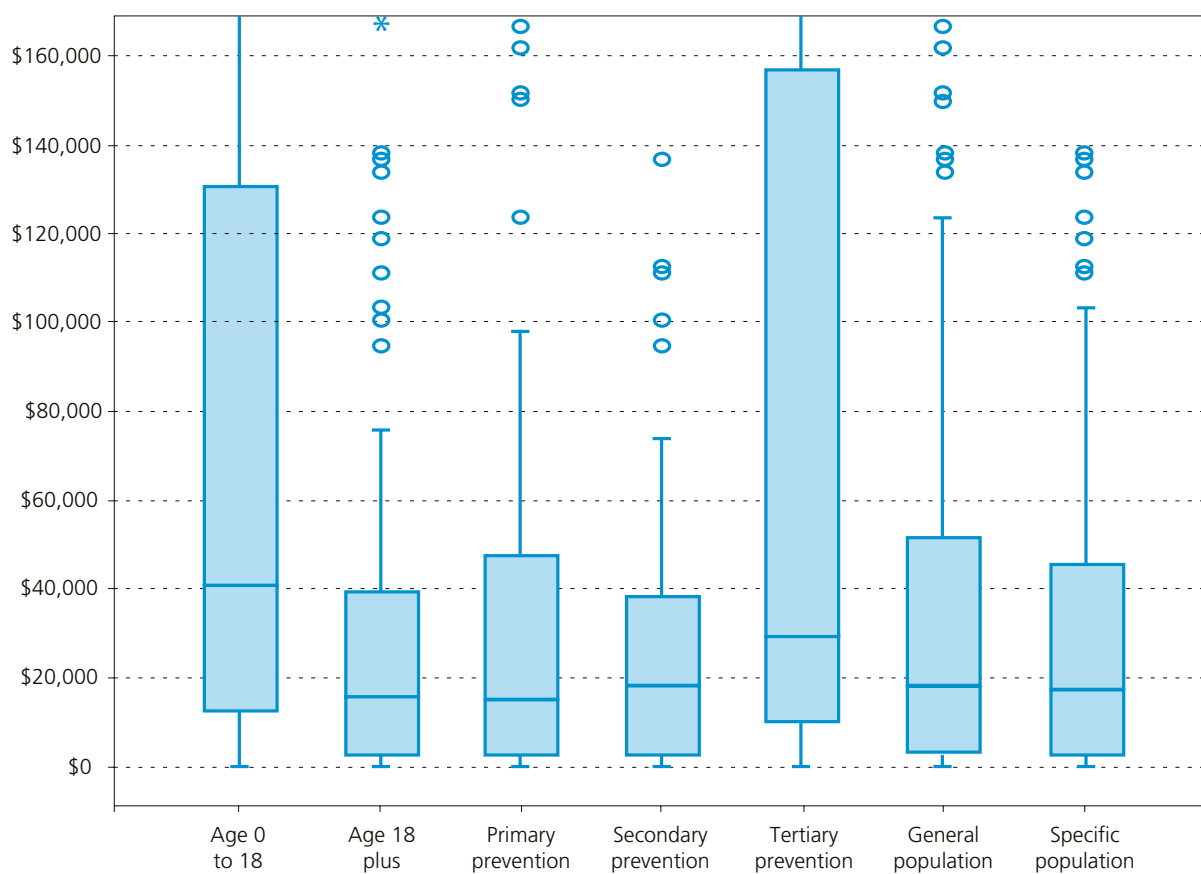
b 'Primary prevention—limits the incidence of disease and disability by controlling exposure to risk and promoting protective health behaviours at the population level; secondary prevention—comprises measures that aim to reduce the progression of disease through early detection (usually by screening) and early intervention, and is limited largely to at-risk groups in the population; tertiary prevention—aims to reduce the negative impact of established disease by restoring function and reducing complications in the affected subset of the population' (Russell et al 2008).⁶

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the cost of the intervention, this does not obviate the need for making choices in allocating current budgets.

In short, whether a net social gain will be achieved from a shift of resource to prevention is an empirical question. For instance: will a greater net benefit for society be achieved by spending more on prevention and less on critical care, high-level residential care and palliative care, or on improving the quality of life of persons with established disease? There is the separate but related issue of whether current spending on prevention generates maximum benefits for society. Various sources of evidence suggest this certainly is not the case (see discussion below). Determining the optimal mix of preventive services is as important as looking at the balance between prevention and treatment of consequences.

Two recent reviews of published economic evaluations of health care interventions demonstrate the imprudence of relying on broad generalisations when attempting to determine the worth of one category of health service over another. Cohen and colleagues⁴ presented the results of a systematic review of 1500 USA cost-utility studies published between 2000 and 2005. They compared the cost per QALY (cost to gain a quality adjusted life year) of 'primary preventative measures' designed to avert disease or injury (n=279) with the cost/QALY of 'treatments' for existing conditions (n=1 221), which included all other—secondary and tertiary—prevention activities. Their analysis demonstrates a remarkably similar cost-effectiveness profile for primary prevention compared to all other interventions, with neither category performing consistently better than the



Box plot: horizontal line represents 50%
Source: Dalziel 2008¹³

Figure 1. Distribution of cost (A\$) per quality adjusted life year (QALY) by age group, category of intervention and population subgroup

other. They report that around one-third of all interventions perform extremely well (at a cost saving of <US\$10,000/QALY) at 31% of primary prevention interventions and 34% of other interventions. They also report that around one-fifth of all interventions confer little (or no) health benefit relative to expenditure (at a gain of >US\$100,000/QALY) at 19.5% of primary prevention interventions and 21% of other interventions. The authors conclude that a shift to primary prevention will not necessarily yield net gains. They note that policies are best based on a careful analysis of the costs and benefits of specific interventions rather than relying on generalisations. Primary prevention does not necessarily reflect better value for money, even taking into account the downstream consequences avoided and the undoubted preference to stay healthy.

A similar review by Dalziel and colleagues¹³ of published cost-effectiveness studies using Australian costs found strikingly similar results. This review covered 245 interventions from across the disease spectrum—primary, secondary and tertiary prevention and palliation; diverse delivery settings and treatment modalities; population-wide as well as targeted interventions; and most disease groups. Similarly to Cohen et al⁴, their analysis found no relationship between cost-effectiveness and broad category of intervention, including stage of disease (Figure 1). For instance, primary prevention interventions performed no better than secondary prevention targeted at the general population compared to specific subpopulations.

It is clear from both these reviews that interventions within any defined subcategory vary considerably in their performance in terms of cost-effectiveness. This means that each intervention needs to be judged individually.

However, where 'market failure' exists, interventions are warranted to address the situation in the interests of dynamic efficiency, that is to generate the 'appropriate' incentives for consumers and providers. Market failure in health care is widely acknowledged. It is observed in attributes such as imperfect information to patients, citizens and providers; and in the existence of externalities—buyers and sellers not faced with the full costs and benefits of their actions and public good attributes. It has resulted in extensive government involvement in health care policy and provision. The existence of market failure distorts the decisions and actions of providers and citizens, reducing community wellbeing.

Market failure justifies a policy role for governments to improve the workings of the market, a necessary pre-condition for dynamic efficiency. The cornerstone conditions for efficiency are 'perfect information' and empowered citizens able to give effect to their (well-informed) preferences. The market cannot be relied upon to provide unbiased and truthful information to the community in relation to lifestyle behaviours if there is conflict with the self-interest of providers. Government action to ensure that citizens are well informed is critical to an efficient market place in which citizens can make the best decisions for their health, including choices about the adoption of either potentially harmful or health-promoting behaviours. Social marketing and associated strategies to inform and empower citizens concerning their health are a critical task of government as they underpin the efficiency of the entire system (for a more complete enunciation of this argument see Segal 1998¹⁴).

This provides a core argument for promoting health literacy, which is further strengthened by considerations of equity. It is almost certain that the resources currently allocated to enhancing health literacy (defined in its broadest sense) are inadequate, given how little is spent (<0.3% of the health budget in 2005–06) and the major knowledge and skills gaps that exist, particularly around lifestyle behaviours. Assistance to adopt healthy behaviours and discourage harmful behaviours is also warranted by the existence of externalities. Put simply, the benefits of adopting healthy and protective behaviours are more advantageous for society than to the individual. For example, the potential harmful consequences of alcohol abuse extend beyond the individual to family members and the wider society. Issues of addiction are also present in relation to some harmful behaviours, and these are exploited by industry, creating a wedge between individual and societal benefits and costs, and again justifying government intervention.

While government involvement in health addresses some distortions, it introduces others (for example 'cost-shifting') due to shared responsibility for health across levels of government and agencies, and the privileging of some modalities and delivery settings over others due to differential funding and delivery arrangements. Segal and colleagues confirm a bias favouring pharmaceutical-based approaches to health care, including prevention, as well as a bias against (for instance) allied health and social marketing approaches.¹⁵

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The thesis of this paper is not that the current balance between primary, secondary and tertiary prevention, and between population-based and clinical approaches to promoting health, is correct. Indeed, it is highly probable that this is not the case, given the nature of market failure, the known distortions in health funding and delivery arrangements, and evidence of highly variable cost-effectiveness ratios that are unrelated to funding decisions. Rather, the thesis is that an uncritical reliance upon simplistic rhetoric should not displace an evidenced-based approach to health funding. Further, health economics, and particularly market theory, should provide the conceptual and analytical framework for exploring this issue.

A three-pronged approach is suggested, involving:

1. Initiatives to address policy failure, notably distortions in health funding and delivery arrangements, to ensure that prevention (and non-medical approaches) can compete fairly for the health dollar. This might include new primary care models—for example, models that support enrolled populations, clinical governance and accountability, and more flexible service delivery options.¹⁶
2. Initiatives to address market failure, especially that of incomplete knowledge, poor health literacy and externalities, to promote informed decision making by citizens.
3. Clinical and economic evaluation of a wide range of preventive and other interventions to extend available comparative performance data to inform policy. This should include an ongoing priority setting program to build a dataset of the relative performance of competing interventions, recognising the considerable challenges that exist in ensuring that estimates of performance are based on good quality evidence. South Australian data linkage activities¹⁷ are an important potential input to such analysis, particularly where outcomes beyond the health sector are likely to be important.

This suggested approach—of addressing system distortions as well as gathering and responding to evidence on costs and cost-effectiveness—is consistent with government policy directions, and will support the development of an evidence-based prevention strategy.

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New Zealand approaches to prevention

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Introduction

As an Australian working in the New Zealand health system, it has been interesting to reflect on this country's approach to prevention, and on the ways in which the approach differs to that in Australia. Often, the approaches are very similar. This is not surprising given the many cultural similarities the two countries share, and that the public health issues confronting both countries are essentially the same. The similarities are most obvious when looking at the plethora of strategies and programs targeting specific diseases or risk factors. However, differences do exist. These tend to be at the big picture level of macro-policy settings and at the level of cross-sectoral work. It is these areas of difference which are the main focus of this brief discussion.

The big picture

The first point, a fundamental one, is that in New Zealand there is a formal treaty relationship between Maori and the Crown. Signed in 1840, the Treaty of Waitangi is, in effect, New Zealand's founding document. In its English version (the great majority of Maori signatories signed a Maori language version which is not entirely consistent with the English version due to the translation of some key terms) it has three articles: Maori ceded sovereignty of New Zealand to Britain; Maori gave the Crown the exclusive right to buy lands they wished to sell, and in return were granted full rights of ownership of their lands and other possessions; and Maori would have the rights and privileges of British subjects. The treaty now has significant implications for how government, and society, work in this country, and this is certainly the case for prevention efforts.

The most obvious practical implication of the treaty when it comes to public health and prevention is that reducing health inequalities between Maori and non-Maori tends to be taken very seriously. This is reflected at a number of levels, including the following:

- > *The New Zealand Public Health and Disability Act 2000* (NZPHDA), the legislation which underpins

the structure and functioning of both personal and public health services in New Zealand, explicitly includes mechanisms giving effect to the principles of the treaty, and also includes in its purpose the objective of reducing 'health disparities by improving the health outcomes of Maori...'

- > *The New Zealand Health Strategy 2000* (NZHS), which provides the operating framework for the sector under this Act, includes as its first principle an acknowledgement of the special relationship between Maori and the Crown under the treaty, and also includes three key actions 'to reduce inequalities in health status'.
- > The wide range of more specific strategies issued across the sector, which contain provisions to give effect to these broad statements.

Most significantly, the issue is seen as being of practical importance, with the need to reduce health inequalities being first in people's minds, especially, but not only, for people working in public health.

In addition to public policy frameworks in New Zealand providing a good basis for efforts to reduce health inequalities, they also encourage recognition of the importance of focusing on prevention. For example, under the NZPHDA the first stated objective is to 'achieve for New Zealanders the improvement, promotion and protection of their health'. Similarly, the first stated objective for District Health Boards (which manage and provide the range of health services at the regional level) under the Act is to 'improve, promote and protect the health of people and communities'. This is also reflected in the NZHS; for example, a core principle which applies across the whole health system is 'collaborative health promotion and disease and injury prevention by all sectors'. The strategy also goes on to establish a number of specific population health objectives. The key point of emphasis about these frameworks is that they are not simply focused on the public health end of the health sector, but on how the whole sector is structured and operated. The explicit emphasis on prevention in these overarching documents makes it clear that prevention needs to be a whole of sector priority.

Another example of this approach within the health sector is the *Primary Health Care Strategy 2001*, which substantially reformed the primary health care sector, most importantly through the creation of Primary Health Organisations (PHOs). The focus of these organisations is not simply the health of individual patients attending a service provider, but the health of

^a This article has been written by Mark Jacobs in his personal capacity, and not on behalf of the New Zealand Ministry of Health. Any views expressed in this article are not necessarily those of the New Zealand Ministry of Health, which accepts no responsibility or liability in respect of the contents of this article.

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the PHO's enrolled population. Essential primary care services are now explicitly seen as including 'approaches directed towards improving and maintaining the health of the population, as well as first-line services to restore people's health when they are unwell'.

Crucially, recognition of the importance of prevention and protecting and promoting health is not limited to the policy frameworks of the health sector. Legislation as varied as the *Gambling Act 2003*, the *Land Transport Management Act 2003* and the *Resource Management Act 1991*, just to give three examples, contain provisions concerning these areas. In addition, the issue is included in a range of non-health sector strategies and policies. This reflects, first, some level of acceptance in non-health sectors of the importance of the broader determinants of health (even if this phrase itself is not widely understood beyond the health sector) and, second, the value placed on working across sectors in New Zealand.

Working across sectors

One aspect that has really stood out so far during my time working in New Zealand is the relative ease of working across sectors on issues relevant to health. This is not to say that responses along the lines of 'that's a health issue and so the Ministry of Health needs to sort it out' are unknown, but, in my experience, the starting point tends to be a willingness of many other sectors to be involved in addressing issues. This can result in other sectors becoming formal partners in a multi-agency program, or providing less formal inputs into an initiative, or simply endorsing (or not seeking to undermine) something that the health sector is wanting to do. It can also work in the other direction, with other sectors seeking partnership with or input into or support from the health sector.

There have been many recent examples of this, and pandemic planning is a particularly obvious one. From early on, this was explicitly a whole of government priority in New Zealand, and converting that high-level decision into practical preparedness involved both active leadership by the Ministry of Health (MoH) and active participation by many other agencies. Building on this country's standard approach to emergency management (mentioned further below), the MoH established an Intersectoral Pandemic Group (IPG) to coordinate national efforts, as well as 12 streams of preparedness activity, such as education, economy, infrastructure, and law and order, as well as health. Each of these streams was led by a different ministry, reporting through the IPG to the MoH and then government. The end result of this process

was truly multisectoral preparedness, as opposed to the more 'bisectoral' (ie health and agriculture) approach seen in many other countries, and planning that was seen as world leading. It has also resulted in spin-offs beyond the area of pandemic planning. For example, links between health and other agencies have been significantly strengthened, further increasing our ability to have input into, and influence on actions in other sectors.

Progressive adoption of health impact assessment (HIA) provides another example of the willingness of other sectors to think about health and the health implications of their actions. Individual HIAs have been taking place in New Zealand for some years, both at the project and the policy/strategic level, and the momentum for HIA has been on the increase. Many factors have been behind this increase, including some effective advocacy by HIA practitioners, a growing workforce of people trained in HIA methodology, a network of public health units willing to support HIA at the regional level, and the establishment of a national HIA Support Unit within the MoH to support efforts in health and non-health sectors. There is reason to be optimistic about future HIA developments in this country. For example, a major infrastructure ministry has recently asked for assistance in building HIA into its key decision-making processes; HIA is being built into planning for future major sporting and other events; and work continues on how to embed the methodology in policy development processes across government.

Another example of ease of working across sectors is where groups of agencies have worked together to address issues of shared concern. This includes programs aimed at increasing physical activity and reducing obesity (involving the Ministries of Health, Sport and Recreation, Education, Youth Development); joint planning by 'social sector' agencies (Health, Social Development, Education); and coordinated work on dioxins (Health, Environment, Labour, Environmental and Risk Management Authority) and on health in the Pacific (Health, Foreign Affairs and Trade, NZAID, Pacific Island Affairs).

The relative ability to work across sectoral boundaries in New Zealand raises some strategic and operational questions: What factors have helped break down the natural tendency of bureaucracies to build and operate behind walls? and Are there lessons for other places like Australia?

Answering the first question, I think a number of factors have been key:

- > Of course, working in a country that does not have a federal system makes things a bit more straightforward.

- > There is a sense that cooperating and collaborating is 'the way we do things around here', so trying to work in this way is not counter to the way people prefer to work.
- > Working across sectors is an explicit priority for a range of people working in health (and particularly in public health). This is important because, even given the above points, cross-sectoral work will not happen effectively unless it is valued and prioritised by the health sector.
- > Cross-sectoral work has been effectively resourced. Staff time has been allocated and funding found within the health sector to support programs in and with other sectors. Health needs to help other sectors engage in dealing with health issues—it's not enough just to say that they should.
- > New Zealand is a small enough place (with small enough bureaucracies) to make working across sectors practical. Bureaucratic boundaries are more permeable, and personal relationships can be and are used every day to help make cross-sectoral work happen.
- > When approaching another sector, we try to describe or frame the particular issue in ways likely to make clear the relevance to that sector.
- > Some common approaches have also been invested in. For example, standard emergency response structures and processes are used across all agencies. This means that people engaging in pandemic preparedness work, for example, all speak the same language. Similarly, people across a range of sectors have been trained in HIA methodology.
- > Finally, rather than trying to impose an all-encompassing cross-sectoral approach to health, we have tended to focus on specific areas and programs and then work outwards from them, looking for further opportunities. This has the benefit of being more practical from a health sector perspective, while being less threatening from the perspective of other sectors.

As for the second question posed above, whether there are lessons in this for other jurisdictions like Australia, I will leave it to readers to draw their own conclusions.

Conclusion

The mix of macro-policy settings and the practical ways we tend to work in New Zealand have presented a number of opportunities for prevention, and many of these opportunities continue to exist. There are, of course, challenges, including converting rhetoric and general willingness into effective action for health, and continuing (ideally, accelerating; at minimum, maintaining) reduction in health inequalities.

SA Health Primary Prevention Plan

Michele Herriot

Director, Health Promotion Branch
SA Health

In line with current trends across Australia and indeed much of the developed world, the health sector in South Australia has seen the need for an increased focus on health promotion and illness prevention. Demand for health care services is growing at unsustainable rates, along with community expectations of what the health system should deliver. There are numbers of contributory factors including: the increasing prevalence of chronic disease, the ageing population, and the always emerging technological improvements in, and resultant increase in demand for, health services.

Prevention is clearly also a national priority, as evidenced by the National Preventative Health Taskforce and the National Partnership Agreement on Preventive Health.

There is strong and growing evidence of the value of increased investment in primary prevention aimed at increasing healthy life expectancy of the population, realising health improvements at lower cost for certain conditions and generating economic benefits over the long term.

Recognising this, the South Australian Government realised that there needed to be a reorientation of the health system from an illness to a wellness perspective—shifting the focus to health promotion, illness prevention and early intervention, rather than just providing more resources to the acute care sector.

The first step in reorienting the health system was the Generational Health Review,¹ commissioned in 2003, and the resultant report which outlined the first stages of a 20-year plan to reform the state's health system. This is reflected in South Australia's Strategic Plan (2007),² which has clear objectives for improving the health of the community. It is further articulated in South Australia's Health Care Plan 2007–2016,³ which sets out an agenda for change that includes reform of hospitals and primary health care, and has a clear commitment to promoting population health.

This commitment to prevention is being delivered by SA Health through the development of a Primary Prevention Plan, which is currently in the drafting and consultation phase.

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The plan complements other planning strategies of SA Health, in particular the Chronic Disease Strategy, as well as the work of the clinical networks. It encompasses the traditional primary prevention areas—'old public health'—as well as supporting innovative strategies including the Health in All Polices initiative that SA Health is currently involved with. The specific health issues of the Aboriginal community are being considered through the development of the Aboriginal Health Strategy, which will identify actions to improve the health of this community and include a detailed analysis of the needs of specific subpopulations in the community.

The Primary Prevention Plan will set clear direction for implementation of primary prevention actions for SA Health, for the department working in partnership with other sectors, and for regional health services. The principles underpinning the plan are based on the need to promote health and prevent illness through sustainable and systemic change, and include:

- > a focus on the health of populations, including particular priority subpopulations, rather than individuals, with a balance between universal approaches and targeted strategies
 - > a strong commitment to equity and ensuring that those with the poorest health benefit the most
 - > actions to tackle the broad range of determinants of health and their interactions, increase 'upstream' investment and address the needs of those who are most disadvantaged
 - > the use of evidence-based approaches as well as the development of innovative strategies for complex problems
 - > a comprehensive approach using multiple complementary strategies including public policy, legislative change, community development, service provision, programs and strategies
 - > a partnership approach based on collaboration across sectors and with other government and non-government agencies
 - > a focus on building organisational capacity for primary prevention
 - > an increasing proactive focus in the health system on promoting health, preventing illness and intervening early
- > the fostering of community support for and active participation by individuals and communities in identifying problems, developing programs and policies, and evaluating their impact.

The Primary Prevention Plan will set priorities and evidence-informed strategies and methodologies, and identify accountability arrangements at the local level to improve coordination and outcomes. It aims to encourage and support more integrated approaches to particular population groups or communities. There will also be recognition of the importance of working on both the determinants of health and on risk factors, and the need for integrated approaches that find the balance between being locally responsive and ensuring sufficient intensity of effort to enable the achievement of measurable outcomes.

References

1. <https://www.library.health.sa.gov.au/Portals/0/GHR-final-report-better-choices-better-health.pdf>
2. http://www.saplan.org.au/images/pdf/South_Australia_Strategic_Plan_2007.pdf
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Communicable Disease Control Branch Report

Communicable Disease Control Branch

Disease Surveillance and Investigation Report 1 July to 31 December 2008

The Disease Surveillance and Investigation Section (DSIS) of the Communicable Disease Control Branch (CDCB) conducts statewide surveillance for notifiable diseases enabling analysis of health data and initiation of specific public health actions to prevent further spread of disease. Specified data are provided daily to the National Notifiable Diseases Surveillance System.

Weekly summaries of notifiable disease as defined in the *Public and Environmental Health Act 1987* in South Australia are published on the SA Health website. Included are counts of notified infections, information about current cluster and outbreak investigations as well as historical data.

Some investigation and control activities are conducted in conjunction with partner agencies that provide expertise and authorities under other Acts in South Australia. These include various Environmental Health Branches, Primary Industries and Resources SA, SA Pathology and Environmental Health Officers (EHOs) from local government.

Summary

Between 1 July and 31 December 2008, the DSIS collected 4266 reports of notifiable diseases. Notifications included a seasonally consistent number of 1444 reports of gastrointestinal diseases after an unexpectedly high number of gastrointestinal infections in 2007. Late in the year, pertussis dominated notifications.

Investigation and control activities included:

- > 16 cases of Shiga-toxin producing *E. coli* infection
- > 13 cases of invasive meningococcal disease
- > 11 cases of legionellosis
- > 5 cases of Q fever
- > 6 hepatitis A cases
- > 9 cases of mumps
- > 1 typhoid fever case
- > 1,016 pertussis cases

- > 16 outbreaks of gastroenteritis due to norovirus
- > 3 child care-related pertussis cases
- > 2 outbreaks of shigellosis
- > 3 outbreaks of influenza in aged care facilities
- > active surveillance for 51 *Shigella* infections.

In partnership with OzFoodNet, foodborne disease investigations included:

- > 1 outbreak of gastroenteritis due to rotavirus
- > 5 outbreaks of gastroenteritis – no agent identified
- > 6 cases of food poisoning - no agent identified
- > 4 outbreaks of illness due to *Salmonella*.

In partnership with Applied Environmental Health investigations included:

- > investigation of a cluster of atypical mycobacterial infections.

VECTORBORNE DISEASE

Two Arboviral infections common in South Australia, Ross River virus and Barmah Forest virus, are both spread by mosquito vectors. These infections usually demonstrate cyclic patterns of disease, peaking in summer months. Each year, in early summer, a health alert is released from the CDCB to raise awareness of these infections. A prevention program, the *Fight the Bite* campaign, has operated in South Australia since December, 2004.

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

Barmah Forest virus

In the second half of 2008, 23 cases of Barmah Forest virus infection were reported compared to 29 in the same period of 2007. Cases comprised eight males and 15 females, with an age range of 1–42 years. Table 1 summarises cases by implicated geographical location of exposure to Barmah Forest virus.

Table 1: Reported geographical location of exposure for cases of Barmah Forest, 1 July to 31 December 2008

Geographical Areas	Number of cases
Murray Mallee	8
Riverland	1
South East	2
SA Metropolitan areas/Unknown	8
Other SA Rural areas	4

Chikungunya virus infection

Chikungunya was designated a notifiable disease under the *Public and Environmental Health Act 1987* in May 2008. One case was reported in the latter half of 2008 in a 38 year-old female who had travelled to an overseas country where Chikungunya is endemic.

Ross River virus infection

Between July and December 2008 inclusive, 97 cases of Ross River virus infection were reported (36 males, 61 females, age range 4–83 years), consistent with 104 in the same period of 2007 (Figure 1). Although low compared to the number of cases reported in epidemics, these data are higher than the background level of Ross River virus infections reported in inter-epidemic periods before 2005. For example, 17 cases were reported in the same period of 2004.

Figure 1 displays Ross River virus incidence since 2002, and reflects higher than usual background activity since 2006. Table 2 summarises cases by implicated geographical location of exposure to Ross River virus.

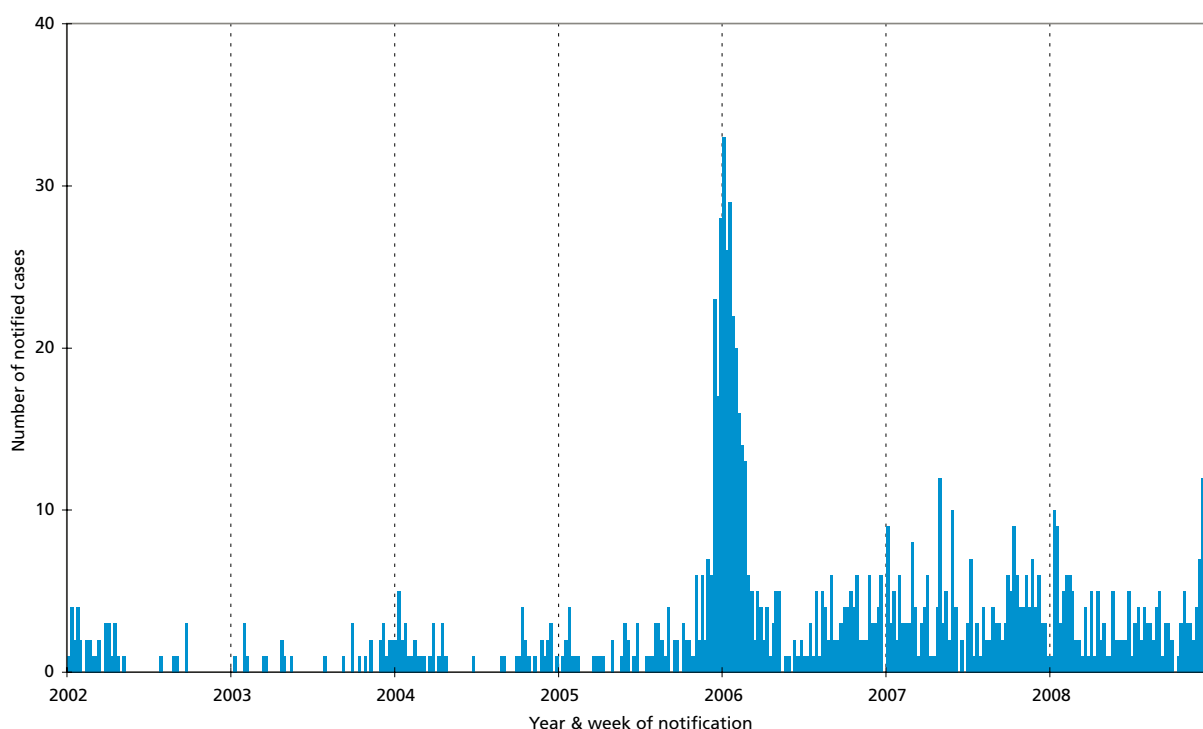


Figure 1: Notified cases of Ross River virus infection, by date of onset, 1 January 2002 to 31 December 2008

Seasonal variation in Ross River virus disease is observed, generally coincident with summer.

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.

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Table 2: Reported geographical location of exposure for cases of Ross River virus, 1 July to 31 December 2008

SA regional area	Number of cases
Coorong	1
Fleurieu	5
Flinders	3
Lower South East	4
Metropolitan areas	6
Murray Bridge	7
Pirie	6
Riverland	5
Lower north	1
Interstate	7
Not Specified	52

Dengue fever

During the second half of 2008, 13 cases of dengue fever were recorded (eight males and five females), compared to 15 cases in the same period of 2007. Apart from a three year-old child, cases were adults aged 22–56 years. All infections were acquired overseas; nine were acquired in south-east Asia, two in Pacific islands, one case had visited African countries and another the Indian sub-continent.

Malaria

The ten cases of malaria reported in second half of 2008 were all acquired overseas (Figure 2). Cases were seven males and three females aged from 10–63 years.

Six cases were caused by *Plasmodium falciparum* and four by *P. vivax*. Those infected by *P. falciparum* reported exposure in Africa and Papua New Guinea; of the four cases infected by *P. vivax*, two reported exposure in India and one in Papua New Guinea, travel information is not yet available for the fourth case.

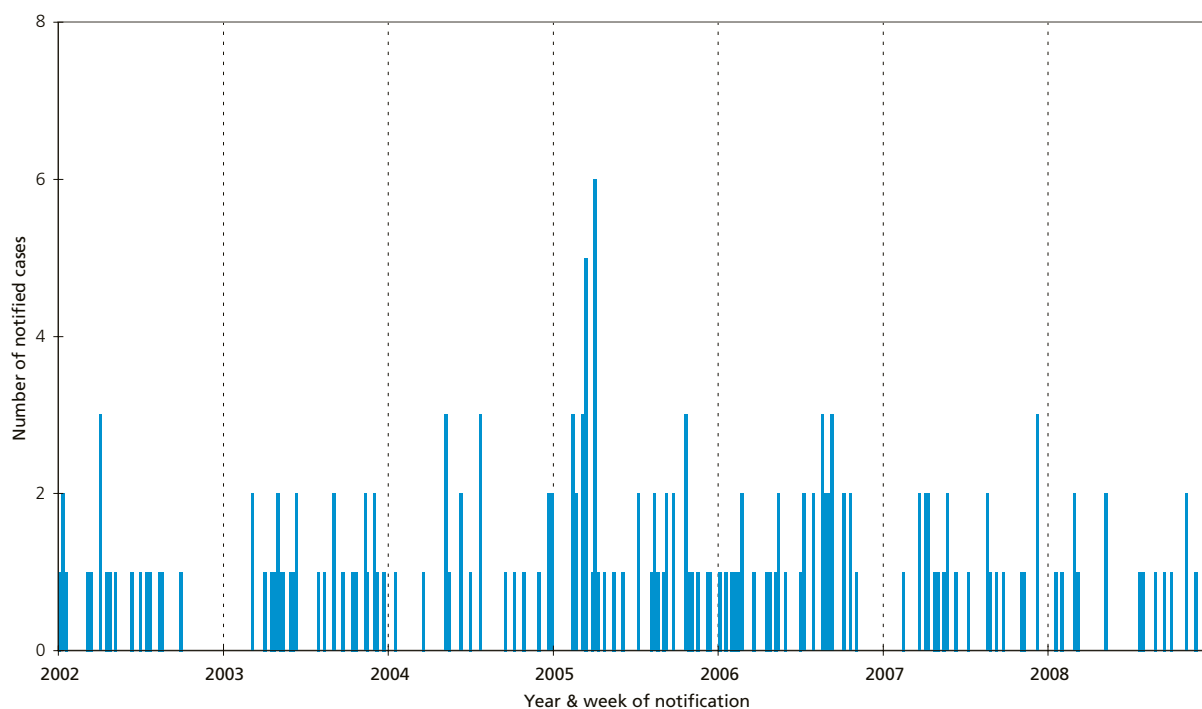


Figure 2: Notified cases of malaria, by year and week of notification, 1 January 2002 to 31 December 2008

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VACCINE PREVENTABLE DISEASES

Influenza

Syndromic surveillance of respiratory infections, including influenza, is conducted by DSIS by collating datasets from both laboratory and clinical sources to describe respiratory disease activity in South Australia.

SA Pathology laboratories report positive tests to DSIS. Clinical diagnoses of 'influenza-like illness' are collected from two sources: Royal Australian College of General Practitioners 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.

Additionally, influenza became a notifiable disease in May 2008, so notifiable disease data describe activity in the second half of 2008 as well.

Between 1 July and 31 December 2008, both influenza viruses A and B caused disease later than usual in the expected season. Influenza A cases peaked in October, at least one month later than expected. Influenza B cases were at their highest in September when they outnumbered influenza A cases four-fold.

Among 165 reports of influenza A were cases aged from <1–96 years (77 males, 88 females). Unusually, more reports of influenza B (305) were recorded; these cases were aged <1–86 years (159 males, 146 females). Figure 4 illustrates the seasonal nature of influenza diagnoses from 2001 to 2008 for both laboratory and clinical diagnoses of influenza in SA, and the remarkable peak of influenza B cases late in 2008.

Three outbreaks of respiratory disease due to influenza A were detected in aged care facilities in SA late in the year; a high proportion of residents had been vaccinated earlier in the year. Public health action included provision of advice and information on infection control measures, recording the timing and extent of the outbreak and recommendations for antiviral prophylaxis for residents and staff, as appropriate.

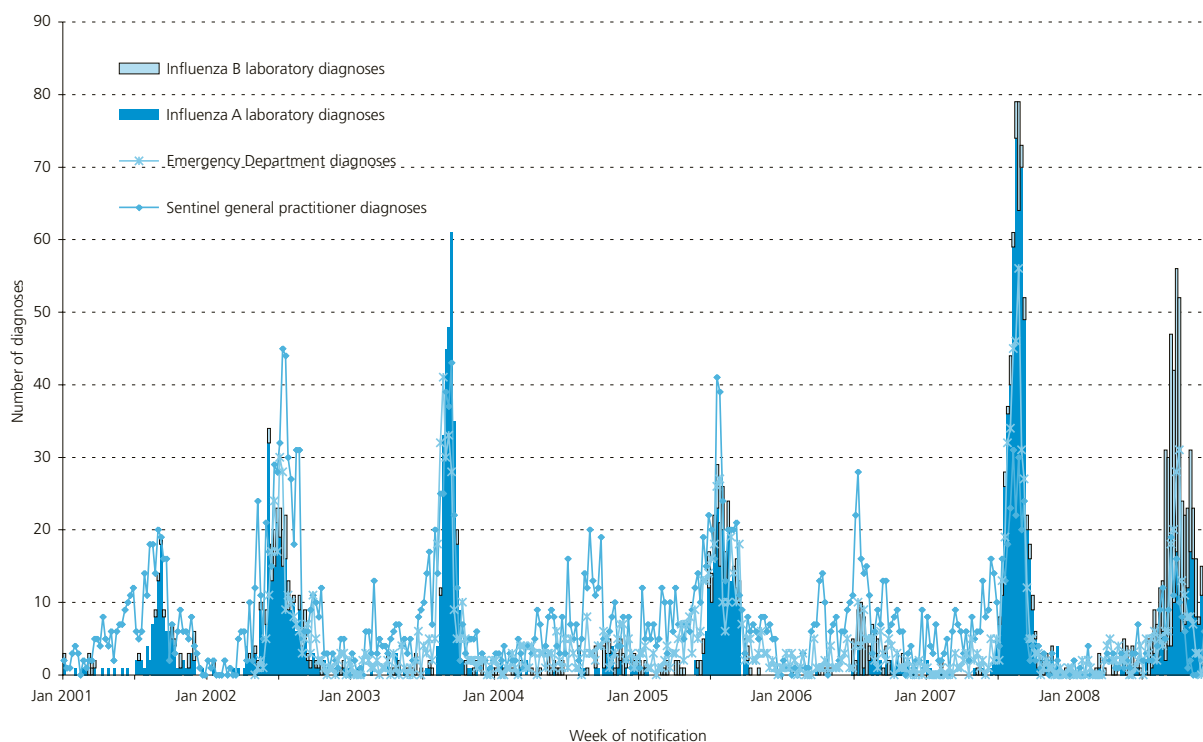


Figure 4: Laboratory and clinical influenza-like illness diagnoses in South Australia, 2001 to 2008

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

Invasive *Haemophilus influenzae*

Invasive infections caused by various strains of *Haemophilus influenzae* can result in serious disease and the most pathogenic strain is *H. influenzae* type b (Hib). The introduction of Hib vaccine in 1997 resulted in a reduction in cases of invasive disease due to *H. influenzae* type b. However, such cases occur occasionally. Especially susceptible to this infection are unimmunised or partially immunised children. Cases with invasive *H. influenzae* disease are interviewed to determine whether there are susceptible household members.

Three cases of invasive *Haemophilus influenzae* disease were reported in the second half of 2008, compared to five in the same period of 2007. The cases were males aged 46–65 years; two were reported as Indigenous and all were hospitalised because of this disease. One infection was caused by *H. influenzae* type b; in the other cases, the *H. influenzae* isolates causing illness were unencapsulated (nontypeable strains).

The Hib case was an Indigenous male from a rural community whose household members included three children under the age of 5 years. The vaccination

status for one child could not be ascertained. All contacts received appropriate chemoprophylaxis in accordance with national immunisation recommendations.

Invasive pneumococcal disease

The bacterium *Streptococcus pneumoniae* is the cause of invasive pneumococcal disease and many individuals carry the organism in the respiratory tract without symptoms. *S. pneumoniae* is a frequent cause of otitis media in children, and pneumonia in all age groups. Vaccines help protect against infection by some of the 90 identified serotypes of *S. pneumoniae*. In adults, a 23-valent vaccine is commonly used; a seven-valent vaccine is given to infants and children.

Between 1 July and 31 December 2008, 78 cases of invasive pneumococcal disease were reported, compared to 53 cases in the same period in 2007. Cases comprised 48 males and 30 females with an age range of <1–88 years. Of these, 12 (15%) were aged < 5 years. Cases were geographically scattered across the state. Five cases were reported to be Indigenous. Seven deaths were reported, six in cases >65 years of age but none in children aged <5 years.

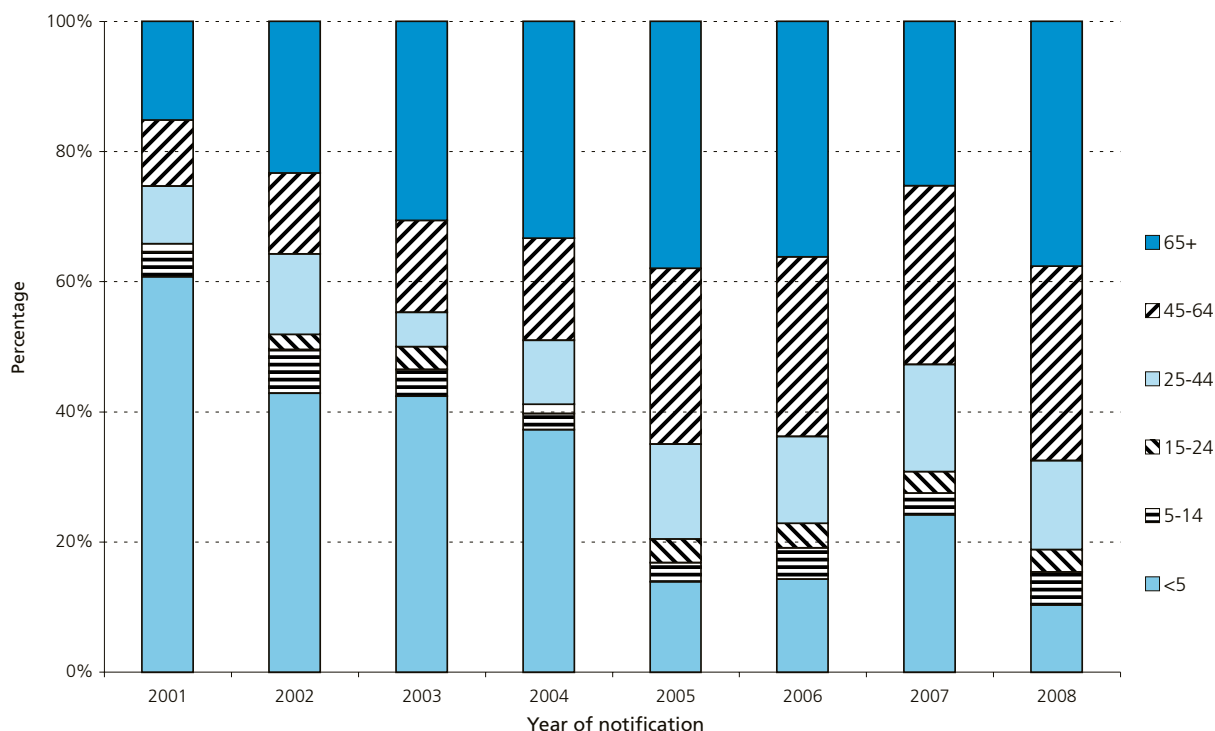


Figure 5: Notified cases of invasive pneumococcal disease in South Australia, by age-group percentage and year of notification, 1 January 2001 to 31 December 2008

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Measles

Measles is a highly contagious viral infection spread by the respiratory route, and is rare in South Australia. Vaccination protecting against measles has been available in Australia since about 1968, and immunisation coverage in South Australia is high.

Susceptible contacts are unvaccinated or partially vaccinated people exposed to the case. Up to 7 days after exposure, such contacts can be offered vaccine or immunoglobulin to avert infection, as appropriate.

One case of measles was reported between 1 July and 31 December 2008 in a 37 year-old female from metropolitan Adelaide, thought to have had one vaccination for measles in the past. Although resident in Adelaide, the case travelled interstate during the infectious period. Intense contact tracing resulted in provision of information to many people including work colleagues and fellow travellers. All commercial premises known to have been visited by the case were issued with information.

A health alert and media release informed medical practitioners and the public of the presence of measles in the metropolitan area, as well as locations of potential exposure. Suspected cases were followed

up by CDCB staff, and SA Pathology (formerly IMVS) provided timely measles-specific testing of these cases. No further cases were detected, and two full incubation periods after the reported case, the level of alert reverted to normal.

Mumps

Before national vaccination, mumps was a childhood disease in South Australia with peak incidence in the 5–9 year age-group. Many young adults currently aged between 29 and 43 years only received a single mumps vaccination in their youth, and these individuals are encouraged to seek further vaccination. Mumps cases are diagnosed by detection of mumps-specific IgM antibody plus a clinically compatible illness. Eighteen cases of mumps were confirmed during the year.

Nine cases of mumps were notified during the second half of 2008, compared to 15 in the same period of 2007 (Figure 6). Cases were reported in five males and four females with an age range of 12–57 years. Five cases were reported as vaccinated and one case was unvaccinated. In three instances, cases were uncertain of their vaccination status. Four cases were from metropolitan Adelaide and five from rural South Australia.

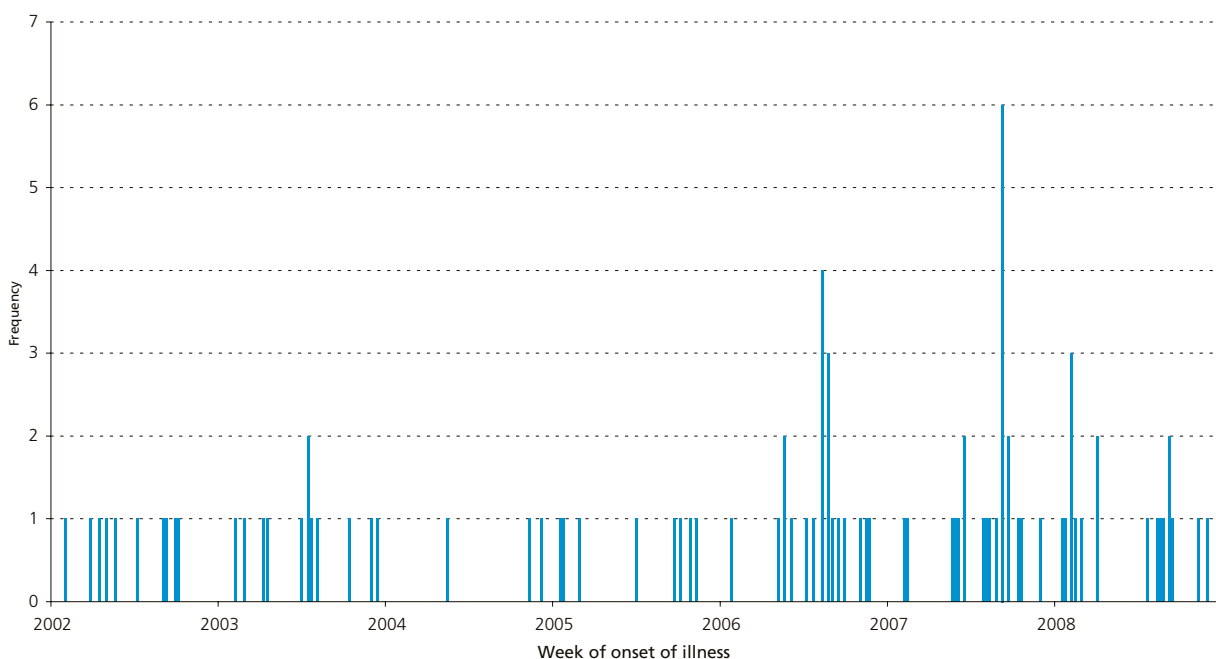


Figure 6: Notified cases of mumps, by date of onset of illness, 1 January 2002 to 31 December 2008

An investigation into a cluster of five cases in a rural community found that four cases were fully vaccinated Indigenous male adolescents including the index case; the fifth case was a non-Indigenous adult female, of uncertain vaccination status, working in the rural community. This cluster was epidemiologically linked to an interstate case of mumps who had visited the community in the weeks prior to the first SA case. Advice about transmission of the mumps virus and exclusion periods was provided by CDCB. No further reports of mumps were recorded from this community.

Pertussis

More than 40 years after pertussis vaccine was introduced into South Australia, *Bordetella pertussis* infection remains common. Infections demonstrate variation in time, appearing as dramatic increases in disease in spring, roughly every 3 to 5 years. Recent data indicate that in South Australia pertussis occurs most commonly in those over 20 years of age. A booster vaccination is recommended for adults over 50 years of age and for other specific groups of adults.

Midway through the second half of 2008, South Australia experienced a substantial increase in pertussis cases, along with other states.

Improved laboratory tests for *Bordetella pertussis* allow more rapid and accurate confirmation of cases and timely public health responses where indicated, for example, when cases attend child-care with children too young for vaccination.

Between July and December 2008, 1016 cases of pertussis were notified, compared to 204 in the same period of 2007 (Figure 7). Cases comprised 402 males and 614 females with an age range of <1–90 years; mean 44 years. Cases resided in a wide range of geographical locations across South Australia. Fourteen cases were reported to be Indigenous, including three children aged <1 year. Most cases (81%) were more than 20 years of age at diagnosis. Of 14 cases aged less than 12 months at diagnosis; six had received only one vaccination, and eight were not vaccinated.

Several cases of pertussis occurred in children attending childcare. In these instances, advice and information was provided to the child care centre for distribution to parents; sometimes children and staff were recommended to seek prophylactic treatment. National recommendations are used for follow-up of contacts.

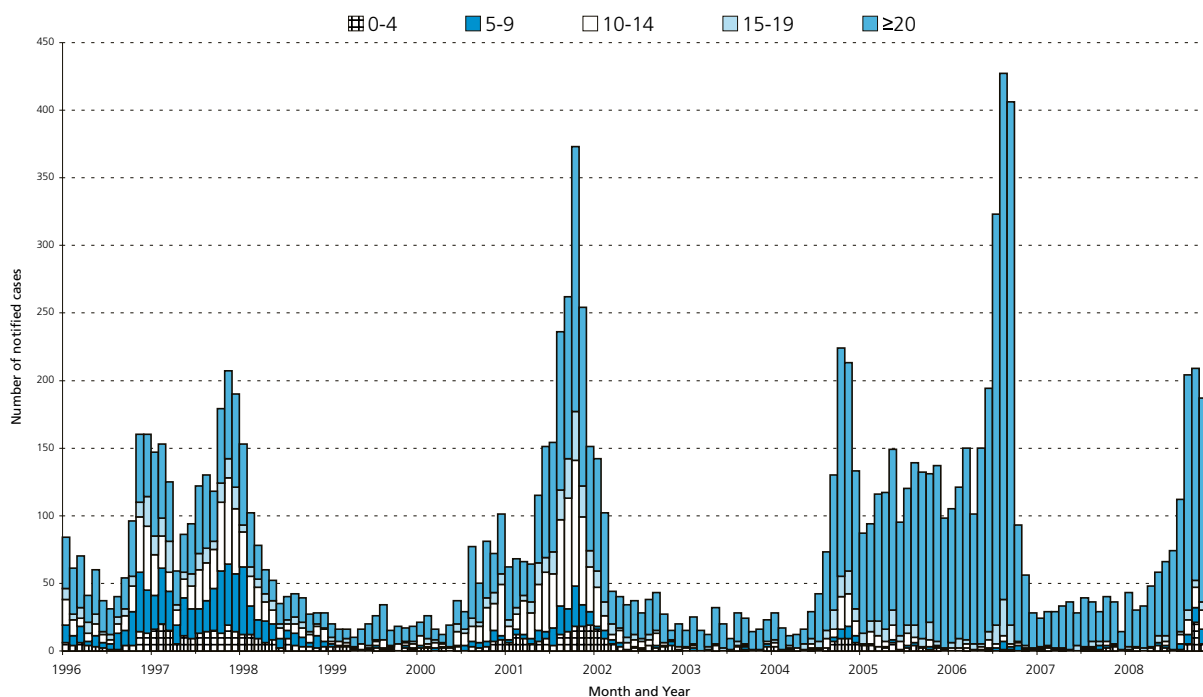


Figure 7: Notified cases of pertussis infection, by year and month of notification and age group, 1 January 1996 to 31 December 2008

This figure demonstrates the impact of vaccination on the temporal frequency of pertussis cases; first in the 5-9 then 10-14 year age-groups.

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Varicella

During the second half of 2008, 995 confirmed cases of varicella virus infection (446 males and 549 females) were reported bringing the yearly total to 1787 cases.

To date, medical notification has characterised 373 infections as chickenpox. These cases had an age range of <1–80 years, but 94% of cases were less than 40 years of age. Almost equal numbers of males and females were recorded; 180 males and 193 females (Figure 8 on the next page).

A further 438 cases were characterised as shingles; these cases ranged in age from 1–97 years; 87% were more than 20 years of age. Four cases of shingles were reported in children aged <5 years in the second half of 2008. In contrast to chickenpox, those with shingles were predominantly female; 253 cases compared to 185 cases in males (Figure 9 on the next page).

GASTROINTESTINAL DISEASES

In the second half of 2008 reported cases of gastrointestinal diseases were consistent with expected seasonal notifications, in contrast to 2007 when gastrointestinal illnesses dominated disease notification. Gastrointestinal illnesses were responsible for 34% of notifications to the CDCB during the second half of 2008, compared to 53% in 2007.

Relatively few outbreaks of gastrointestinal illness required investigation during the period. Sixteen outbreaks of viral gastroenteritis due to norovirus infection were reported; and five outbreaks of suspected viral gastroenteritis where no agent of infection was identified.

Four clusters of salmonellosis were investigated, and two of shigellosis. One cluster of gastrointestinal illness was reported and investigated, but no agent of infection detected.

Campylobacteriosis

Campylobacter infection was the most commonly reported gastrointestinal disease in South Australia during the second half of 2008 and accounted for 65% of these diseases.

Between 1 July and 31 December 2008, 945 notifications of campylobacteriosis were received, compared to 1126 cases during the same period of 2007 (Figure 10 on the next page). Cases comprised

529 males and 416 females, with an age range of <1–92 years; 17% of cases were aged less than 10 years at diagnosis. Cases resided in a wide range of metropolitan and rural locations in South Australia.

No clusters of campylobacteriosis were detected in the period under review.

Cryptosporidiosis

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

Twenty-three cases of cryptosporidiosis were reported in the second half of 2008, consistent with 23 in the corresponding period of 2007 (Figure 11 on the next page). Cases comprised seven males and 16 females, with an age range of 1–55 years. Cases were reported from a range of metropolitan and rural areas of the state.

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

Hepatitis A

Hepatitis A virus causes infection ranging from asymptomatic (particularly in children) to fulminant hepatitis, and is unusual in South Australia. When present, symptoms include fever, anorexia, abdominal discomfort and jaundice. Exposure can be difficult to pinpoint because of an extended incubation period of 15–50 days. Hepatitis A virus is endemic in developing countries. Transmission occurs by the faecal-oral route, and outbreaks due to contaminated food or water have been reported in Australia. Eighteen cases were recorded during 2008.

Six cases of hepatitis A were reported during the second half of 2008, compared to two in the latter half of 2007 (Figure 12). Cases comprised three males and three females aged from 5–55 years; three were siblings. All cases reported recent overseas travel to countries where hepatitis A virus is endemic and none had been vaccinated prior to departure. Contact tracing

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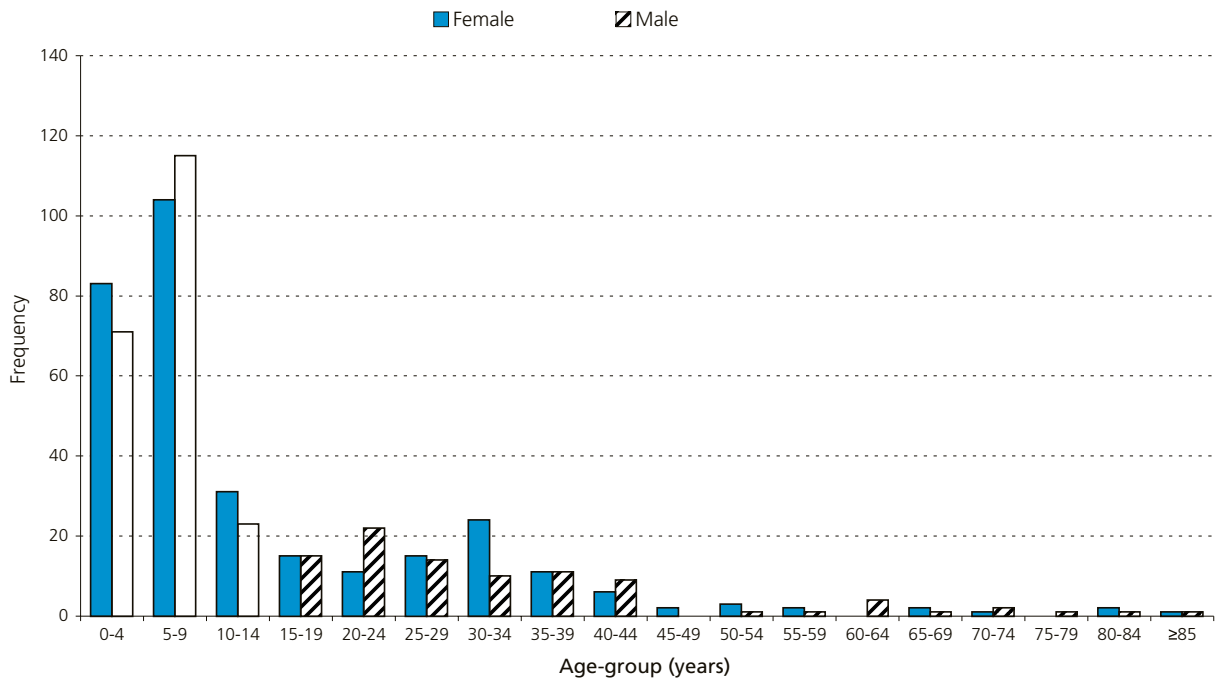


Figure 8: Notified cases of chickenpox by age-group and sex, 1 January to 31 December 2008

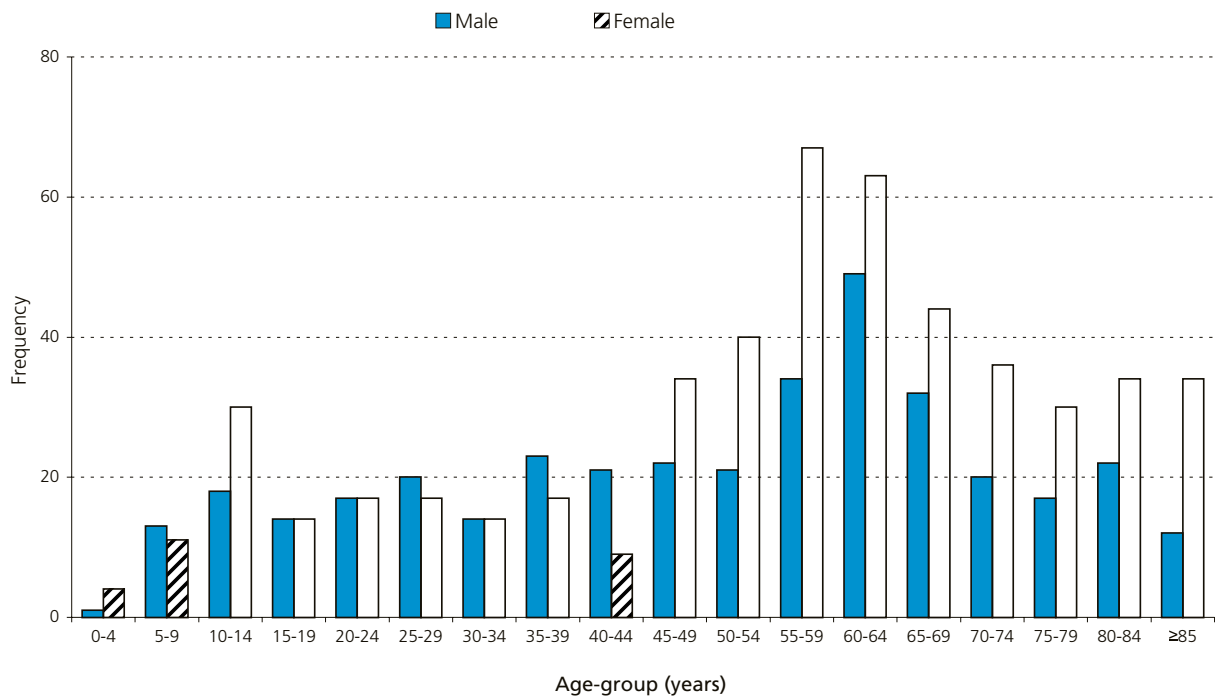


Figure 9: Notified cases of shingles, by age-group and sex, 1 January to 31 December 2008

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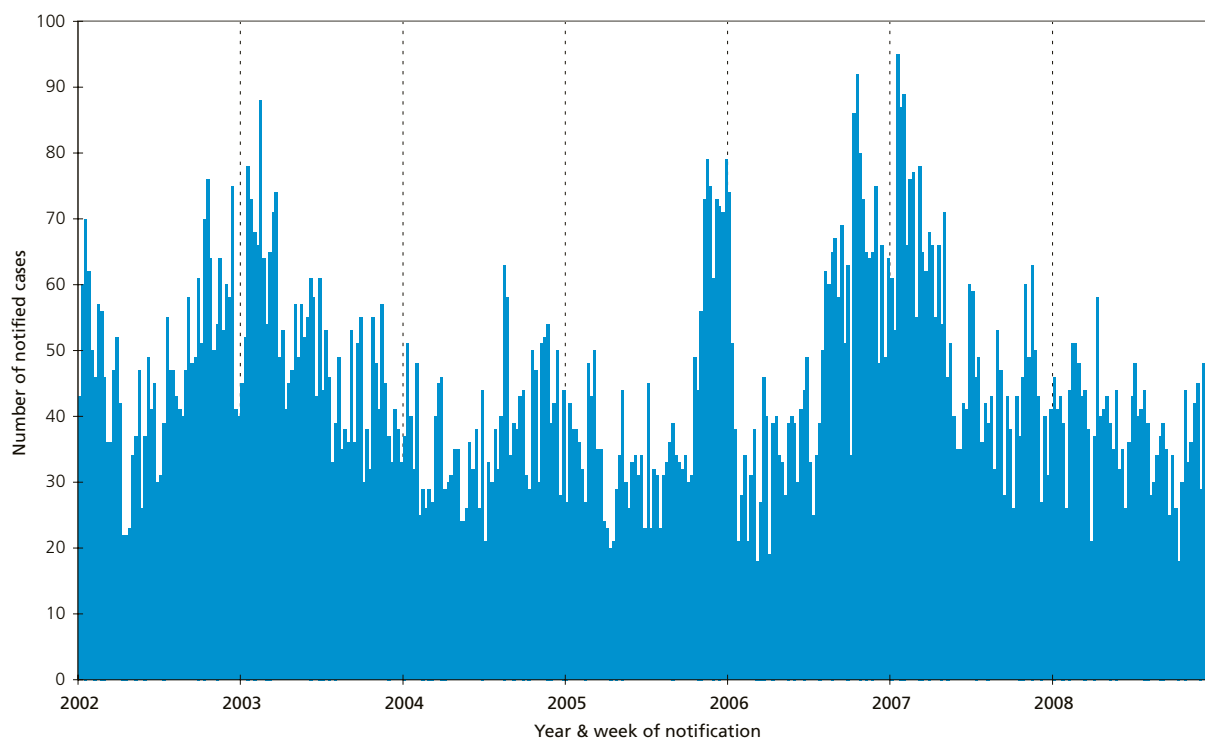


Figure 10: Notified cases of *Campylobacter* infection, by notification date, 1 Jan 2002 to 31 December 2008

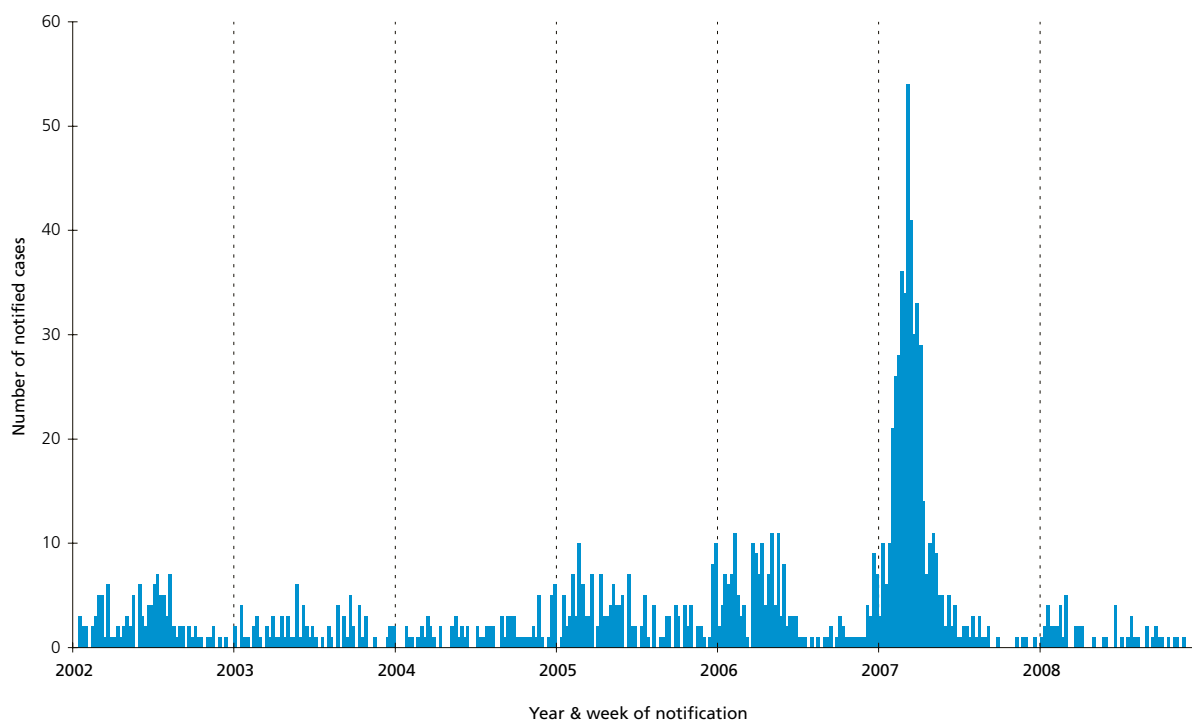


Figure 11: Notified cases of cryptosporidiosis, by notification date, 1 January 2002 to 31 December 2008

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is undertaken for all cases of hepatitis A infection and prophylaxis administered to close contacts in accordance with surveillance guidelines.

Paratyphoid

Three cases of paratyphoid were reported during the second half of 2008 in two males and one female aged 3–33 years. All cases had recently spent time in either India or Pakistan and became unwell soon after return to Australia. Public health action involved exclusion from specified activities and faecal clearance testing of cases and household contacts.

Rotavirus

In the latter half of 2008, 110 cases of rotavirus infection were notified. Cases comprised 60 males and 50 females aged from <1–95 years; most were less than 10 years of age (70%). Of 49 cases aged less than 2 years, 28 had been vaccinated.

Salmonellosis

Salmonella infection is usually the second most common notifiable gastrointestinal illness reported in South Australia and accounted for 19% of

gastrointestinal infections reported between July and December 2008, when 277 cases were reported, compared to 317 cases in the second half of 2007.

Cases comprised 131 males and 146 females, with an age range from <1–92 years. In contrast to campylobacteriosis, 28% of cases were aged <10 years (Figure 13). Cases resided in a range of rural and metropolitan locations across South Australia.

Laboratory tests characterise *Salmonella* isolates by serotype and phage type.

S. Enteritidis is rarely acquired in South Australia, and this serotype accounted for infection in 22 cases, 19 of whom had recently returned from a variety of overseas destinations. *S. Infantis* was responsible for 13 infections, these cases were scattered in place and time. Twelve cases were attributed to *S. Bovismorbificans*, including eight due to *S. Bovismorbificans* phage type 24; these cases varied in time of illness and resided in a range of locations across the state. Of nine cases caused by *S. Paratyphi b* var java, three had travelled overseas and another three had handled tropical fish in home aquariums, which is a recognised risk factor for this infection.

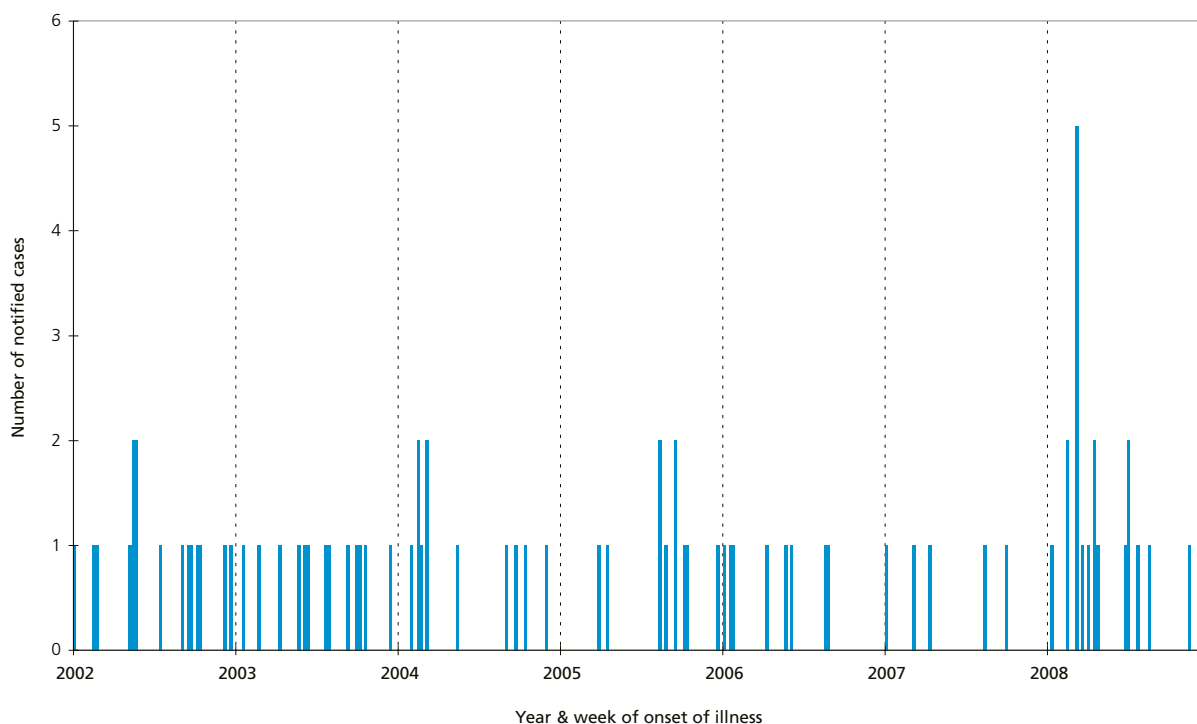


Figure 12: Notified cases of hepatitis A, by date of onset of illness, 1 January 2002 to 31 December 2008

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In the second half of 2008, among 148 cases attributed to infection by the *Salmonella* Typhimurium serotype, were 128 isolates classified into 17 different phage types. *S. Typhimurium* phage type 9 caused 34 cases and *S. Typhimurium* phage type 135a accounted for 25 cases; 17 cases each were due to *S. Typhimurium* phage type 193 and *S. Typhimurium* phage type 29, and nine cases to *S. Typhimurium* phage type 44.

Four outbreaks of *Salmonella* infection were detected and investigated in the second half of 2008; 16 cases due to *S. Typhimurium* phage type 9, a cluster of eight cases caused by *S. Typhimurium* phage type 193, and two groups of cases (nine in one, six in the other) due to *S. Typhimurium* phage type 29.

One cluster of 16 cases caused by *S. Typhimurium* phage type 9 was linked to consumption of sweet bakery items from specific premises. The investigation team included staff from Food Policy and Programs Branch and local government EHOs. Food safety advice was provided to the premises, and environmental samples collected. However, environmental testing failed to identify the source of infection. Descriptive data analysis suggested a common bakery as the

source and an analytical study was conducted to test this hypothesis. Statistical analysis of test data demonstrated an association between illness and consumption of sweet bakery items.

A cluster of eight community cases caused by *S. Typhimurium* phage type 193 was investigated, in this instance the source of illness was not identified.

An investigation was undertaken into a group of nine cases infected with *S. Typhimurium* phage type 29 that occurred within a two-week period and included four children aged <5 years. Food and environmental histories elicited several frequently consumed foods, but when examined in detail, no common source was identified.

A smaller cluster of six community cases of *S. Typhimurium* phage type 29 occurring in a one month period were investigated later in the year. Standard interviews did not identify any links between these cases.

Shiga toxin producing *Escherichia coli* (STEC)

Among the enterohaemorrhagic *Escherichia coli* (EHEC) bacterial strains are Shiga-toxin producing *E. coli* (STEC).

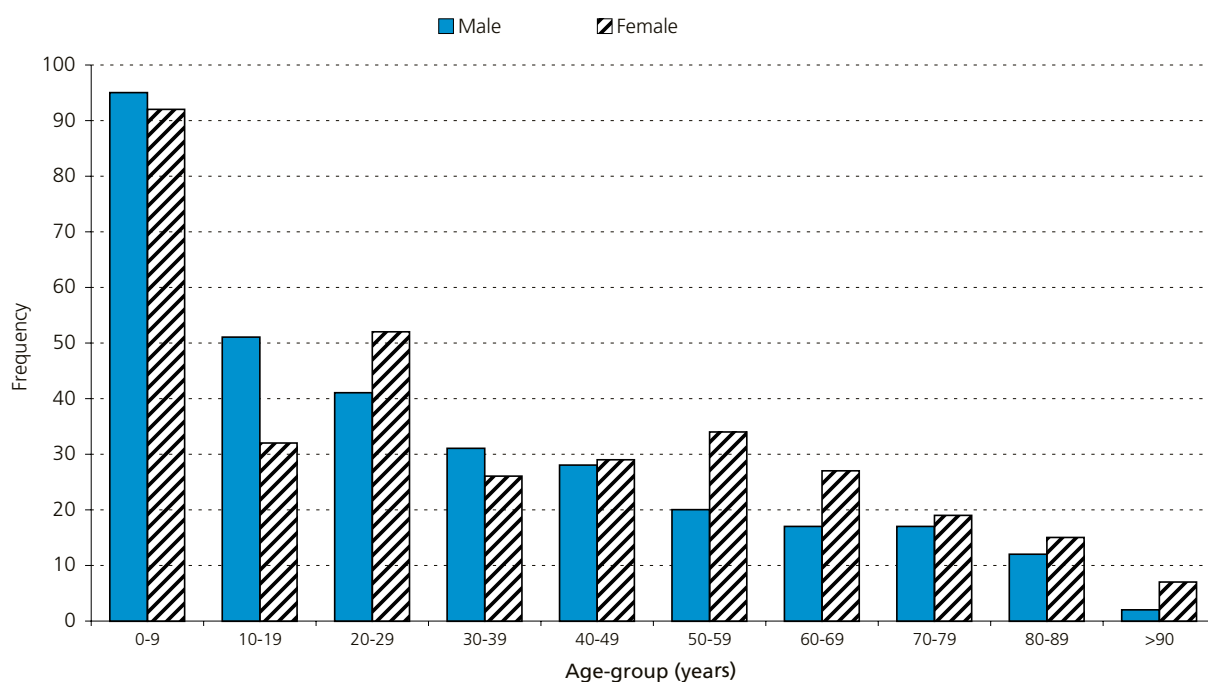


Figure 13: Notified cases of salmonellosis, by age and sex, 1 January to 31 December 2008.

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 and can occur as a result of other toxin producing bacterial infections as well.

In South Australia, faecal specimens from patients with bloody diarrhoea are screened for genes encoding STEC toxins in a central SA Pathology laboratory, enhancing prompt notification of such infections.

Between 1 July and 31 December 2008, one case of HUS and 16 cases of STEC infection were reported, compared to 12 for the same period in 2007 (Figure 14). STEC cases are interviewed with a standard questionnaire to collect food and environmental exposures. In the period under review, no links were found between cases. Several cases were clustered in time, but when the isolates were characterised by molecular analysis by SA Pathology (IMVS), the tests established that the cases were caused by different strains of STEC.

The age range of cases (13 males, 4 females) was <1–89 years and they were residents in a range of locations in rural and metropolitan SA. Four cases were admitted to hospital as a result of the infection and a further eight were tested in emergency departments of hospitals.

Shigellosis

Shigella bacteria cause gastrointestinal infections with symptoms including fever, diarrhoea, vomiting and stomach cramps. As with many infections, mild disease or infections without symptoms can also occur. *Shigella* are generally spread by person-to-person contact when contaminated objects or food are put in the mouth. Only a few bacteria are needed to cause an infection. *Shigella* bacteria do not infect animals, nor do they not survive very long outside the body. Although people with mild disease may recover quickly, appropriate antibiotic treatment kills *Shigella* bacteria; this also shortens the duration of illness and reduces the risk of spread to others.

Fifty-one shigellosis cases were reported in the second half of 2008, compared to 135 in the first half of the year. In contrast, a total of 59 cases was reported in 2007 (Figure 15).

In the second half of 2008, cases comprised 24 males and 27 females with an age range from <1–84 years; mean 29 years. Twelve cases acquired the infection overseas. At least 13 cases were admitted to hospital with this illness during the period.

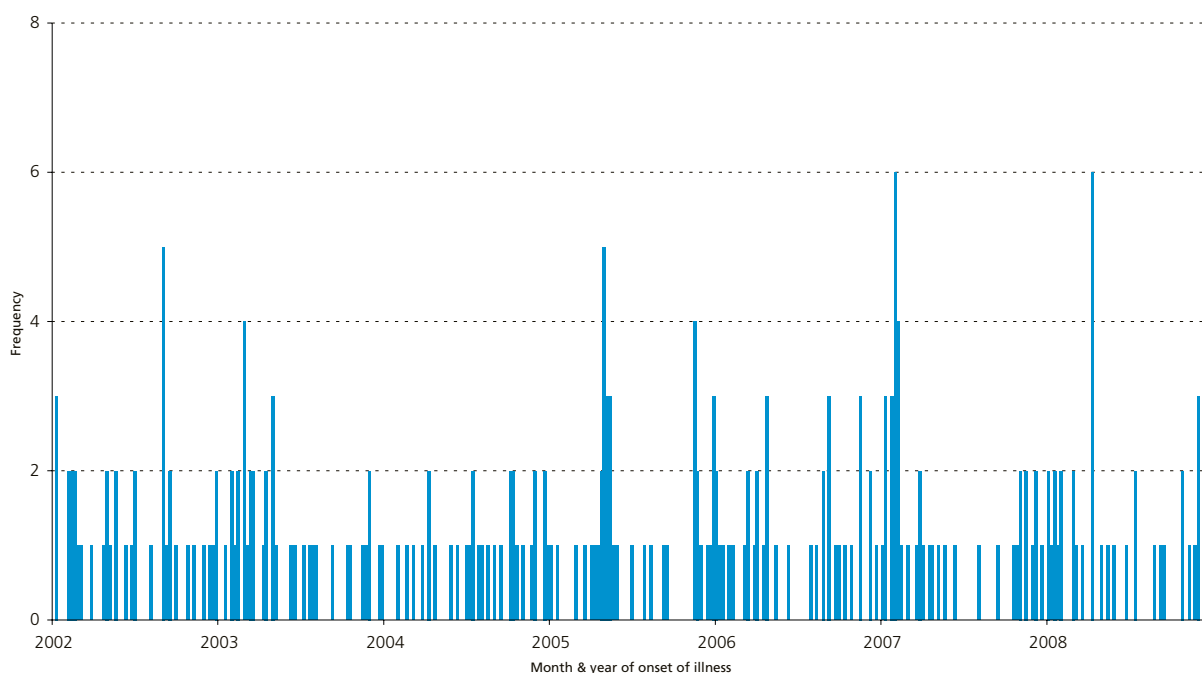


Figure 14: Notified cases of Shiga toxin-producing *E. coli* infection, by month of onset of illness, 1 January 2002 to 31 December 2008

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Two clusters of infection were investigated. One in metropolitan Adelaide caused by *Shigella flexneri* 6 was linked to an overseas acquired case. Another cluster of eight cases in rural SA, was due to *S. sonnei* a and involved extended family members.

Among the notifications were 18 reports of shigellosis in Indigenous Australians, ten of these were due to *Shigella sonnei* a, and eight to a mannitol negative variant of *S. flexneri* 4a.

Laboratory tests characterise *Shigella* isolates by strain and biotype; the latter is designated by a letter and sometimes a number. As in the preceding six months, the most common isolates causing shigellosis were *Shigella sonnei* a (26 cases), *S. flexneri* 4a (9 cases), other *S. flexneri* biotypes (7 cases) and *S. boydii* 4 (1 case). Eight infections were caused by *S. sonnei* g (Figure 16).

In response to the increased numbers, active surveillance continued during 2008, with all shigellosis cases referred to local government EHOs for information and advice about the infection.

Typhoid fever

Typhoid is caused by infection with *Salmonella* Typhi and most infections detected in South Australia are acquired overseas. 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. Infection with *S. Typhi* can result in severe disease and untreated typhoid fever has significant mortality.

One case of typhoid was notified in the second half of 2008 in a 24-year old male who had recently returned from India. Through contact tracing all household members were tested; none became infected.

Yersiniosis

Twelve cases of *Yersinia enterocolitica* infection were notified between July and December 2008, inclusive; consistent with 12 cases for the same period in 2007 (Figure 17). Cases comprised seven males and five females, with an age range of <1–54 years. Most cases resided in metropolitan Adelaide.

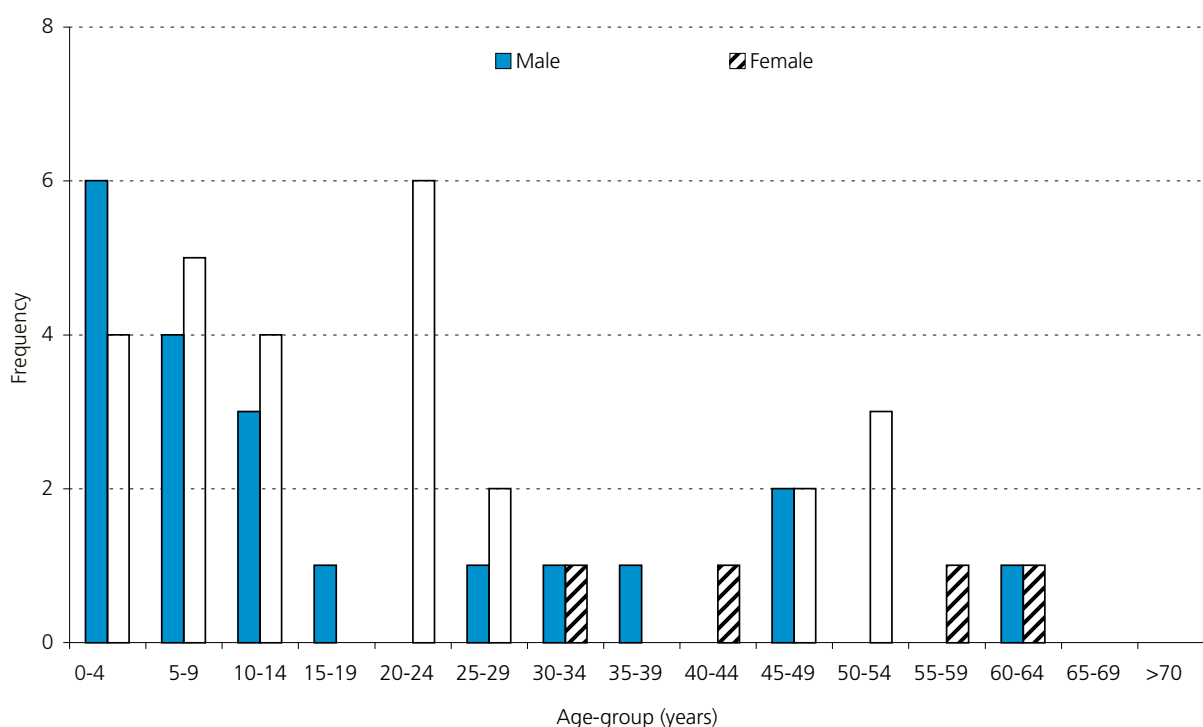


Figure 15: Notified cases of shigellosis, by isolate type and month, 1 January 2006 to 31 December 2008
 An increase in shigellosis since August, 2007 has been largely due to *Shigella sonnei* biotype a infection, until June 2008, when *S. flexneri* 4a was responsible for almost 50% of infections. This *Shigella* type last predominated early in 2006.

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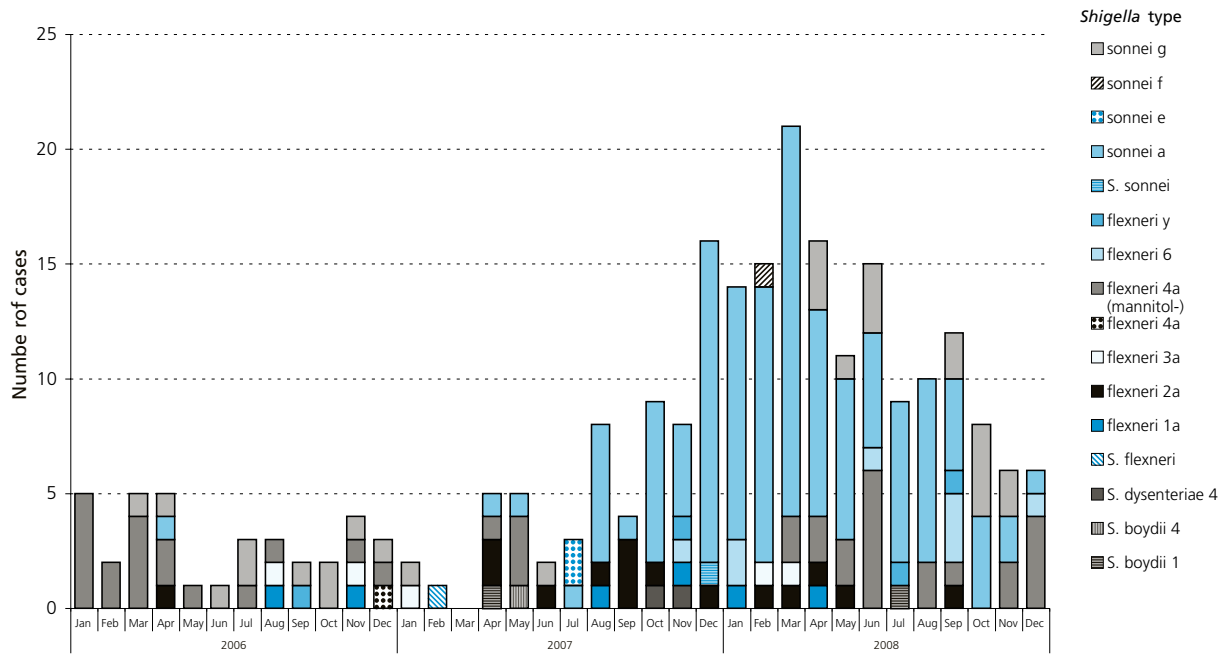


Figure 16: Notified cases of shigellosis, by age and sex, 1 January 2008 to 31 December 2008

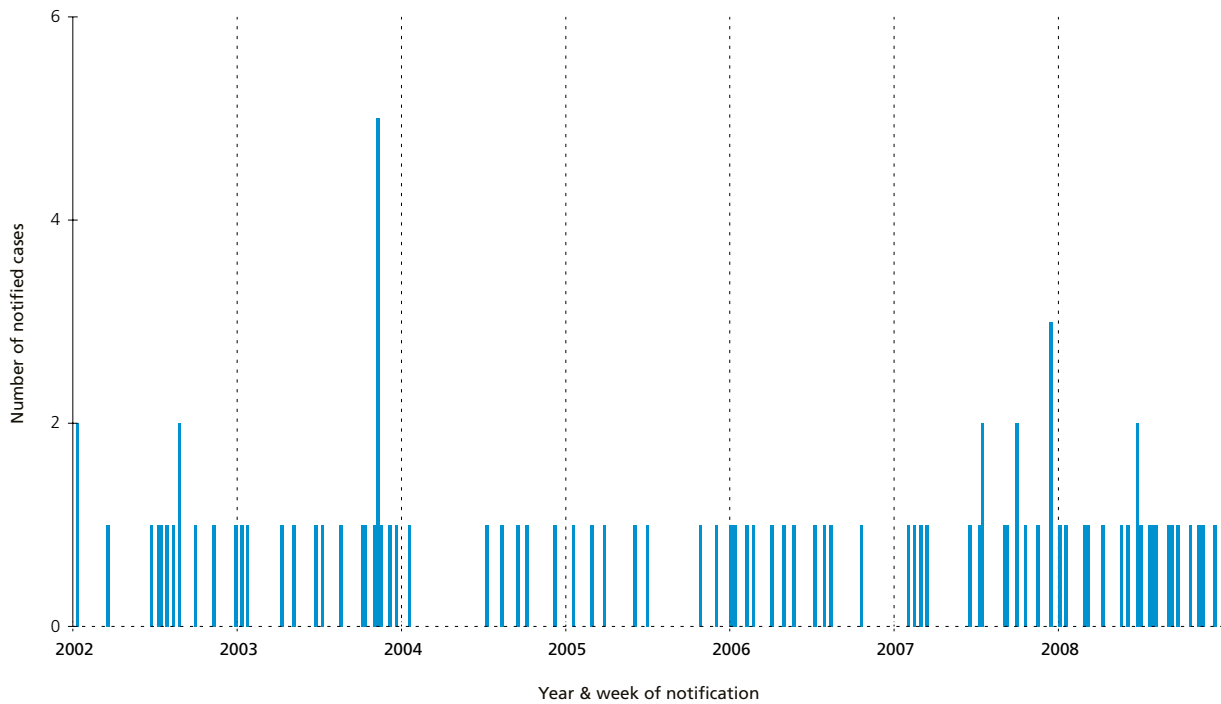


Figure 17: Notified cases of Yersinia infection, by notification date, 1 January 2002 to 31 December 2008

OTHER DISEASES

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 and associated with severe disease. Routine meningococcal C vaccination, implemented nationally in 2003, offered 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 also true of South Australia, where *N. meningitidis* serogroup B, for which there is no licensed vaccine, is now responsible for most disease.

Thirteen cases of invasive meningococcal disease were reported in the second half of 2008, consistent with 12 cases for the same period in 2007. Cases comprised 11 males and two females, with an age range of 1–42 years. Prompt contact tracing occurs with all cases and chemoprophylaxis is recommended for close contacts in accordance with national guidelines as well as vaccination where appropriate.

In the period under review, 12 infections were due to *N. meningitidis* serogroup B, and one was caused by *N. meningitidis* serogroup W-135 (Figure 18).

Legionellosis

Legionellosis is caused by infection with *Legionella* species of bacteria, resulting in respiratory illness. Eleven sporadic cases of legionellosis were reported during the second half of 2008, six from metropolitan South Australia and five from rural areas. All cases were due to infection by *Legionella longbeachae*.

Cases comprised seven males and four females; apart from a 31 year-old, cases were aged 50–88 years. Five had recent gardening as a risk for acquiring the infection. Ten cases were hospitalised, including one case who died as a result of the infection.

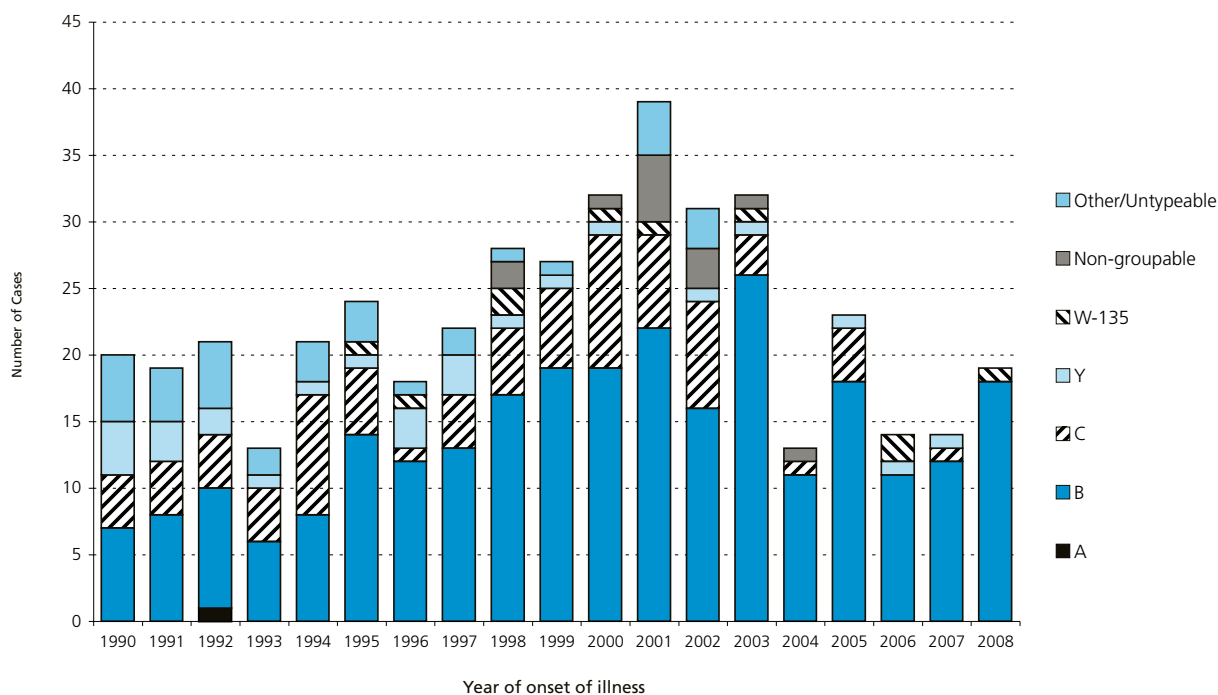


Figure 18: Notified cases of invasive meningococcal disease, by date of onset and serogroup, 1 January 1999 to 31 December 2008

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Atypical mycobacterial infections

CDCB investigated a number of cases with unusual skin abscesses caused by *Mycobacterium chelonae* in the first half of 2008.

Subsequently, in the latter half of the year, *Mycobacterium chelonae* was isolated from the biopsy samples of abscesses of five further cases. As with the earlier cases, all were associated with biomesotherapy 'treatment' by an unregulated practitioner at a common premise. Abscesses occurred at injection sites within days to weeks of biomesotherapy 'treatments'.

The investigation into these cases involved the CDCB and the Applied Environmental Health Branch of SA Health.

These data are provisional and subject to further revision.

Communicable Disease Control Branch Report

Notifiable diseases in South Australia 1 July to 31 December 2008 and annual comparisons 2002-2008

Disease	2002		2003		2004		2005		2006		2007		2008	
	Jul-Dec	Total	Jul-Dec	Total	Jul-Dec	Total	Jul-Dec	Total	Jul-Dec	Total	Jul-Dec	Total	Jul-Dec	Total
Anthrax	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barmah Forest virus infection	0	4	1	2	4	6	15	27	50	190	29	60	23	38
Botulism	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brucellosis	0	0	0	0	0	0	0	0	0	0	1	1	0	0
Campylobacteriosis	1384	2519	1115	2661	1079	1959	1238	2113	1562	2471	1124	2731	945	1984
Chikungunya ³	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Chlamydia (genital) ¹	863	1806	965	1993	1172	2427	1301	2706	1492	3127	1599	3480	1712	3622
Cholera	2	3	2	2	0	0	1	2	0	0	1	1	0	0
Creutzfeldt-Jakob disease	0	0	0	0	1	1	0	0	0	0	1	3	2	3
Crimean-Congo Haemorrhagic Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cryptosporidiosis	53	118	34	81	51	76	63	160	45	191	23	459	23	61
Dengue Fever	400	8	4	10	1	4	3	5	3	10	15	23	13	31
Diphtheria	0	0	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	0	0
Ebola Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gonorrhoea ¹	102	209	116	297	162	371	161	401	170	503	159	458	159	444
Haemophilus influenzae infection	5	9	6	11	9	17	8	13	6	8	12	18	3	11
Hepatitis A	8	16	6	13	5	12	7	9	2	9	2	5	6	19
Hepatitis B ¹	115	228	112	205	130	223	120	276	136	262	157	328	150	279
Hepatitis C ¹	385	825	422	824	351	777	358	721	361	694	325	611	229	509
HIV ¹	16	32	29	45	29	55	20	50	31	61	21	55	24	46
Hydatid disease	1	7	5	9	3	5	2	2	1	2	2	7	8	12
Influenza ³	149	289	291	311	47	72	215	273	77	87	266	280	470	484
Lassa Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Legionellosis	40	69	45	66	27	48	30	57	40	62	7	20	11	18
Leprosy	0	0	0	0	0	0	0	0	1	1	1	2	0	0
Leptospirosis	1	2	2	2	1	1	2	3	-	1	-	-	-	-
Listeriosis	2	2	0	1	2	3	5	6	3	5	6	7	0	1
Lyssavirus infection	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Malaria	7	19	15	28	11	20	19	43	20	34	11	24	10	17
Marburg Disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Measles	1	1	21	25	4	6	0	0	0	9	1	1	1	2
Meningococcal disease	15	31	22	32	4	13	21	23	9	18	12	16	13	19
Mumps		10		12		3		5		8		15		20
Mycobacterial Disease (non-Tuberculous) ²	28	49	24	48	37	68	36	69	27	54	32	68	22	53
Ornithosis	1	4	1	1	2	5	1	1	0	0	-	3	0	0
Paratyphoid Fever	1	3	0	1	2	6	2	6	0	4	3	4	3	5
Pertussis	171	570	114	233	813	926	757	1409	1333	2152	204	382	1016	1294
Plague	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pneumococcal disease	108	204	98	170	101	204	76	134	65	104	53	91	78	117
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Q Fever	19	29	4	13	26	36	6	20	7	16	13	24	5	16
Ross River virus infection	7	49	10	24	17	57	64	92	79	362	104	214	97	183
Rotavirus infection ³	-	-	-	-	-	-	-	-	-	-	-	-	110	132
Rubella	3	5	0	1	2	2	0	0	1	2	0	1	0	1
Salmonellosis	219	520	177	441	227	525	294	576	216	556	316	868	277	647
Severe Acute Respiratory Syndrome (SARS)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shigellosis	4	26	15	30	11	57	30	47	18	37	43	59	51	143
Smallpox	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shiga toxin producing E. coli / HUS / TTP	18	38	15	41	23	33	13	38	16	38	12	42	17	39
Suspected Food Poisoning	2	4	19	20	57	76	49	66	188	513	408	446	47	62
Syphilis ¹	8	33	9	21	6	14	8	13	17	43	22	50	22	49
Tetanus	0	0	0	0		2	0	0	0	0	0	0	0	0
Tuberculosis ²	26	47	24	47	34	60	25	46	30	72	25	59	21	59
Typhoid Fever	3	4	1	2	1	3	1	2	1	2	1	5	1	3
Varicella infection	530	1137	782	1231	759	1585	1080	1741	949	1682	893	1748	995	1783
Yellow Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yersiniosis	9	13	13	18	5	6	2	7	4	11	12	17	12	20

¹ Data collected by Sexually Transmitted Diseases Services ² Data collected by SA Tuberculosis Services ³ Notified since 1 May 2008

Statewide Cardiology Clinical Network: Special Announcement

Updated guidelines for preventing infective endocarditis prophylaxis in valvular heart disease

Further to new guidelines produced by the American Heart Association, Therapeutic Guidelines Limited recently liaised with the Heart Foundation and the Cardiac Society of Australia and New Zealand and set up a special cross-disciplinary expert group to update the topic in Therapeutic Guidelines, Prevention of Endocarditis. The Statewide Cardiology Clinical Network Steering Committee has approved this new guideline.

The update can be found online at:

<http://www.tg.com.au/uploads/PDFs/Prevention%20of%20endocarditis.pdf>.

The main changes to the guidelines are:

- > The list of cardiac conditions for which prophylaxis is recommended is much shorter and only includes conditions associated with the highest risk of adverse outcomes from endocarditis.
- > The list of procedures for which endocarditis prophylaxis should be given is more precise.

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