

**CHO October 3 A Population Perspective on Chronic Disease**

Presenters and their subjects:

“Trends in Asthma and Allergic Disease with Special Reference to the Australian Capital Territory”

Professor Anne-Louise Ponsonby, Murdoch Children’s Research Institute, Menzies Research Institute, Australian National University Medical School.

and

“Chronic Disease: Setting the Policy Context.”

Mr Ross O’Donoughue, Director, Health Improvement Branch, ACT Health.

**Ross O’Donoughue**

I am going to try and suggest what population health brings to the table and what we have to offer in terms of a systematic and programmatic approach to the prevention and management of chronic disease. As well as population health talking about populations, really we are about prevention – and I often simplify our title down to “Prevention ‘R’ us” – we are about promoting health and preventing illness. Population health develops its understanding of a problem through research and surveillance, finding evidence for good interventions to respond to that problem, and then communicates all that information to stakeholders and decision makers in the community – all of which constitutes a feedback loop. So we try to understand the problem, we make some intervention, we evaluate that intervention and then we see what the outcomes are - and we are talking to everybody all the time about how that is all going.

The World Health Report in 2002, called Reducing Risks, Promoting Healthy Life, was based on a very extensive technical report. It was fairly controversial. It was attacked by some sectors, including the sugar industry, and such responses delayed the implementation of the global strategy that I will refer to later. The 2002 World Health Report documents a global shift in the burden of disease towards non-communicable diseases. Our old foes were the infectious diseases. We spent 100 years battling our way away from infectious disease only to be challenged by a new form of disease that is non-communicable and is largely driven by the behavioural antecedent risk factors of poor diet, physical inactivity and tobacco smoking.

Australia has done very well on tobacco smoking so it is probably not so high on our priority list, but certainly poor diet and physical activity are right up there. The World Health Report said these risks are amenable to prevention and that individuals in a country like Australia

have the potential to lose or gain five to seven years of life expectancy through a relatively moderate set of investments now. So we have actually gained about 40 years of life expectancy over the last 40 years thanks to lifting ourselves away from infectious diseases. But we now face an imminent risk over the next 30 or 40 years of losing seven years of average life expectancy. Further, this report also had a strong health economics component which said: 'It looks like these interventions are probably going to be cost effective. If we did invest now they would probably pay us back in the long run.'

The report led to the Global Strategy on Diet, Physical Activity and Health, which has been given the horrible acronym DPAS. The strategy was endorsed by the World Health Assembly in May 2004 and Australia was a signatory. In fact, Australia was given some credit for getting it through the World Health Assembly in the face of opposition from industry and other stakeholders.

The strategy calls for an inter-sectoral approach, which means it is an issue for whole-of-government, the private sector and NGOs. It also requires all member states to put in place national policies, plans and guidelines. It focuses on environments that support healthy eating and physical activity so it does not just talk about people's behaviour. It says people's behaviours happen in an environment that is either supportive or non-supportive, and we need to work on that environment in order to help people make healthy choices. It also asks us to take an across-the-life-course approach and work in particular settings like the workplace or in schools. Lastly it asks us to build prevention across the continuum of care to do more preventive work in our health services.

DPAS says governments have a primary steering and stewardship role and that they have a central role in cooperation with other stakeholders to create an environment that empowers and encourages behavioural changes towards healthy diets and increased physical activity. DPAS gives a particular role to health ministries to coordinate and facilitate other ministries and agencies. This is in contrast to the position that some governments take, which is that government has a small role to play and it is all about individual choice. I believe government does have stewardship of the policy settings and if the market fails it is the government's responsibility to act.

In terms of the dietary goals that the global strategy DPAS sets us, we are supposed to try to achieve energy balance as a precursor to healthy weight – it's the old 'energy in, energy out' equation. In order to do that we need to limit the energy we take from total fats, move away from saturated fats towards unsaturated fats and move towards the elimination of trans-fatty acids. The strategy also asks us to increase our consumption of fruit and vegetables, legumes, whole grains and nuts - notwithstanding the anaphylaxis problems that Anne Louise Ponsonby has alluded to - and to limit the intake of free sugars and salt. This is not rocket science. It's pretty much exactly in accord with Australian dietary guidelines. Basically, though, it affirms the evidence base for the sorts of things we need to strive towards.

In terms of physical activity we should aim for at least 30 minutes of moderate intensity physical activity on most days to reduce our risk of chronic disease. If we want to lose weight we probably have to do more activity than that, while muscle strengthening and balance training will reduce our risk of falls and improve our functional status. Again, these are pretty much the same as the Australian Physical Activity guidelines.

Lastly, the surveillance part of the DPAS Strategy sensibly says we should be looking at population weight, height and the burden of illness. We should have surveillance of behaviours such as dietary habits and physical activity and, wherever possible, we should standardise data collection so there can be meaningful comparisons between jurisdictions.

In 2006, the WHO came up with an implementation framework that is intended as a checklist to see how a particular jurisdiction is doing in implementing the global strategy. The framework provides a suite of indicators for physical activity, which take innovative approaches such as asking what percentage of the population has access to safe walking options. They ask how many kilometres of cycle paths per square kilometre are there in your neck of the woods? Or, how many square kilometres of car-free zones are there? I do not think the particular metrics are that important. What is interesting is that people are grappling with what the metrics are that tell us whether we have a supportive environment for physical activity or not. It will be interesting to see how Canberra compares with other jurisdictions. We will probably fare pretty well on a number of them. But we are also a very car friendly city so it would be interesting to work our way through these metrics.

I will talk a little bit about national guidelines now. There were the global landmark guidelines of recent years and a whole stack of NHMRC or other evidence-based guidelines have been released over the last five years or so. We have guidelines on the diagnosis and treatment of obesity, we have evidence-based guidelines on diabetes and cardiovascular disease, their prevention and management, we have dietary guidelines for children, adolescents and adults, we have physical activity guidelines for Australians and, as far back as 1996, the NHMRC were publishing major strategy documents on how we should respond to the obesity epidemic. So I don't think there is any shortage on the national plans and guidelines side of the armentarium. We have those in spades. The challenge now is for implementation and funding to see these things translate into action.

In 2003 the Australian Health Ministers' Council endorsed Healthy Weight 2008, which is a product of the National Obesity Task Force and is a national action plan for children and families. It has some components in common with the global strategy in that it focuses on supportive environments, it looks at particular settings such as schools and neighbourhoods and it takes an inter-sectoral approach. I guess the only thing it lacks is a major funding commitment by all levels of government for its meaningful implementation.

More recently, in 2006, the Council of Australian Governments announced the Australian Better Health Initiative. It is a \$500 million national initiative over four years, focusing on the prevention of chronic disease. It uses some social marketing and programs and community based strategies and it aims to integrate prevention across the continuum of care. It picks up on some of the themes of the global strategy and it introduces a new MBS funded health check for 45-49 year olds available at your general practitioner. This should enable people at risk or people with undiagnosed illness to be identified for early intervention and once they are identified to be offered some sort of support in terms of modifying their risk.

Now it's time to talk about the ACT policy context. First of all there is an overarching population health strategy document, Public Health in the ACT 2004-2008, which will very soon see a successor document. We have a current Primary Health Care Strategy with the ACT Division of General Practice we have a draft ACT Chronic Disease Strategy and a draft ACT Diabetes Services Plan. The draft ACT Chronic Disease Strategy is out for public consultation as we speak. The Diabetes Services Plan is about to go out for public

consultation and the last element is a new one that I am going to discuss now – the Chronic Disease Management Program.

I have a model of the chronic disease strategy but it's a bit hard to read on this slide. However, the intent was to map some of the strategic activities against each other. It shows the elements of the ACT Chronic Disease Strategy and how they fit and relate within an overall framework. The activities go from prevention and risk reduction, early detection and treatment, integration and continuity of prevention and care and self-management through to research and surveillance - so they are kind of a continuum. They mirror the National Chronic Disease Strategy and you would probably see similar elements in any Chronic Disease Strategy anywhere in the world. What we tried to do was to map the elements of the Australian Better Health Initiative, show how they fit under that strategy and where ongoing activity fits, and then show what the potential role of the non-government sector might be in that sort of world.

I am going to talk mainly about the new ACT Chronic Disease Management Program. I am going to suggest it is the beginning of a programmatic or a systematic approach to what population health brings to the table. It is interesting to match some of these strategies against a classic chronic care model created by Wagner et al. in the United States. Their model really takes out the early detection and prevention elements and shows you that these days people are thinking a lot more about having an informed community, an informed population of people at risk of chronic disease and engaging them more in the self-management of their disease. In terms of the health system approach people are thinking a lot more about having information systems and decision support systems that will prompt and promote the optimal care of patients. So, to improve our performance in caring for patients we have to provide clinicians with appropriate IT systems and supports.

Type 2 Diabetes is an example that shows we already have a lot of data to help us understand the nature of the problem. Data from the Australian Diabetes, Obesity and Lifestyle study, AusDiab, which is a longitudinal study of diabetes, indicates that 7.4% of adult Australians have diabetes, but only half of them know about it. It means a large cohort of people have diabetes or are at risk of diabetes out there in the population. An additional group of adult Australians, 16% or thereabouts, are at increased risk of diabetes because they are already beginning to show impaired glucose metabolism. They have either impaired fasting glycaemia or impaired glucose tolerance; if you have got impaired glucose tolerance you are have something like a six-fold greater risk of getting diabetes in the next five years or so. We know that it is costing us a lot of money. A very conservative costing study from 2003 put it at \$2.2 billion a year.

So, what is the potential for preventing it, instead of just waiting for this burden of illness to overtake us? Well, there are two great studies published in the New England Journal of Medicine, one in 2001 from a Finnish group and a second, almost immediately afterwards, using a very similar methodology but with a larger sample size, from an American group. Remarkably, they both achieved exactly the same result. They showed a 58% reduction in the incidence of diabetes in people with impaired glucose tolerance who undertook a lifestyle modification program. The American study had a drug arm in addition to a control arm and an intervention arm using lifestyle support. The drug intervention got a 30% reduction in risk, which was only half as effective as the lifestyle modification program.

The response around the world was a bit like 'Oh yeah, that's okay, but it's not practical, we couldn't implement this, it's all too hard'. So what did the Finnish study actually ask people to do? Well, they asked their intervention group to reduce their initial weight by 5%. The average weight loss was about 4 kg. These were obese people, mainly women, and older women at that, and they were asked to lose about 4 kg. They were also asked to reduce their total fat intake to less than 30% of total energy consumed and to reduce their saturated fats to less than 10%, to increase their fibre intake and to do some aerobic and muscle strengthening exercise on most days. In other words, in addition to the Australian dietary guidelines and physical activity guidelines, they were asked to lose a bit of weight. Otherwise this is completely standard advice, what we are recommending all Australians do now. Find 30 minutes most days to do some moderate exercise, don't eat so much fat and eat more fruit and vegetables.

The intervention they used involved giving these people seven one-on-one counselling sessions with a dietitian in the first twelve months. Then they gave them one session every three months for the next two years. They each had an individually tailored diet and they had an individually designed exercise program. In reality, the study just signed the people up to a gym so it wasn't too flash in terms of an exercise program. They just said, join a gym and do your exercise there.

The study followed up the people over 10-12 years and the differences are still significant and still the same. The authors told me when I met them in Sydney that they could have stopped the study after the first year; they didn't look at the data until the second year when they stopped the study because the differences were already so significant. Basically here was a group of people who had a dramatic early effect in terms of losing weight and improving their risk and it was sustained long after the study stopped. The study stopped after two years but these people still had a significant and sustained reduction in weight of 4 kg or thereabouts six years, and up to eight years, after the study.

Now, if we took the ACT population and we used the AusDiab calculation of risk, we would generate some interesting numbers. Current NHMRC evidence-based guidelines say we should probably consider screening all people aged 55 to 74 for diabetes, plus we should also screen those people 45-54 with either obesity and/or hypertension and/or a family history of diabetes. It means there are about 70,000 Canberrans who fit into that sort of category. If we offer them a screening - and we are doing that already in a sense because for the 45-49 year olds there is a screen available at their GP - and we assume that only half of them are going to bother to turn up, then we generate some interesting numbers. We will find about 1200-1300 newly diagnosed diabetics. We will also find about 5000 people who we think would benefit from the type of lifestyle modification program that the Finns used in their control trial. And then there would be about 30,000 people who, despite being in the risk category because they are overweight, or they have a family history, are looking fine in terms of their pathology at the moment. But we should advise them to lose some weight and do some more physical activity and rescreen them again in three years time.

If we translate that Finnish and American evidence into a population health approach, we might expect to see a reduction in complications for those newly diagnosed diabetics who are getting treated earlier, and we might expect to see a reduction in the incidence of new cases of diabetes from those people who are currently at risk, but probably don't know it.

We are building a new healthy lifestyle website over the next few months and there is a direct e-mail recruitment strategy which we propose to deploy. We propose, and it has been funded in the last ACT budget, to direct mail to all Canberrans aged between 45 and 49 ask them to measure their waist circumference at home. If they are at risk of chronic disease like diabetes, we want to encourage them to take up the opportunity of the 45-49 health check at their GP. At roughly the same time this is all happening, and we are hoping it will happen in the next half of next year, there will be a national social marketing campaign from the Australian Better Health Initiative. This campaign will also be exhorting people to measure their waist circumference at home and consider eating more fruit and vegies, taking up some physical activity and/or going and getting a health check at their doctor if they feel that they need some further advice.

So we will be creating a population register of Canberrans aged between 45 and 49 in the same way we have done for women over 50 for our breast screen strategy. We will be asking them to take a health check and we will be able to look back in time to see how many people have taken up the opportunity. We will also see perhaps how many have gone on to take up a lifestyle modification program and how many been able to sustain it and how many have been able to reduce their risk. It is a programmatic, systematic population approach for implementing the evidence that we have from those randomised control trials and it links into the opportunities that the Australian Better Health Initiative provide.

We would also like to create a patient care register for three chronic diseases of interest: heart failure, chronic obstructive pulmonary disease and diabetes. We would like to follow those patients' care over time and with our clinical colleagues identify what all the clinical endpoints are that they should receive for optimal care and try to make sure that as many of them as possible achieve that optimal care. We would like to take a population health register approach to optimising the care of our current patients and ideally extend that across to the patients of our GP colleagues as well. We hold the records of our current patients so we can monitor their care. We see it as our responsibility to adopt a systematic approach to implementing that goal. It will generate patient status reports and we will have some benchmarks on which we can improve.

When we had low childhood immunisation rates in Australia we introduced a population register of all children 0-5 and we followed over time what the immunisation coverage rates were. We moved from – some people say 56% coverage, some say 70% coverage - to over 90% coverage, and that was one of the strategies that we used. We also used social marketing, we made a much more supportive environment around GPs and other service providers to provide vaccines and we funded a lot of vaccine. But following individuals over time in a population cohort sense was one of the most important strategies that we deployed. I think we should be using a similar approach to chronic diseases.

I have been trying to push the thesis to you that chronic diseases do threaten not only our health system, but our economy and our lifestyle. They are however amenable to prevention. We also largely know what we need to do, but working on those supportive environments and finding the will to do it remain our challenges.

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