

**The Oxford  
Health Alliance**



**Australian Health Policy Institute  
& Oxford Health Alliance Seminar Series**

# 2006 Monograph

**Seminar 1:  
Policy, Health &  
Sustainability**

**Seminar 2:  
Occupational Health  
& Safety**

**Seminar 3:  
New Models of  
Primary Prevention**

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## Oxford Health Alliance Seminar Series 2006

### Introduction

The 2006 Oxford Health Alliance Seminar Series documented in this publication is a product of the recently established partnership between the academic network of the Oxford Health Alliance (OxHA) and the Australian Health Policy Institute (AHPI). This partnership commits AHPI to foster and undertake activities to promote action and to assist success in the 'race against time' to combat chronic diseases globally.

In keeping with the international basis of the OxHA and the breadth of issues with bearing on Australian health policy, the scope of the Series locates health interventions addressing the risk of chronic disease within a broad and holistic framework. Health policy and practice has been approached in the Seminar Series as socially determined object acting through history, across continents and within diverse circumstances and populations. The contributions of the Series therefore raise many issues, all of which are subject to a range of interpretations from which debate will be a natural and, indeed, welcome outcome.

The creation and dissemination of debates arising from the projection of research implications onto the political sphere are a vital aspect of vigorous health policy making. The Australia Health Policy Institute takes up this work in its commitment to engender and support informed debate around issues presenting to health policy makers and the Australian community. As important is the linkage of such debate to the networks and organs of civil society. To this end, AHPI has developed and sustained an important constituency of influential people in the health system that have a commitment to the concept of an independent forum of health policy debate, and regularly attend the seminars. Those who attend Institute events are influential in their own circles, and carry the debate into their own communities.

Despite the range of issues, levels of analysis and professional background informing the presentations of the 2006 Seminar Series, there is significant congruence in the types of questions asked and evidence cited. The seminar topics have been sequenced as a coherent narrative of collaborative scientific practice – following a general movement from problem (Seminar 1), to case study (Seminar 2) and conclusion/discussion of models and method (Seminar 3).

**Seminar 1: 'Policy responses to contemporary health issues: sustainability'**, explores how health researchers, policy makers and practitioners may engage with one of the greatest threats to health and wellbeing of all time, the one posed by potential global environment crisis. **Emeritus Professor Bob Douglas**, Chair of Australia 21, prioritises participatory culture as the key to the transition to sustainable future. **Professor Tony McMichael**, Director, National Centre for Epidemiology and Population Health at The Australian National University, lays out the evidence for an impending environmental catastrophe, and suggests that the estimated health outcomes associated with such a disaster have great heuristic potential at both micro and macro policy levels. **Professor Stephen Leeder**, Director, Australian Health Policy Institute and co-director of the Menzies Centre for Health Policy at the University of Sydney, identifies the complexity of questions around sustainability, calls for precision in the identification of problems to be considered, and lists some issues of immediate interest to sustainable health initiatives to illustrate. The seminar in total properly extends the reach of public health discourse, mobilising it as an elemental component of the dynamic discourse on sustainability currently occupying centre stage in the Australian political sphere.

**Seminar 2: 'Occupational Health & Safety'**, serves as an audit of the aspect of health policy and practice addressing the workplace setting, as seen variously through the perspective of an union OH&S professional; an OH&S educator; a corporate health and wellbeing planner, and a union organiser. **Dr Yossi Berger**, National Occupational Health and Safety Unit Director, The Australian Workers' Union, describes the gap between Occupational Health and Safety discourse and reality that he confronts in his practice. **Dr Tim Driscoll**, Senior Lecturer, Epidemiology, Occupational Medicine, Public Health, Injury Prevention and Control, University of Sydney, interrogates the role of the state, asking 'What progress has been made in respect to Occupational Health and Safety research and education over the last 30 years?' **Dr Kim Hobbs**, Well-being Services and Health Benefits Director at IBM Asia

Pacific, reports on the efficacy and rationale of IBM's health and wellbeing program, providing a model of corporate responsibility to complete the tripartite image of current work in the field. **Mr Malcolm Tulloch**, NSW State Organiser for the Construction, Forestry & Energy Union, offers a worker's perspective of the effects of workplace power relations on the implementation of OH&S standards. The contributions thus both survey a concrete aspect of health policy implementation and jointly provide an example of discourse derived from stakeholder collaboration, itself an important policy artefact.

**Seminar 3: 'New models of primary prevention: how well do they translate into action?'**, reviews a number of new models of health promotion being developed to address overweight and obesity, with implications for the discussions arising from the first two seminars. **Professor Boyd Swinburn**, Chair in Population Health, School of Exercise & Nutrition Sciences at Deakin University, discusses new developments in the application of whole-of-community projects, with reference to the experience of a suite of interventions delivered in Colac, Victoria. He also introduces a tool (Assessing Cost Effectiveness - ACE) recently developed to capture the cost-benefits of dissimilar population health interventions. **Emeritus Professor Stewart Truswell**, Chairman, Nutrition Research Foundation at the University of Sydney, reviews the continuing importance of pharmaceutical products in primary prevention, considering in particular the case of a proposed 'polypill' designed to address risk of cardiovascular disease in developing countries. **Professor Ian Caterson**, Boden Professor of Human Nutrition at the University of Sydney puts the case for policy for sustained interventions to reduce fat intake and increased exercise of the population. **Mr Ross O'Donoghue**, Director, Health Improvement, ACT Health, outlines the program of the Australian Better Health Initiative, a series of initiatives supported by a \$500 million budget over five years. Of special interest is a proposed program of the Initiative to support the targeted use of allied health professionals to address the risk of cardiovascular disease for people over 45 years of age.

Consistent with the aim of the Series, a considerable portion of the seminar record is given over to discussion between the audience and panel of presenters and discussants. At the close of each seminar discussion the individual presenters were asked to recommend what they see as the intervention with greatest potential in relation to their seminar topic. These recommendations are reviewed, in conjunction with a review of the Series predominant themes, in the monograph's summary.

This monograph was produced to document the Series in an accessible and convenient format and does not pretend to capture the full depth of ideas and information presented. The individual presentations of the 2006 Series were supported in many cases by power point presentations, many of which contained detailed information, tables, graphs and references. Readers wishing to explore the presentations in more detail are referred to the Seminar Series records available on the Australian Health Policy Institute's website: <http://www.ahpi.health.usyd.edu.au/news/2006.php>

## The Speakers

**Emeritus Professor Bob Douglas, AO** graduated in medicine at the University of Adelaide in 1959. After working as an academic in public health and as Dean of The Medical School in Adelaide, he became the first Director of The National Centre for Epidemiology and Population Health at The Australian National University. He is a former President of The Public Health Association of Australia and of The Australasian Epidemiological Association. He has worked with others to establish a new organization, Australia 21, [www.australia21.org.au](http://www.australia21.org.au) which is supporting networks of scholars and thinkers to consider some of the challenges ahead.

**Professor Tony McMichael** is the director of the National Centre for Epidemiology and Population Health at the Australian National University. He has chaired several high level international committees on environment and ecosystem assessment, and has been a frequent adviser to WHO and the UN. He is also director of the newly established Climate Institute of Australia and is the co-chair of the Project on Global Environment Change and Health as part of the National University science partnership.

**Professor Stephen Leeder, AO** is professor of Public Health and Community Medicine at the University of Sydney. He was Dean of the medical faculty between 1996 and 2002. His research interests as a clinical epidemiologist include asthma and cardiovascular disease. In 2003-04, Professor Leeder worked at Columbia University assessing the impending effects of heart disease and stroke on developing economies. Professor Leeder is currently Director of the Australian Health Policy Institute at the University of Sydney and Co-director of the Menzies Centre for Public Health Policy a collaborative agreement between The Australian National University and the University of Sydney.

**Dr Yossi Berger** *MAPS*, is national OHS Officer of The Australian Workers' Union. He was a Research Officer at the Australian Council of Trade Unions/Victorian Trades Hall Council Occupational Health and Safety Unit for five years and its Director for three of these. He holds a BSc (HONS) from Monash University and a PhD (psychology) from Latrobe University and is a State-registered psychologist.

**Dr Tim Driscoll** is a specialist in occupational medicine and public health medicine, being a member of the Australasian Faculties of Occupational Medicine and Public Health Medicine. He holds a part time senior lecturer position in epidemiology in the School of Public Health at the University of Sydney works part time as an independent consultant in occupational health and public health.

**Dr Kim Hobbs** is Well-being Services and Health Benefits Director, IBM Asia Pacific, specialising in the design and delivery of those services. She is a Fellow of the Faculty of Occupational Medicine and Public Health, University of Sydney and a member of the Royal Australasian College of Occupational Physicians. She has trained in OH&S auditing and worked in the oil and information technology industries for many years.

**Mr Malcolm Tulloch** has worked as an Organiser for Trade Unions in the Communications & Construction Industries since 1995. In 2002 Mal commenced with the Construction Forestry Mining & Energy Union, Construction & General Division. Mal is a former Mayor of Holroyd City in Western Sydney and has been a local government Councillor for the past 11 years.

**Professor Boyd Swinburn** is Chair in Population Health, School of Exercise & Nutrition Sciences, Deakin University and Director of the WHO Collaboration on Obesity. He trained as an endocrinologist in New Zealand and served in that country as the Medical Director of the

National Heart Foundation. He is currently involved in research on obesity in children and adolescents through projects administered in Victoria, New Zealand, Fiji and Tonga.

**Emeritus Professor Stewart Truswell AO** Stewart is currently Chairman of the Nutrition Research Foundation at the University of Sydney. Stewart has over 500 publications on many aspects of human nutrition, including major textbooks. His research interests include interactions of drugs and nutrition, food habits, dietary goals and guidelines, diet and cancer, evidence-based nutrition and nutrition for older people.

**Professor Ian Caterson** is currently Boden Professor of Human Nutrition at the University of Sydney and has held that position since 1997. He graduated in Medicine with First Class Honours from the University of Sydney and holds the degrees of BSc(Med) with First Class Honours and doctor of Philosophy from that University. His research interests have been in insulin resistance and the causes and treatment of obesity. He is currently regional vice-president (Asia-Oceania) for the International Association for the Study of Obesity.

**Mr Ross O'Donahue** has worked in health improvement and health protection in the government, non-government and community sectors at state and federal levels. His policy analysis work has examined HIV/AIDS, infection control and sexual health. He is the Director of Improvement for ACT Health and is actively involved in the prevention of non-communicable disease, including the Australian Better Health Initiative.

## **Chairs**

**Associate Professor Ruth Colagiuri** is an associate professor in the School of Public Health, and joined the Australian Health Policy Institute at the University of Sydney in June 2005 to establish and direct The Diabetes Unit - a focus for policies and strategies for improving diabetes prevention and care and to co-establish an Oxford Health Alliance presence in the Asia-Pacific Region. Ruth is a member of the Diabetes Expert Advisory Group of the Australian Department of Health and Ageing and Chairs the International Diabetes Federation's (IDF) global Task Force on National Diabetes Policy and Action, and in 2002 was awarded life membership of ADEA for her contribution to diabetes education.

**Professor Bruce Armstrong** is Professor of Public Health and Medical Foundation Fellow at the University of Sydney. He is Director of Research for the Sydney Cancer Centre. An international authority on the causes and prevention of skin cancers and melanoma, he has also conducted extensive research of other types of cancer, and of high blood pressure and heart disease.

**Dr Rob Moodie** is Chief Executive Officer, VicHealth (Victorian Health Promotion Foundation) and Chair of the Premiers' Drug Prevention Council of Victoria. Dr Moodie has studied Public Health at Harvard, worked for Medicine Sans Frontieres, Save the Children Fund and the WHO Joint Project on HIV and AIDS in Uganda, Cameroon and Geneva. He has authored three books, including *Hands On Health Promotion*.

# Seminar 1: Policy Responses to Contemporary Health Issues: Sustainability

## ***The human race: extinction or a sustainable future?***

*Emeritus Professor Bob Douglas, AO  
Chair, Australia 21*

In his recent book, *Collapse*, Gerard Diamond argues that societies which have historically survived serious environmental challenge are those which have been able to adjust their cultural norms to the new reality. The reality in 2006 is that planet earth is now becoming, as a result of human actions, unable to support the human numbers that are already here and will arrive in coming decades. Our society is on an unsustainable trajectory. Can Australian culture be transformed in a way that will address the intertwined social and environmental threats that now confront us, before they overwhelm us?

Six interlinked global threats now loom as obstacles to the health and future of the world. They are climate change, the operation of the current economic model, ecosystem destruction, global inequity, peak oil and the risk of nuclear conflagration. All are global in their scope and all require collaborative action across national borders. Constructive global action in the next two decades will be absolutely seminal to the survival of humanity and we cannot afford to be paralysed by fear of lesser order problems such as terrorism, rising interest rates, pandemic flu, the leadership of the ALP, or whether Alexander Downer lied over the AWB affair. Yet these lesser order problems are choking out urgent community consideration of the long-term health and survivability of the human family.

In spite of a gloomy prognosis, it is possible that in dealing constructively with the issues that are threatening our future, we could attain a new high point in the way human society operates. Consensus is building about the kind of human world that is both achievable and sustainable, and there are positive signs that a coming generation of young thinkers would like to convert that vision to reality. The Global Scenario Group provides insights into these prospects for hope. This group developed four hypothetical models of the future based on different policy approaches that may be brought to bear on societal organisation and governance. Three of the scenarios were found to result in undesirable global outcomes: market world, policy world and fortress world. In the case of the fourth and hopeful scenario, progressive elements of civil society, government, international organisations and businesses will forge a new sustainability paradigm with a new vision of globalisation that is centred on quality of life, human solidarity, environmental resilience and an informed and engaged citizenry. This will result in a 'Great Transition', accomplishing a stabilised population, a redistribution of resources, modified agricultural technology and a change to the way we relate to the environment.

**To make this transition to a survivable world will require a drastic change in conventional values, economic structures and social arrangements.** The Global Scenario Group identify the critical agent of change as being the public awareness of the need to change and an associated spread of values that underscore quality of life, human solidarity and environmental sustainability.

Contemporary Australian culture contains, however, many hurdles to the creation a critical awareness and value transformation enabling this Great Transition. We consequently need to rethink current Australian attitudes in five value belief domains. The mnemonic for remembering these five domains is SEEPS: Stewardship, the economy, empowerment,

purpose and solidarity. For each of these domains the currently dominant Australian culture is leading us in inappropriate directions. Let us examine each in turn.

Firstly, *stewardship*. Home and home ownership have long been part of the Australian dream and for many they are now a reality. Our preference is for a moderately large block of land on which we can make our own imprint and which is our castle, where we reign supreme and are free to do what we want. That's now part of our cultural heritage. On this basis we radically cleared land of native vegetation, introduced species that are ill-adapted to our inhospitable environment, wasted precious water and non-renewable resources on ever larger houses, sprawling suburbs and manicured gardens. We must now change that mentality. We will need to move from the notion that, "My home and my land are my castle and I can do what I want," to the recognition that, "I'm steward of this small part of the planet and I need to care for it in such a way that my descendants will have a life."

Next, *economy*. It was Bill Clinton's campaign manager who coined the phrase: "It's the economy, stupid," and every modern Australian politician believes, with considerable justification, that the way to win elections is through the hip pocket nerve. But the trouble with the modern economy is that it depends upon manipulated consumerism and the wanton destruction of non-renewable resources, paying zero, or near zero price for the damage it inflicts on the world's commons. Further, it entrenches and rewards the already rich and is not seriously committed to sharing the world's limited resources with those at the bottom of the global heap. It's long on the creation of wealth and short on distributive human welfare.

The modern human economy has been built with almost total disregard for nature's economy, which is now beginning to bite back. The view that it is nature's economy that is paramount is presently not widely shared or understood in Australia. So we need to shift the Australian value frame from the notion that is, "It is the economy, stupid," to the recognition that, "It's nature's economy, stupid."

Next, *empowerment*. Changes occur in society not because our leaders seek them, but because dreamers with concern, a vision of hope and a vision of how things could be different, persistence and self belief, dig in to bring change about. It was Margaret Mead who pointed out that a small group of thoughtful, committed citizens can change the world and that indeed that's the only thing that ever has done so. It was the ecologist, Paul Ehrlich, who drew attention to the fact that most people are preoccupied with the here and now and that very few people are looking either at the long-term or what is happening on the other side of the world. So we need to increase the number of people who think outside that box of the here and now, both about the future of Australia and the future of the whole planet, and empower them to take action. The rush of legislation on fundamental freedoms and entitlements, before the Christmas break last year, and the sordid revelations of the AWB affair have left many of us feeling deeply uncomfortable but impotent. We must somehow find a way of empowering the Australian electorate and returning to them a belief that they can help to move our nation and our world down a safer path.

Next, *purpose*. People in Australian society are being encouraged to define themselves and their purpose in terms of the things they own and the image that they portray. The modern human economy works to maximize consumption of material things and success is measured by wealth and possessions. Yet the evidence shows that beyond a certain level of affluence, which most Australians reached some years ago, more money and possessions do not contribute to greater happiness or enhanced well-being. Human well-being depends not on what we own but on having meaning, purpose and fulfilment in our lives. Readjusting the human economy requires not only that it becomes compatible with nature's economy, but also that it helps to promote meaning, purpose and fulfilment in people's lives. We must ensure that people have the time and opportunity to build relationships and strengthen community bonds, and we need to pay attention to the infrastructure in our society that promotes the fundamental value of these tasks.

Next, *solidarity*. There is a tendency in Australia to believe that this is our country and we have earned what we have the hard way. Our Prime Minister earned widespread applause during a recent election campaign when he expressed the view, 'This is our country and we'll decide who comes here and under what circumstances'. But that is only one side of the issue.

The problem is that our country is also a part of the planet and a very large part at that. The problems that face us all are global and we are now more interdependent as a species than ever before. We must make the values transition to a belief that globalisation now means that all 6.5 billion of us are in the survival business together, and that the building of fortresses around our own good fortune will not alleviate the threats to our children's future.

So can we hasten the essential values transition? Adapting Australian culture to the emerging reality of our environmental predicament and the feasibility of long-term human survival is a daunting challenge. But if the alternative is human extinction or a barbarous future for our children, most of us will want to begin the journey. Let's not be queasy at the thought of setting out to engineer a change in widely held cultural values. After all, our values are being subtly manipulated by commercial interests every time we see a television advertisement or switch on the radio. There is a case for developing a new epidemiology of values and beliefs to help us to understand both the factors which contribute to modern value formation and to understand how to modify widely-held beliefs. We also need to fill the void that has been created by the decline in the appeal of the church and of organised political parties. There is currently no safe environment within which thinking people can explore together alternative ways forward for our society and our human place in the cosmos.

To this end, the Nature and Society Forum located in Canberra is experimenting with the possible development of an Australian life centre movement, with life centres developing in communities across Australia. This idea, originally proposed by Stephen Boyden, could be a vehicle for cross-generational exploration of the future. Life centres could become a vehicle for education, debate and action, assisting people in the local area to take greater control of the future and explore options in a safe and non-adversarial environment. These centres could help to rebuild lost social capital and offer a new opportunity for people to interact with their neighbours, as well as experts on issues relating to environment, health and well-being. The centres could be located in public school premises and be staffed by volunteers, drawn perhaps from the growing population of retiring baby boomers. They could provide a fresh new focus on democracy and the political process. Experimentation with this idea could start immediately, building from the concern and cross-generational interest of older citizens and linking with the coming generation of young people.

We urgently need a new culture of sustainability. Without it, our grandchildren will not survive. To transform Australian values so they are compatible with human survival, we must find ways of helping people to explore the real facts of life and reshape the way they view the world and their place in it. Time will tell whether life centres can help to fill this values void. Life centres are potential meeting points across the generations for people who are determined to change the current direction of society from the danger of collapse to genuine sustainability and survivability. Do they have the power to shift our vulnerable spaceship from its currently perilous course? They certainly need to as it's the only one we have and we're making it uninhabitable.

## ***Environmental change and risks to human health: Why "Sustainability" matters***

*Professor Tony McMichael*

*Director, National Centre for Epidemiology and Population Health, Australian National University*

What do we mean by sustainability, and why does it matter? At the most basic level, sustainability is about achieving conditions supportive of human well-being and health. Above all else, our ultimate purpose in the pursuit of sustainability – and arguably an innate drive as a species, as organisms – is to thrive and survive. Talk about sustainability has, to date, been directed at questions of about whether we can support the things that, tangibly, we depend on: economic productivity, the environmental conditions around us and social structures, social relations. These are very important, and they're conventionally packaged as 'the triple bottom line' – but they're not the bottom line, they are the penultimate line. The reason we want to optimise those things and get them in balance is because they are actually the

determinants of population health, both now and, in a foundational sense, stretching out into the future. **As folks interested in population health, in public health, we have not just an opportunity, but a responsibility in elucidating this relationship and making the argument that questions of environmental sustainability and population health are inextricably linked.**

Taking up this responsibility requires engaging with a shift in scale. Very much of what we do in population health centres on very localised environmental exposures to risk. However, environmental risks to whole populations have come onto the agenda in recent times: larger-scale questions that impinge on whole regions of the world and have health implications via effects through the air and through acidification of waterways and soil and so on, right through to global environmental changes such as climate change. They pose, qualitatively, different sorts of health risks, of the kind that we're not yet very good at understanding and to which we're not particularly well attuned in research methods or risk assessment methods. So we're having to work on that, and it's a rapidly growing edge. These are 'environmental-health' issues that reflect the disruption of life and health support systems.

The World Commission on Environment and Development of 1987, the Brundtland Commission, clearly linked environmental and population health, summarising that "We all depend on one biosphere for sustaining our lives." Even so, the work of that Commission was pretty much focused on questions of how to manage the environment in the interests of conventional economic development. Sustainability was then, in their terms, rather focused on continuing economic development. This is fine as long as the overall system holds together and you're not overloading it. Twenty years on we can see the environmental overload becoming manifest. Excessive human pressure on the global environment is reflected within local environments particularly as degradation and resource depletion, and at regional and global levels through altered structure and function of natural systems. These changes, via the depletion of natural 'services', bring direct health impacts.

What is the dimension of global environmental change? In terms of the availability of natural 'goods and services', a group based in Switzerland, has derived a macroeconomic assessment from data on national impacts on large environmental systems and greenhouse gas emissions (1). Their assessment is that for the last 30 years, in global aggregate, we've been trading in the red; we're in ecological deficit. We are drawing from nature more than nature can provide on an ongoing renewable basis, and anyone in private business will know you can get away with that for a while, but not for long.

An assessment of the world's ecosystem as a whole has been undertaken by the Millennium Ecosystem Assessment Project. This Project has been supported by the work of 13,050 scientists from around the world over a four year period. It has assessed the state of the world's ecosystems, the way that humans are changing them, what the impacts are now for well-being, health and other social functions, and what the trends and social impacts are likely in the future. The Project has established that approximately two-thirds of the world's ecosystems have been damaged by humans in the last two decades, with significant population health implications.

The declining capacity of world fish stocks exemplifies this damage. The story of the dramatic collapse of the Grand Banks Cod Fishery – which underwent a virtual orgy of exploitation during the post World War II period of industrialised fishing – is a well-known case study. The Millennium Ecosystem Assessment Project has identified that 25% of commercial fish stocks are over-harvested, and that the global marine harvest has declined since the mid 1980s. This decline is being addressed to an extent with aquaculture. However, aquaculture itself carries a number of environmental problems such as, for example, the associated loss of mangroves all round South East Asia. The fish harvest is a crucial source of high quality protein for a number of the world's populations, particularly in lower income countries.

Further consideration of the sustainability of global fish stocks demonstrates the interconnectedness of human factors driving environmental change. The journal "Science" reported last year that the warming of the Northern Hemisphere oceans is now leading to the

displacement of fish populations to higher latitudes as they seek to retain constant temperature, or else they're moving to greater depths in the ocean. So there is a disruption of fish populations in response to the warming of the world's oceans. Then, next, the UK Royal Society, a very eminent body, produced a report in June last year that took most of us by surprise. We hadn't thought about it, and yet it's obvious. If you put more carbon dioxide into the atmosphere, it's absorbed in part by the oceans and, guess what, the oceans become more acidic. High school chemistry. The pH is dropping. The Royal Society report estimates, that if this were to continue for another three or four decades it would seriously jeopardise the basis of the marine food web.

The Intergovernmental Panel on Climate Change (IPCC) was set up by the UN in 1988 to advise the world's governments on the process of climate change, what its consequences would be, and what we could do about it. The IPCC has produced the much-quoted estimation of a 1.4 to 5.8 degrees centigrade rise by the end of this century (2). The degree of uncertainty in the estimation reflects two main things. First, there are things we still don't know about how the climate system will respond to a change in gaseous composition as we move it outside the bounds of anything we've experienced and studied as scientists. Second, we can't be sure of what the world's future trajectories of emissions will be anyway.

The order of magnitude of temperature increase has, however, been established. The concerns are that this would be an extremely rapid rate of increase, and of course it would affect many climate-dependent, often specifically temperature-sensitive, systems – like the great sheet of ice over Greenland (3). You can see there the evidence, just in 10 years, of how much impact the warming has had. Recent estimates are that the Arctic sea ice is likely to have disappeared by the 2030s and we'll be able to happily sail to the North Pole.

Climate variability is equally important. This is a global phenomenon evident in the recent heatwave in Europe, previously unheard of snowfall in lowlands Borneo (4), and greater frequencies of extreme weather events in general.

What impacts on health and wellbeing can be expected? **Tim Flannery, for example, has estimated that a 3 degree increase in average global temperature will result in the elimination of approximately 60% of global species.** That estimation reflects an analysis of the great extinctions (50 to 90% of species) that have occurred half a dozen times over the last half a billion years of Earth's history, when temperatures have varied by about 5 degrees centigrade.

Now, considering further climate change impacts on human health, the direct impacts, such as from fires, floods and heatwaves are easily foreseeable (5). There is also a second set of impacts: less direct impacts via disturbances of ecosystems, mosquito populations, food production systems and resources. These are the things that, via all sorts of pathways, will have human health consequences around the world, particularly in various regions with vulnerable populations. Less easy to quantify is the third category of impacts – the sorts of consequences that flow from social economic demographic disruptions, such as the public health problems that ensue with the creation of environmental refugees, with conflict situations as resources are dwindling and so on.

A good example of the impact of increasing climate variability is the European heatwave of August 2003 (6). This caused an excess of around 30,000 deaths. That was a warning sign for Europe, and British atmospheric scientists have concluded that the probability of that extreme event occurring has approximately doubled as a result of the underlying warming that's occurred in the last few decades. This probability is expected to further increase. What was, on that occasion, a one in 400-year event is estimated to become a one in four-year event by around 2050 in Europe.

There is evidence that the force and damage of cyclones is also increasing. Hurricane Katrina, attracted a lot of attention (7). The temperatures of the surface waters in the Gulf of Mexico were one to 1.5 degrees above average at the time for the season, and almost certainly did contribute to the hurricane's intensity. If you want to think about that in more mathematical terms, you can imagine that what we're seeing is climate change amplification of the

underlying natural cyclone. The underlying relationship between sea-surface temperature and cyclone intensity exhibits the sort of 'damage function' that is well familiar to people that work in this area, showing the risk functions for these types of stresses on systems. It's very likely, then, that the excess damage due to the climate change component actually accounted for a very large part of the damage that's actually occurred (8). The arithmetic is difficult and there are lots of probability distributions to be considered, but these are the sorts of questions that now need to be put onto the agenda to help capture impacts.

Think, also, about how to estimate health risks in the future. We need biological modelling for some of these things because the underlying biology is complex. The interacting response of components of malaria transmission – plasmodium incubation period, biting frequency and survival rates - to variations in temperatures is a good example. You get a non-linear overall response to temperature change when you put the main temperature components together (9). Biological modelling in respect to effects of climate change allows future malaria risk assessment for the world at large, as has been demonstrated by the National Centre for Epidemiology and Population Health (NCEPH), and for specific countries, as has been done by some American colleagues (10).

NCEPH, in collaboration with CSIRO, has done similar biological modelling of an Australian climate-change scenario for dengue fever (11). Future changes in temperature and rainfall (an important influence on the *Aedes Egypti* mosquito) have been modelled to make projections of changes in the primary vector of transmission potential for dengue. This modelling predicts a considerable southward expansion of the current potential transmission area for the disease by 2050.

Finally, the existence of environmental refugees represents a more diffuse category of problems. The UN has published some months ago an alarming prediction of 50 million such refugees in this category by the year 2010. It predicts that large-scale environmental and demographic changes will lead to a huge volume of displaced persons. The social, political and public health consequences from a displacement of this magnitude have many health impacts of their own.

In conclusion, yes, it is true that health is an input, an asset for sustainable development which can lead to subsequent positive feedbacks such as gains in social and economic conditions. This point has been well argued by economists of the International Commission on Macroeconomics and Health, chaired by Jeffrey Sachs. However, we also need to understand the ways in which health is actually a quite crucial output, a criterion of the sustainability that we're seeking to achieve. Population health is the real bottom line of sustainability.

## References

1. 'Overloading the planet', slide 8/30, see power point file for this presentation at <http://www.ahpi.health.usyd.edu.au/news/2006.php#policy>
2. 'Earth's average surface temperature to 2100', slide 14/30
3. 'Greenland ice sheet 1992 – 2002', slide 15/30
4. 'Photo of orangutan', slide 16/30
5. 'Climate change and health: direct and indirect pathways', slide 18/30
6. '12 day heat wave 3-14 August 2003', slide 19/30
7. 'Hurricane Katrina crossing Gulf of Mexico', slide 20/30
8. 'Apportioning impact between natural and cc components', slide 21/30
9. 'Malaria transmission', slide 23/30
10. 'Climate change and malaria (potential transmission) 2000 2025 2050, slides 24-26/30
11. 'Dengue fever scenarios for 2050', slide 27/30

## **How should public health respond to the challenge of sustainability?**

*Professor Stephen Leeder, AO*

*Director, Australian Health Policy Institute and co-director of the Menzies Centre for Health Policy, The University of Sydney*

Sustainability is a huge topic and stretches all the way from the concern about climate change and other manifestations of pollution, through worries about where we will find energy to support a world where rising material prosperity will demand, in 30 years time, four times as much energy as the world uses today. Where, in all of this, can we locate public health, the professional discipline that seeks ways of maintaining and enhancing the health of populations through organised community-based cooperative effort?

The traditions of public health have much to offer. However, there is value in clarifying the path that public health can play in relation to sustainability, so that we, in public health, do not over-promise or miss the necessity of supporting broad, multidisciplinary approaches to achieving sustainability. Public health has always had an endearing tendency to see itself as a kind of global Statue of Liberty: 'Bring to me all those who are suffering from inequities or ghastly diseases or problems of society and we will make it better'. That is a delusion of grandeur, and we need instead to have a realistic view of what public health can and cannot deliver.

Onora O'Neill, a British political philosopher, is an exponent of the ethics and philosophy of Immanuel Kant. Kant, as you may know, wrote extensively about the notion of moral duty, and O'Neill follows this line, seeking in complex situations to understand and define what we can do in response. She urges us to recast complex problems as combinations of problems that we can understand and do something about. She calls the desirable quality of these redefined problems 'coherence' (as opposed to mad, incoherent and overwhelming problem complexes) and then seeks to determine what our responsibilities are in the light of these problems. "Incoherence," she says: ". . . occurs when a problem is said to require an impossible array of actions that are possibly only in an imaginary and idealised world."

So from this massive canvas on which we see a huge and confusing picture of all the things that are going wrong with sustainability and all the ghastliness of it, O'Neill challenges us to see if it is possible for us to define coherent components, problems that we are able to address. She says it's easy and rather ineffective to talk about the universal right to health, but plain enough when one considers who has to do what for whom, that universal health cannot be provided so that there can be no such right. **It's easy to say we must do something about sustainability. It is a different thing to say, 'Well, what are our obligations in the light of a coherent element of that problem?'**

The public health response to the challenge of sustainability is then, first of all, to be clear about the nature of the challenge, the dimensions of it, to accept that we're not going to be able to tackle all of it, but that we need a coherent definition of the problem that we can tackle and a clear understanding enables us, as our second public health response, to define our obligation, what it is that we can do, to whom, with what, by when.

After defining a coherent problem and identifying our obligations, our third public health response is to do what Tony and others have been showing us that they are already doing, which is modelling future health impacts. Public health people are in a good position to do this. They can't do it alone, but they have an understanding of health that would enable them to fulfil that function.

In the most recent issue of the International Journal of Epidemiology two Spaniards, Sunyer and Grimalt wrote a paper entitled 'The Role of Epidemiology in Relation to Global Health Effects and Global Climate Change'. They offer four things that epidemiology can do. The first of those is documenting causal associations through classical studies, creating what Tony

McMichael described to the International Society of Environmental Epidemiology as 'forward epidemiology'. This epidemiology includes research on future scenarios, based on advanced modelling, applying projections at a local or regional level, carrying out validation studies of the projected future scenarios based on empirical data, and performing classical longitudinal studies on present and past patterns of disease on a broad range of health effects. So there are some hard yards to be done in this debate by the public health people who attend to what might be called the tough stuff of environmental epidemiology.

These authors further suggest that a public health response to global warming should be the development of city-specific early warning systems. With changing climatic patterns, early warning systems make great sense, in relation to tsunamis, cyclones and tornadoes. Their final suggestions are that there is a need to implement vector-borne disease control programs and to look into the epidemiology of malnutrition. So these are, if you will, kind of bread and butter public health responses, but nevertheless critically valuable to specific populations in the face of changing environmental conditions.

The scope and multidisciplinary nature of public health work oriented to sustainability implies a strong advocacy component. How far may the public health professional go beyond his or her data in seeking social change and engineering? Advocacy can take the form of working with concerned communities, political lobbying, working with other professional groups, working with the private sector and NGOs.

Then, finally, educating professionals for collaboration and advocacy must prepare them for their future role. If we asked our public health trainees "Do you feel that you're receiving satisfactory education to work with others outside the health sector?" very few would say yes.

It behoves us, in public health to define our obligations and set about fulfilling them.

## Discussion

**Audience Member 1**, responding to Professor Leeder's statement that we "need to judge the political will for feasible interventions", asked the panel for their estimation of the power of the forces that will fight all the way in any attempt to engineer healthier values along the lines of the Life Centre communities?

Bob Douglas acknowledged that there are huge forces arrayed against any serious approach to sustainability. He agreed with the assessment of author Susan George, that significant change will not occur the community demands it. He saw politicians and decision makers as trapped in an operation that is genuinely unsustainable and over which they have no control. The only control resides with the people, and until we can develop a strategy that empowers people to take charge of this because it is threatening their kids' future, we're not going to make first base.

Tony McMichael said that great and unexpected revolutions have occurred from time to time when circumstances have been disrupted in dramatic fashion. There are those, for example, who would wish to have retained the feudal system forever. However, the Bubonic Plague in Europe and the dramatic disruption of population numbers, distribution and labour-force availability, infrastructure and so on, actually led quickly to its dissolution. That, inevitably, leads one to ask, perhaps a little morbidly, does it depend on crises to actually concentrate our minds, so that that political will emerges, including will that comes from the bottom, as Bob has described, as communities come to understand the seriousness of situations? Perhaps that's the most likely source for the moment.

In this context it has been very interesting to watch the reactions to the extreme heatwave in 2003, Hurricane Katrina and rocketing oil prices. These events have helped concentrate people's minds on the fact that things don't last forever. Over this next decade, given current trajectories and the rather rapid rate at which we're continuing to pursue, globally, a growth objective, we are likely to face more these crises. One has to hope that sooner rather than later people come to see that actually we can't go on with this picnic.

Stephen Leeder agreed that there is a contest of ideas, some of which will be well motivated and some that won't. There's definite role for universities in this contest as an idea generator and an idea purveyor, particularly in relation to these big issues. This does not mean for a moment that you can win the contest with big oil and big coal and big everything else just by being a smart academic, but there is a contribution to be made there.

Ruth Colaguirri, Director, The Diabetes Unit at the Australian Health Policy Institute, asked if the panel sensed a rise in civil society. Bob Douglas replied that the evidence from social researcher Hugh Mackay didn't give cause for optimism. However, he believed the crucial interventions must focus on invigorating civil society and re-establishing some kind of empowerment. An epidemiology of values, little different from that used to study the determinants of diabetes or hypertension, may play a role here. There is beginning to develop a global epidemiology of values. The World Values Survey is an extraordinary database that reveals quite stunning differences in just about every basic value you'd like to look at across populations. We need to ask ourselves how do we actively manipulate Australia's values in a more positive direction, because they're being manipulated in a very negative direction at present.

**Audience member 2** asked if it was possible to have sustainability without limiting population. Bob Douglas noted that Australia has 5.3 per cent of the land mass of the globe and about 0.3 per cent of the population but was as unsustainable as more populated countries. While there is a relationship between population and deterioration of environment, community attitudes and action on sustainability questions was far more critical. Certain Australia was obligated to accepting the environmental refugees that are going to be coming to us in the next 50 years.

Tony McMichael agreed that population level was an issue of concern, but thought that increasingly the impact on environment is a function of a level of consumption and waste generation per person, rather than the number of persons. The balance is shifting as wealth levels rise all around the world. The issue of national population size is difficult, so long as we live in a relatively competitive world - we seem to have inherited this from the 19th century, a world with competing nation states all pursuing self interest. So long as that exists within the framework of the existing global economic system, with its emphasis on competition, profitability, growth, all of those things that are orthodox economic objectives, the nation states are going to keep making the argument that if they're going to remain competitive, keep our heads above water in this particular globalisation, we're going to have to have the numbers as well as the economic grunt. One hears that from the Business Council of Australia, one hears it from the equivalent bodies all around the world, at a national level. Until we can make a radical shift to seeing ourselves as not primary representatives of the nation state but as citizens of the world -and that's a pretty big ask - it's going to be hard to shift national preoccupations with maintaining parity in a world in which numbers are growing and economic activity is intensifying.

**Audience member 3** commented that Australia has made many worthy policy responses to sustainability such as the Landcare program and water reuse. What can public health add? Is it really an appendage to the sustainability policies which are already in place at local government level or at state level, or is there an independent course to be struck?

Stephen Leeder replied that the response on sustainability will require the professional input from many different groups, of which health is but one. A sustainable approach would require, in Australia, strong central political leadership, with the support of industry, who might see market opportunities in achieving a more sustainable world. It may involve a raft of commercial initiatives around such things as carbon sequestration technologies, next generation of nuclear reactors, a whole bunch of stuff that may have only a tangential relationship to health. My personal view is that it is a whole of government matter, whole of nation matter, and that it would be appropriate if it was managed as such.

**Audience member 4**, a former Cabinet Minister for Health, proposed a metaphor of two cliffs facing each other and connected by a bridge. One is marked new game and one is marked old game. On the new game side are all the scientists, all the scientific journals, all the people with high IQs, and on the other side of old game are the politicians and population. Tony McMichael is suggesting that it's only a crisis that will bring people across from one cliff to the

other cliff. Steve Leeder has proposed there may be rather more noble and rational ways of getting across. How did Bob Douglas think the shift could be made?

Bob Douglas replied the severity of the pending crisis had great power to appeal to people's commonsense. Young people's lives are threatened by the prospective ecological scenarios for the future. Knowledge of this is a pretty powerful motivating force, if indeed it was in the hands of every person in Australia. People would walk across very comfortably if they were properly educated and if they weren't constantly being barraged with a whole lot of irrelevancies to the main game. We need to push the main game out into the community.

**Audience member 5 (AM5)**, asked "what are three specific things that each of you have done to change your values and actions to make a significant contribution towards solving the problems you have been talking about?"

AM5 recommended the work of P.A. Yeomans, who developed the Keyline System for landscape management. Yeomans has developed a system for capturing enormous amounts of carbon in soil. His middle son, Allan Yeomans just published a book called "Priority One" about this, in which he has calculated that if Keyline landscape management was implemented on the main pasture land of Australia, we'd capture more carbon each year than we produce from all fossil fuel burning. Thus, with the technology we already have, we could be leading the world in doing something really significant about reducing our contribution to climate change.

In relation to population density, an ecologist studying another species would start by asking three questions: how many are there, how are they distributed and what are they doing? If you've got high numbers, a highly aggregated distribution, and a highly consumptive lifestyle, you will have phenomenal resource consumption and enormous environmental impact. If you ask these same questions of humans, in the form of what we should and shouldn't do, it is clear that if we have a low population, dispersed distribution within the environment, so that we're close to our resources, and a conserver lifestyle, then we can have a sustainable society. These are clearly areas that sooner or later we've got to deal with.

In relation to initiating change in social attitudes, AM5 recommended small, meaningful, doable initiatives which can be easily taken up by others. As an example, he cited his own method of encouraging students to adopt a leader in society, as a target for re-education. When leaders are faced with a student who asks them very challenging questions, enormous changes often take place. On the other hand, the temptation to keep studying and measuring the problem must be resisted: the trap of 'monitoring our extinction research' must be avoided.

Bob Douglas found optimism in the huge groundswell of activity, commitment, interest and susceptibility to genuine sustainability action in Australia at the present time. Clive Hamilton has demonstrated that something like 24 per cent of Australians are down shifting and making active decisions for lifestyle rather than economics, a very positive sign. In terms of his and Tony McMichael's personal practice, they had agonised about the ethics of having flown to the seminar from Canberra and how many years of oil were actually consumed in the flight. Personal and big picture strategies for sustainability have to be balanced somehow.

**Audience member 6** responded to Stephen Leeder call for universities in Australia to show leadership in this field. He suggested that the current model of reward for academics, with promotion based on successful competition for grant money, requires change. Universities require an organisational change process that supports collaboration and integrated research to allow the development of knowledge that's relevant to sustainability.

Stephen Leeder agreed that insufficient research was being done around issues of sustainability, so that the arguments can not yet be put in terms that can be grasped by people who will move when the evidence is strong enough. Much good research had nevertheless been done to date, such as that supporting the current discourse. In respect to the research funding model, there are universities in North America, for example Harvard and Columbia have centres of earth studies which are funded by the university itself and sometimes by external granting agencies, sometimes through benefaction. It is quite possible to create different ways of doing this if the political will within the institution is there to do it.

However, there are lots of opportunities not taken to expand research due to a misplaced reluctance to engage private enterprise in it. For example, the whole notion that urban development can be done without engaging in conversation with those people who are making a profit out of that development is stupendously naïve. So too is any attempt to make changes to the national diet without constructive dialogue with the food producers and marketers.

Further to the question of collaboration, one of the most interesting transformations, I think, or addendums to work that's been done by Jeffrey Sachs and others at the Earth Institute at Columbia, where they've been dealing with the United Nations in an attempt to reduce poverty, has been the development of what they have called the Millennium Village Project, where they've worked through a supplementary way of achieving the millennium development goals in about three or 400 villages, now, located in impoverished countries. So it's perfectly possible to do the bottle top stuff and the big stuff and use one to inform the other and for them to be synergistic. This is not a competition. I mean, this is the competition we don't need. But we do need competition among research workers who are working in the same field, so you get the best results and you get driven commitment.

**Audience member 7** recalled that Mosman was last year identified as the locality with the biggest ecological footprint. This resulted in a great deal of controversy in the Mosman community about the value of the measure. Yet people readily accept notions of costing the burden of disease. Why does an ecological footprint touch a greater nerve?

Tony McMichael acknowledged that the ecological footprint is not a tidy measure but one with enormous heuristic value. Instead of asking the obvious question about carrying capacity, the question of how many humans can this portion of earth's surface support, we actually turn it around and say how much of earth's surface per capita does each of us actually impinge on. That's a more compelling issue for us as individuals, as communities, like Mosman, and as national populations. The great majority of people referring to the measure find it both a very helpful way of trying to understand where we're going as a community and as a world, and a very helpful way, on a personal level, of getting a measure of their own - well, environmental misdemeanours.

**Audience member 8** added that the difference in acceptance of measures noted in the Mosman case is because the environmental footprint is about 'us' but the obesity problem is about 'them'.

## **Priority actions**

Ruth Colaguri, Chair of the seminar, asked speakers to close with one recommendation on what should be done to improve things in the years to come.

Bob Douglas reiterated his recommendation to develop a new structure in Australia that fills this gap for interchange between people about the issues that are confronting us, for which the best available model is the life centres. There is a serious lack of engagement in Australian society at present in Australian society. Unless we engineer that engagement, we're not going to move. We've got to engage Joe Blow, and for that I think we've got to change the substance of the debate and get properly embedded in the values question.

Tony McMichael agreed that engagement with Joe Blow is important, as are grass roots environmental actions. However, there is a danger in preferring green consumerism, at the individual level, to coordinated governmental commitment and action. If we do, then we run the risk of repeating what we're hearing people like Tony Abbot say: that the solution to obesity is individual self discipline and responsibility and that government doesn't have a role. We've got to insist that government has got the big role here, but of course it can be helped in many ways by individuals, families, communities all doing their bit.

Providing his summary recommendation, Tony McMichael concluded that we've got to convince the community and convince policy makers that what's at issue here are the future conditions for human experience: well-being, health and, in many respects, survival. This task

demands a greater assertiveness than is implied in Stephen Leeder's approach. The formal health sector may not take the lead but must be prepared to make the argument that in the last analysis, sustaining health is what it's all about. It's about human experience. It's not about sustaining economies, social structures or social capital as entities in themselves. It's about those things because they are the determinants of our experience, our health and our survival, and we've got to be prepared to be up front, making that argument.

Stephen Leeder suggested offering John Howard a retirement job, to take his conservative interest in nuclear power generation and expand on it. He may set up a high level task force, under Peter Costello's guidance, to look at the potential that Australia has for making a major contribution, both industrially and socially, to achieving sustainable energy supplies as a global mission.

## Seminar 2: Occupational Health and Safety

### ***Will The Real OHS Policy Stand Up Please!***

*Dr Yossi Berger*

*National Occupational Health and Safety Unit Director, The Australian Workers' Union.*

Public discussion of social, political and economic matters constitute a discourse with its own dynamics which have in recent years shown increasingly to be a domain of froth and foam, with only a tenuous relation to the real world. This is particularly so for the dominant discourse of occupational health and safety (OHS) which is riddled with ideologically-based abstractions, and which can be shown to be barren as an instrument mobilising good OHS practice. Exploration of a case study of a company's response to a series of lethal explosions and fires both demonstrated the ineffectiveness typical of much OHS discourse (empty talk) and practice and suggests ways in which the debilitating effect of this discourse may be overcome.

In 2001 in a South Australian gas plant operated by the resource company Santos a worker was killed in a terrible fire. A number of workers remain distressed by the event to this day, in some cases their lives have changed for ever. Two years later another similar explosion occurred at the same plant, the death of five (and possibly 15) workers being only narrowly avoided on that occasion. Shortly after the second incident the Australian Workers' Union personnel were successful in gaining access to the site and serious programs to improve safety began.

The initial response of management, in this case through the CEO of Santos, Jon Young, was to provide a presentation to company managers and union representatives demonstrating current company OHS policy and practice. The tenor of the presentation was representative of a prevalent OHS discourse that has change little in the last twenty years. In addition to this presentation AWU representatives were provided a detailed account of the current company approach and documentation: the company OHS policies, risk assessment method, hazard identification etc. The dominant OHS discourse was shown to be in place and well understood. However, the recent history of incidents, in particular a rising trend in vehicle related injuries, showed the discourse to be just that, talk.

A meeting between management, union representatives and workers was held to consider the issues. An opening call for workers to identify any life-threatening situations they were aware of in the workplace met with a wall of silence. At this point the AWU team saw progress on the OHS issues as being dependent on breaking the silence and so requested management representatives to leave. Once management had obliged the question was put once again. The way it was presented was critical in gaining useful information. Any reference to the terminology of the dominant OHS discourse – workplace culture, shared aspirations, joint interests, being a 'Team' etc – was jettisoned in favour of a request for specific details about real hazards: where was the hazard located, which pipe, colour etc? Three life-threatening situations were subsequently discussed at the meeting with Jon Young present.

Jon Young's response proved to be another factor in the company's following progress on OHS matters. He became genuinely angry, informing the assembled workers that he 'paid them to stop the job when it reaches that level of danger'. **Young's evident concern with OHS on the site came from the heart.** It had capacity to connect with workers and is still readily referred to by workers as a licence to speak up on safety issues.

It does not follow that a passionate and heart-felt commitment to workers safety by upper management guarantees worker safety, or even the safety of workers to speak up on identified hazards. In many ways upper management is exempt from the contradictions arising from the balance between productivity and safety, what might be called 'the supervisor's dilemma'. The weight of this balancing act is carried in the main by middle management, whose value to the company lies in their ability to satisfy production output measures whilst minimising costs. In the Santos case study considered here, middle management's role was affected by Young's declared position, but not changed in substance.

Rather than always commanding compliance and silence on safety standards, they have at times evolved into seducers: 'mate, I know it's a bit dangerous but would you do it anyway?'

Young's clarity has nevertheless proved a critical driver in the current overhaul of OHS values on the ground. Workers have on occasions taken him at his word and 'stopped the job' where it was seen necessary. Their ability to make sound assessments of what is unreasonable risk has been dignified by Young's plain speaking [this is well-written]. This shift in the valuing of workers' testimony has been supported over the last two years by a range of interventions developed through a partnership between the company and AWU, resulting in the increased involvement of workers and the creation of new 'drivers' for OHS values.

The above example demonstrates the obvious value in encouraging workers' active participation in the development of workplace health and safety programs as a practical value asserted through production practices. As people involved at the site of production and who bear the associated risks, the value of workers' testimony in respect to their given site of work must be given priority. Past experience has shown many mine workers have an uncanny intuition for life-threatening risks. In the case of the Longford explosions and fatal fires the chair-person of the Royal Commission Sir Darryl Dawson recorded in the report that a workers, in response to a question about what saved his life said "It was my twitching arsehole! This type of answer is surprisingly common. The body's intuitive response to danger has been reported as an effective warning signal for many workers who have made similar narrow escapes, by responding to such as: 'feeling in their waters', their 'hair standing on end', 'skin creeping' etc. **Miners at Beaconsfield who managed to escape recounted that they 'heard rocks talking': any miner would know what that means.** These forms of tacit knowledge illustrate the intimate relation between workers and the objective assessment of the dangers they face. They suggest that once the wall of silence is broken, workers' first-hand knowledge of production processes can be a company's greatest occupational health and safety resource. This knowledge should naturally be actively developed by industry through programs of worker education which prioritise engagement, such as are now in place in the Santos gas plant in South Australia.

There remain many workplaces where the universal discourse serves to legitimate a game of positioning between management and workers which has little bearing on workplace health and safety. The language of this discourse can be ratified, alienating and, at worst, meaningless. In one mass meeting conducted by the AWU at Beaconsfield shortly after the tragedy a body of workers volunteered scores of specific comments about safety problems, yet the level of danger had been invisible to mining company safety personnel. In the language of the discourse, this situation has been expressed as a 'disconnect' between policy and practice, and a 'problem with workplace culture'. This sort of talk is meaningless from a worker's perspective. There is no such thing as workplace culture. There are various behaviours. The workers generally know the truth. The solution is simple. Speak to workers about their daily tasks, about their minute by minute workplace scenarios. They want someone to talk to them about the job they're doing over the next ten minutes. And that is what will lend respect and dignity to the worker manager relationship.

## ***OHS Research & Education in Australia - past, present and future***

*Dr Tim Driscoll*

*Senior Lecturer, Epidemiology, School of Public Health, University of Sydney.*

An examination of the transformation of institutions responsible for research and education relating to OH&S over the last twenty five years provides an opportunity to reflect on changes in the role of government in advancing workplace health and safety values. The following review firstly examines how things were done in the 1980s. It then describes the dramatic changes to conditions underpinning OH&S research and education made by the incoming Coalition federal government in 1996. It concludes by assessing the current state and capacity of the contemporary institutions taking a role in OH&S research and education, identifying some of the benefits and disadvantages of the current institutional regime in contrast to what preceded it, and identifying key challenges facing the sector at the present time. The assessment is informed by the extensive experience of the presenter, who has been professionally active in OHS from the late 1980s to the present.

In the 1960s and 1970s there was no national body with responsibility for OH&S. The existing legislation was very prescriptive and worked well in some areas and not so well in others. The difficulty was that the system was not adaptable to the rapid changes in technology, ideas and approaches of the time. Furthermore, there was inadequate emphasis on OH&S, certainly less so than there is today. An extensive British investigation into OH&S was undertaken in the early 1970s, resulting in the landmark Robens Report. This report initiated a major overhaul of OH&S delivery. In essence the Robens Report recommended a substantial shift from the prescriptive approach towards an environment where the employer was permitted to do as they wished, as long as it was safe. The employer was, however, to be held responsible if something went wrong. It was not good enough to say 'this machinery needs guarding so guarding was provided and someone still chopped their hand off'. The occurrence of such an incident would be taken to show that the guard was inappropriate, and the responsibility for the incident would become the employer's. The Robens Report therefore marks the beginning of the era of self-regulation, which has some benefits and some down-sides. The approach was taken up in the Australian context in legislation introduced in the early 1980s in all states and territories, though not fully implemented in practice until the late 1980s or early 1990s.

### Idealism and expansion

The change to a self-regulation regime occurred at the same time as a number of robust public institutions were created. The National Occupational Health and Safety Commission (NOHSC) was established as the Federal Government agency responsible for leading and supporting occupational health and safety in Australia. This body included a National Institute of Occupational Health and Safety (NIOHS), which was the research arm of the Commission. The Institute was initially mainly comprised of people from what is now the School of Public Health at the University of Sydney and was housed in a building in Bridge Road in Glebe, before moving to the (now) Centenary Building on Parramatta Rd. The Australian College of Occupational Medicine, which has since become the Australasian Faculty of Occupational Medicine, was established. There was widespread use and employment of corporate occupational physicians, and occupational physicians were appointed as directors of both the Commission (Dr Ted Emmett) and the Institute (Professor Wai-On Phoon).. More generally, there was an expansion within the workforce of people trained in OH&S.

The Institute contained specific research units in Occupational Medicine, Epidemiology, Occupational Hygiene, Occupational Toxicology, Human Factors, Statistics and Education. These units produced some world class research, notably in the areas of hot work (in fire fighters), coal-workers pneumoconiosis, mesothelioma, work-related fatal injury, vibration, serum bile acids, human error and competency-based training and assessment, to name just some of them. Within the Commission/Institute relationship there was some tension between the bureaucratic need to control and the researchers' requirement for independence, but in general this tension was well managed.

### Outsourcing and core business

In 1996, when the current Liberal government was elected, the Institute was effectively demolished. This action reflected the philosophical position of the Liberal Party but in all likelihood a similar outcome would have occurred had the Labor Party remained in power.

**The philosophy of government at that time was not to support research being done by government agencies.** Occupational health and safety education was also affected, with the Masters course in OH&S at the University of Sydney, which was run by Institute staff, being axed. This degree is no longer provided in Australia (although there is a Master of Occupational and Environmental Medicine at Monash University and a Master of Safety Science at the University of New South Wales). This led to the Department of OH&S in the School of Public Health at the University of Sydney closing, as it no longer had a clear role. Outside of NOHSC, the increase in self regulation led to a declining demand for personnel to undertake inspections. Companies sacked or outsourced their occupational physicians because they didn't think they were needed in a permanent capacity. There was a decrease in non-policy oriented OH&S research, meaning that if the research wasn't directly relevant to policy questions it was rarely funded.

## Transition 2000 – 2006

In 2000, NOHSC underwent a restructure and a period of transition began. It moved to Canberra, although very few of the staff moved. The new staff appointed to the office in Canberra had OH&S backgrounds, but very few had experience or knowledge of OH&S research or education, or useful experience in the policy area. There was also high staff turnover in the early years of the office, with something like three quarters moving on to other jobs in the first three or four years. The situation has since stabilized and the Commission has some high quality personnel. There are limits on the types of work being undertaken, but some very good work is being done. Last year, NOSH was replaced by the Australian Safety and Compensation Council (ASCC). This body performs some of the same bureaucratic tasks as NOHSC, and additionally looks after workers' compensation. The ASCC (which the presenter declared a professional interest in as a consultant to that body) is located within the Department of Workplace Relations, whereas the Commission had been an autonomous agency of government. Independently of the ASCC, other significant changes have also occurred. The development of self-regulation was extended. There was an increased use of individual employment contracts. Support for unions declined and union influence declined as a result, with detrimental results for OH&S.

Comparing the role and capacity of ASCC in relation to NOHSC, both institutions were intended to operate on a tripartite system, being directed by representatives of government, unions and business. NOHSC was constituted under special legislation and existed as a separate authority with decision-making powers. Until 1996 it encompassed a national research institute which conducted a wide range of OH&S research. The ASCC, on the other hand, is embedded within the Federal Department of Employment and Workplace Relations. It conducts limited in-house research and holds the status of an advisory body only. It is widely perceived to have considerably less independence than NOHSC due to its location, but it may be that it exercises its independence more subtly. There is also a case for saying that in some respects ASCC's location within DEWR may increase its capacity to influence. The ASCC has improved its capacity to conduct research in house, but it appears to primarily view its role in research in terms of facilitating, fostering and stimulating external research rather than by conducting research. The ASCC retains the responsibility to 'lead and coordinate national efforts to prevent workplace death, injury and disease' as a defined key activity, which includes education and research efforts. So, while the ACCC does not of the capacity of the NOHSC of the late 1980s and first half of the 1990s, it is not a lost cause.

### What has been lost?

The lost capacity in OH&S research and education flowing from the transformation of the relevant peak federal government institution is clearly evident through a review of the loss of expertise in the areas of research, OH&S education and occupational medicine. Of the 27 senior researchers employed full-time within NOHSC working in the fields of Occupational Hygiene, Epidemiology, Occupational Toxicology, Ergonomics, Occupational Medicine and Human Factors in the early 1990s, only one still holds a full-time role in OH&S research and education today. Twelve now work as consultants and five have retired. The loss of occupational physicians on decision-making bodies has further undermined the capacity of the ASCC and other government OHS agencies to make informed decisions. For example, the last medical officer left WorkCover in 2005. Outside the NOHSC, the abandonment of the Masters of OH&S program and the associated dispersion of the Department forced teaching staff into other areas and contributed to the overall loss of expertise. Associated with this remarkable drain of expertise has been a significant loss in corporate knowledge and an across-the-board collapse in research funding.

### Optimism

**Though clearly reduced in capacity, the ASCC is still in the position to play an important role in raising OH&S standards.** It is in a position to actively encourage and support research focused directly on policy development. Independently of ASCC oriented research, the NMHRC is coming to recognize the importance

of public health research, which may have positive implications for funds dedicated to occupational health research. The recent interest by governments in evidence-based policy making is also likely to encourage research funds in this area. When obtained, these funds may produce greater output than has been possible previously because higher quality data sources promise greater capacity per research dollar.

In relation to OH&S education, OH&S courses are now taught in many tertiary institutions at TAFE, under-graduate and post-graduate levels, and more OH&S courses are taught now than when the Masters of OH&S at the University of Sydney closed in 1996. These courses vary in quality, but several of the courses known to the presenter are of high quality.

### Challenges

Independently of the question of scale of the OH&S research and education effort, there are a number of outstanding issues the sector must consider:

- More effort is needed to develop collaboration between OH&S workers and strengthen the networks between people working in this and related fields;
- There has long been a problem in translating research into practice;
- Evaluation of OH&S interventions has proven to be a neglected area and would benefit from further work;
- It is unclear whether the sources of funding for research undertaken outside the ASCC context (ie. NMHRC and ARC) are able to meet the need, but the experience to date is not encouraging;
- There doesn't appear to be a critical mass of researchers and educators in the field at present;
- The effect on OH&S values of the move to increased self-employment and individual contracts is unclear but raises concerns;
- OH&S appears to have a relatively low profile in the general community at present;
- Australia has a responsibility to play an active role in the development of OH&S standards within the region, which includes many less developed countries with scant resources or expertise to pursue OH&S standards and some horrifically dangerous workplaces (a ship `graveyard'/wrecking area in Bangladesh was provided as an example).



*Source: Dr. Tridib Ghose, National Training, Officer (Health), SafeRec Project, BGD/03/005, International Labour Organization, Bangladesh*

Things in Australia are certainly far better than in many developing countries in the region, and there has clearly been an improvement within Australia in standards over the last 30 years. But serious problems still exist. Workers are still being killed and seriously injured as a result of their work. Workers are still dying of chronic disorders as a result of their work. Workers are still being exposed to things you would scarcely want your worst enemy exposed to. Yet the ability to tackle OH&S issues is probably worse now than 15 years ago due to decreased funding levels, a smaller suitably qualified workforce, the loss of strength and

status of the relevant institutions, and the move toward individual contracts and self-employment. Nevertheless, there are opportunities to make some significant advances. This will depend on the collaboration of researchers and educators, workers, business and government. It is only by working together that the country can make meaningful advances in improving the safety of workplaces and work practices in Australia and achieve the levels of OH&S that should be the right of all workers.

## ***Employer Engagement in lifestyle/health risk management programs at work***

*Dr Kim Hobbs*

*Well-being Services and Health Benefits Director, IBM Asia Pacific*

IBM business, in contrast to the types of industry discussed above, is predominantly in the supply of services and consulting and has moved away from manufacturing. `Health' is nevertheless a very important aspect of the benefits and conditions IBM provides its employees. One indication of this is IBM's commitment to the employment of occupational physicians, two within the Australian team and approximately 50 internationally. The company's international vice-president of OH&S is himself an occupational physician. Health and wellbeing is a dominant concern for IBM because it's highly valued by its personnel, including those working in developing markets such as India and China where IBM is **growing**. In those types of locations, where public health capacity is generally low, provision of health and wellbeing services by employers plays a very important role in infection control, family health and so on. IBM's provision of health insurance to employees in all the regions it operates (other than Australia, which has a social health insurance system) is another important aspect of the company's health provision and again, is particularly critical in areas where the rate of **personal** health insurance is **otherwise** low.

### **IBM pursues a comprehensive response to the health needs of its employees and to ensure the safety of its products.**

The policy coordinating this response can be accessed from the power point file for this presentation published with the materials of the seminar series. Of particular relevance to this presentation is the Corporate Instruction, flowing from the policy, on `Employee Well-being' which states that:

"The health and well-being of IBM employees is a fundamental line management and employee responsibility. This responsibility includes complying with IBM and regulatory requirements and identifying, assessing and controlling well-being risks. Our support for healthy work environments and improved health through prevention is vital to our innovation and productivity".

In real terms this means that the company recognises the importance of healthy environments both from the point of view of =corporate responsibility;, and as well , the relevance of healthy work environments to productivity, particularly in respect to the type of work conducted within IBM, which is characterised by innovative and intensively mental work, rapid changes and a global context.

The Instruction is explicitly addressed to line management and the central role of managers, serving to help counter what Yossi Berger has identified as `supervisor's dilemma':

"Managers will: actively engage in and promote proactive programs and a positive employee well-being culture based on prevention; properly train employees to recognize and control potential workplace well-being risks; foster employee involvement in workplace well-being programs."

This presentation considers an aspect of the implementation of this corporate instruction, the `Lifestyle /Health Risk Assessment and Management' requirements, which form an element of the IBM Global Well Being Management System (WBMS) along with Ergonomics, Chemicals Management and number of other programs.

IBM's Lifestyle/Health Risk Assessment and Management programs are driven by factors specific to the nature of the work undertaken by company personnel. The global character of the company means many employees undertake lots of travel. International communication between company branches means many late night and early morning calls. These factors, in conjunction with others generally associated with white collar work, serve to create specific types of workplace risk which must be managed. An additional and dominant driver is the reduction in insurance costs which has been shown to arise as a result of health risk prevention interventions. The data on cost-benefits of this type have been quantitatively established for some thirty years and is particularly influential in countries where private medical insurance is the norm. In terms of IBM's corporate responsibility and sustainability model, the company recognizes the association between health and reduced absenteeism and sickness absence. There are also links between well-being and benefits for other goals in workforce management: for example, ageing in the workforce, skills retention, training and investment. Health risk prevention is therefore a driver for a productivity effect (though the data is less clear on these latter associations.) Finally, there is an expectation held by employees within countries like Australia for health benefits as one of a suite of desired employment benefits. Independently of cost-benefit and productivity questions, this expectation must be met by companies in sectors dependent on access to high quality and innovative staff for their success. Potential employees seek and expect health risk prevention and health benefits in their own right, and as an indicator of the values of the company they may be considering. So the drive for these programs is from "below" as well as from the business management.

In relation to the actual design of programs, it is useful to consider the recent Medicare survey, conducted in November of last year, of approximately 3,600 people working in companies across Australia. **Medicare** The survey relied on self-reporting and participating companies are named in the published findings. The survey found the respondents self-identifying with risk factors at the following levels:

- 62% Overweight
- 56% High Risk behaviour (which included everything from not using sunscreen to excessive alcohol use)
- 53% Stressed
- 50% Minimal or no exercise

Summarising the results by level of healthy behaviours revealed that:

- Employees with poor health behaviour have up to 9 times [average?] annual sickness absence.
- Employees with high well being scores rate themselves twice as productive as those with low scores.
- Employees with high well being scores report working up to three times more productive hours than those with low scores.
- Employees participating in workplace fitness programs report less stress and improved psychological well being.

In designing programs to address health and well-being for lifestyle risks it is naturally necessary to identify the risks as accurately as possible. Companies may have their own data relevant to their personnel to help them do this. In all cases this can be usefully supplemented by population data.

There are a variety of models of programs available to address the various lifestyle risks in a workplace setting. These programs should always be a component of a 'total well being' program within an organization. An employee's wellbeing is influenced by many factors such as financial well being, work/life balance, social well being, diversity programs, spiritual well being and the availability of services such as employee assistance programs. **When a health program is integrated within a suite of well being programs it will have greater value to the employee.**

Many companies are responding to this reality through the provision of a wide range of well being interventions. For example In relation to spiritual well being, many companies provide

prayer rooms In Australia, IBM has also instituted a 'rotating spiritual holiday' policy so people are able to take leave on the religious holidays relevant to them (it is assumed that people will only follow a limited number of religions!).

There's data to demonstrate the efficacy of incentives to encourage participation in programs. It is perhaps surprising that self-interest in improved health is not often enough. It's however, well established that incentives for participation, such as a gym membership or a free pair of exercise workout shoes may impact on motivation.

It's important for programs to have complementary components adaptable to a diverse range of people's needs. They should encompass a range of modes of delivery such as information provision, personal health risk screening, follow-up intervention programs and self-assessment tools. They should also be supported by intensive and well-planned communications programs and delivered in an integrated fashion as a routine part of workplace activity, not as a special event on the periphery. For example, it may be possible to run a stress management activity as part of team meeting. If people see well being programs embedded in the every-day work context they know that the program is taken seriously by management. If possible it is important to engage managers' direct participation, which produces further beneficial effects as it reinforces the programs value to the business through overt support by management.

In considering the results of well being programs delivered in the workplace, such programs can provide access to group outcome data that may be unavailable in programs delivered in other, less structured contexts. The first and most important is the measurement of changes in health risks of participating individuals evidenced by the workplace group results. Measurable outcomes of the programs are factors such as smoking cessation rates, reduced blood pressure, average body mass index and decline in alcohol consumption or other high risk behaviour. Changes in attitudes may also be assessed, such as numbers of those 'ready to act'. Participation and program completion rates provide additional outcome measures.

Independently of the health benefit to individuals, there is a 'corporate productivity benefit', which affects corporate culture through the operation of multiple factors: improved absenteeism, better workforce morale, improved attrition and so on. Finally, where there is a measurable reduced health benefit (insurance) cost arising from improved health behaviours and health risk management a community benefit would accrue. Where the cost of health benefits insurance is carried by the company this benefit reverts back to the company, but where the community carries the cost of health insurance, as in Australia, reduced health insurance benefit costs arising from workplace health program participation would flow on to the community. The availability of data relating to workplace interventions and health care cost containment is not readily available in Australia.

A study conducted in the United States of the health risks changes of IBM personnel over a one year period, indicated that the most significant improvement occurred in the risk for activity (specifically, the proportion of people exercising less than once per week.) Risk reduction correlated with the introduction of an incentive program in the form of an insurance rebate for participation in physical activity. (1,2). A related important finding in the United States group results is that when the physical activity rebate came into existence there was a measurable decline in health benefit insurance costs for those participating individuals (3)

There remain some perennial challenges to the design of evidence-based health and well being programs for the workplace. These remain important for both program quality and design. Programs must be assessed in relation to what works for a given population: what content, delivery tools, communication style, incentives will be most effective for the specific group in question? As well, how does the external environment (personal and social) affect the ability of individuals to modify risk behaviour, even when the workplace environment is supportive, and can the workplace program design be modified to mitigate this? This question may provide a fruitful area for the expansion in research effort championed by Tim Driscoll above.

An ongoing methodological challenge to program assessment is that much of the data on health risk behaviour is self-reported. There does not appear much work done on pre and

post-program data validation for workplace health risk behaviour (e.g. activity frequency, eating and dietary habit changes, smoking cessation). Some work on the validity and quality of data being used to design programs would be very useful. Questions of privacy, in relation to data collection and reporting, may also be considered.

The return on investment data in health and well being programs will differ within different cultures and health insurance benefit systems, and according to the nature and scale of the program being provided. Where productivity rather than health benefit costs savings is the driver, as is the case with Australia, the measurement of the return- on- investment is somewhat more complicated; and even when estimated, return- on- investment for a given program must also be considered setting specific, and not necessarily generally applicable across all workplaces

### Conclusion

The provision of lifestyle and personal health risk management programs can form a meaningful element of corporate occupational health and safety strategy. These programs are increasingly relevant in those workplaces where sedentary work-life, high mental workloads and unusual or irregular work hours prevail. In these environments it is likely that lifestyle rather than workplace based factors present as the dominant risks affecting employees' quality of life and long term prospects for development of chronic disease. Incentives can be shown to significantly affect participation and adherence to this program. Health Risk management programs in the workplace can be shown to positively influence individual employee health experience, well being and personal risk factors for chronic disease. In addition, in situations where employers provide health insurance (eg USA example) there is evidence that participation in such programs has a positive influence on costs of providing health insurance benefits. Providing personal health risk management programs to employee can also positively affect employee productivity and influence broader corporate climate and culture of an organisation.

### References

1. `Incentive schemes: healthy living rebates 2003 – 2006 (USA), slide 14/18, Dr Kim Hobbs' Power Point presentation at <http://www.ahpi.health.usyd.edu.au/news/2006.php#OHS>
2. `Risk modification effects of repeated participation in health risk appraisals (USA data)', slide 15/18
3. `Physical activity rebate (USA data), slide 16/18

### **Discussant**

Malcolm Tulloch

NSW State Organiser, Construction, Forestry & Energy Union



*Source: Dr Tim Driscoll, Senior Lecturer, Epidemiology, School of Public Health, University of Sydney.*

Examining the photo of a brickie's labourer mixing some mud, provided by Tim Driscoll (1), is a good practical way to gain an understanding of the dilemmas working people face in respect to OH&S on a daily basis. Unless you're an OH&S practitioner, you probably wouldn't pick out the problems shown in the photo. What you see is what a manager sees: he sees a worker, he sees mud in a barrow, he sees bricks to the side, and he sees production as his driving force. He doesn't see that there are some major fundamental safety issues in that frame. He doesn't see that the mixer, down in the left hand corner, the pulley wheels don't have any guards on them. He is not aware of the open cement bags in the top right corner, that fill the air of the site with cement dust when the wind blows, including the air in that gentleman's lungs. There's a 40kg bag of cement sitting on the sand there. Bags of that weight do horrific damage to a brickie's labourer's back over his working life. Fortunately we have a situation now where, due to the efforts of people like Tim Driscoll, the situation is much improved, as 40kg bags have effectively been banned from building sites. Then there's the ramp at the back, which has some dirt on it, and is a piece of form ply. Research has shown that the results of slips, trips and falls contribute to a significant amount of OH&S injuries and are very costly. **That particular surface has to be a non-slip surface so that when the worker pushes that barrow up the ramp he is not going to slip and have it fall on top of him.** There are so broken bricks around the base of some scaffolding. Research has shown that the base plates of scaffold must be exposed so you can see what the state of the scaffold is at a glance. The level of rubbish on the site also poses a safety risk.

On the plus side, the worker is shown to be wearing gloves, so there is some protective equipment in place. The provision of protective equipment is very often the only step a manager will think of in addressing risks. This is the reverse of the recommended hierarchy of risk control, where the first step is the elimination of the risk and the very last thing is the issuing of protective equipment. In other words, if you're a safety officer on a site you'd harp on about wearing hard hats, but doing that is an admission that the site's unsafe. If it was safe there'd be no need for a hard hat and you could walk about freely.

Realistically, there's not one site in Australia that's 100 per cent safe. Why not? Because that manager is very much focused on production. Safety is a cost, something that's not really his concern. A lot of work has gone on to show why we need to have safety systems in place but in the illustrated example they're not being implemented.

A safety officer for the company shows up and identifies some issues to the company and shows the manager what needs to be done. What does the manager do? He doesn't stop the work. Perhaps the job is running behind time, money is owed to the banks, interest is accumulating and costing money, the manager's prime performance indicator. The safety officer will try and get the manager's cooperation but he doesn't have the power to demand the job be stopped. So why didn't the worker go to the manager and say 'listen, I have a problem with my workplace and I want you to fix it, and these are all the areas I think you need to fix'. If he did that particular brickie's labourer wouldn't be working there tomorrow. It doesn't matter about all the safety legislation there is in this country. **Realistically if that worker opens his mouth he loses his job.** That's why there is the situation in Australia today, where workers are still dying.

One worker dies every week in the construction industry in this country. It has fluctuated a little over the years, but it basically stays constant. If accidents at work were high-lighted in the same way car accidents are they'd be an uproar.

It's common for people to think industrial accidents are caused by careless workers. If the media reports a worker falling over and hurting himself, it's usually seen as his fault. He should have been more careful. There's rarely any talk about risk assessment that hasn't been carried out, the safe systems of work that haven't been followed that has caused the worker to be placed in that dangerous state by the management of the company.

The situation is getting worse. When a union organiser goes on to a job to take up a safety issues, the reaction is very often hostile. The right of the union organizer to advise a worker to

stop work over a safety issue is certainly not recognized. Organiser on building sites get threatened, assaulted, bricks thrown at them when all they're trying to do is see that the company works in a safe manner, and that injuries and death are avoided.

The leadership of this country has, at the moment, a special Act especially for building workers and effective in all States and Territories except New South Wales, which prevents union organizers coming on to sites without giving 24 hours notice. Even if there's an accident or fatality, 24 hours notice is required. Earlier presentations have touched on the enormous research and education effort in OH&S, but in recent years there has been a significant dumbing down. There has been a lack of resources put into OH&S. Big business does not see OH&S as important, and as the core constituency of the ruling party don't think it's important, then its not funded. Laws to stop workers and unions taking control of safety in their own workplace are an extension of this logic.

One example illustrates the current environment in construction workplaces. The safety officer on a rail project in Perth, a very experienced gentleman, and very effective in ensuring those rail workers go home to their families. He has been singled out by the company he works for as a trouble maker, because he does highlight safety in the workplace. The company sacks him, so the 300 workers on that job stop work for two weeks, until that worker is brought back and reinstated in his role of safety officer. But it gets worse. Four months later the Federal Government singles out 107 of those construction workers and fines them \$28,000 each for their participation in trying to get that safety officer back on the job. They fine another 50 for their participation in another rally, supporting that workers return to the job.

Can we conclude we have good OH&S legislation and policy in this country? It appears that ideology is driving this country's OH&S backwards.

## References

1. 'Photograph of brickie's labourer', ppt slide, 3/20, Dr Tim Driscoll's Power Point Presentation at <http://www.ahpi.health.usyd.edu.au/news/2006.php#OHS>

## Discussion

**Audience Member 1** queried Tim Driscoll's claim on a general improvement in standards of OH&S over the last 30 years. Data sets for accidents in the United States and Europe were recognized as failing to capture the effects of increasing levels of self-employment, part-time and casual work. This measurement problem would also affect assessment of the Australian situation. In response, Tim Driscoll acknowledged the difficulty in establishing accurate measures, but said his study of fatalities used one outcome measure, derived from files of the Coroner's Court, which would not be influenced by changes in data due to changing employment patterns. His study into fatalities had shown a decline in fatalities from 1980s to 1990s. He had looked at fatality figures since the 1990s and seen some further evidence of decline, though this latter assessment had not been made with full academic rigor. On the question of measurement, Kim Hobbs added that hours of work were being underestimated in many industries and there may be an underestimation of the level of people's contemporary exposure to work. Yossi Berger said that conclusions about trends were premature given the questionable assumptions of the benchmarks used to measure fatalities. The best work in this area, undertaken by Tim Driscoll and others, had found fatalities of about 3000 per year: 2,200 chemically based and 800 traumatic. This figure goes up to about 15,000 once deaths from work-related disease is included. The currently discourse on fatalities was therefore an aside from what is really happening and what is known. An evidenced-based OH&S policy was therefore a long-way off.

**Audience Member 2**, an OH&S and Rehabilitation consultant, observed that there appeared to be a serious shortage of trained OH&S professionals, and that as a consequence companies were often employing people without training. Malcolm Tulloch shared this view, and said that it reflected the low status given to OH&S work by many companies. Companies may abruptly revise their view of the value of experts after experiencing an accident or injury, or when their insurance premiums rose. It's rare for a company to follow best practice and encourage its employees to work with the OH&S professional to develop programs on an ongoing basis. Until the culture changes there will continue to be quick fixes made by people purporting to be

OH&S professionals but who are unqualified. Tim Driscoll noted that the trend to self-employment and casualisation means that a significant proportion of the population do not have the time, money and know-how to take on OH&S issues. Nor could this group be easily reached by OH&S policy interventions, which historically have been administered through employers in large workplaces and with the assistance of unions. The self-employed and casualised sector is, relatively speaking, an uncharted desert as far as OH&S values is concerned.

A member of the audience (unidentified) spoke of her concerns for the safety of the many young people whose first experiences of the workplace were often in casualised and small business work settings, where training in good practice OH&S was unlikely to be available. The current trend for young people to enter the workforce via those work settings may amplify and historically extend the effect of casualisation and self-employment on OH&S outcomes.

**Audience Member 3** suggested that there was an acute awareness of OH&S on board because of the personal liability now borne by company directors. If people do encourage unsound practice they are now personally on the line. Insurance policies are also premised on adherence to OH&S law, further binding companies to good practices. Yossi Berger discounted this argument, noting that company directors had been liable for many years. There has been some strengthening of legislation in respect to the liability of directors, but a director has never gone to jail for an OH&S-related crime. The Victorian government is currently considering legislation with provision for jail sentences for some offences. Such a provision would significantly empower OH&S inspectors and send a very positive signal to supervisors, managers, CEOs that OH&S was something to be taken seriously. To be effective, inspectors must treat workers in the workplace as their mates, and not be objective or evidence-based. They need to be empowered sufficiently to recognize and declare an explicit bias in favour of the worker. Why? Because it is workers that are exposed to the risks. Inspectors believe their value is in being objective and they would reject the idea of a bias in favour of workers. It is, in fact, a valid scientific position to assume a particular theoretical position or bias if that bias is acknowledged as a part of the method.

Professor Stephen Leeder requested further detail on the nature of incentives to participation in well being programs used within IBM, and on their success within differing settings and cultural contexts. Kim Hobbs said that the effectiveness of incentives varied considerably by national and cultural context. In the case of the United State, the financial incentive of a \$150 rebate off health insurance premiums had proved to be the most effective incentive. The success of the rebate was, however, due to its application within a suite of interventions including health promotion, case management, early intervention, immunization, disease management (which still provides the best return for investment). In other national contexts there is not the same level of integration or, in some cases, a health benefit model. Other incentives have proved to be effective in other contexts. A team incentive has been shown to be effective in the Australian and New Zealand context, where a group may be encouraged by the promise of a meal out or some other prize. Some incentives are still being investigated. It is likely that family-oriented incentives, such as immunisations, may have additional appeal in India and China, where people are more community-based.

**Audience member 4**, working in the field of Health Promotion and Disease Prevention, was interested to hear how the IBM experience might be applied within the public sector. There has been progress in public sector workplaces with smoke-free environments, needle-stick injury prevention and other safety programs, but nothing so far on well being. Kim Hobbs responded that incentives had a role to play though changes in behaviour could not be expected overnight. Health and well being programs are directed to changing norms of behaviour, and are of necessity long-term projects. During the change things are tough and people feel there missing out on something. Once it has been achieved people accept the new routine. But to make the transition there needs to be a range of interventions, and a conceptualization of different populations undergoing the change.

## Priority Actions

The Chair asked speakers to imagine that they had the power to make one major change to improve OH&S outcomes. What one thing would they do to make sure that things are better in ten years time in Australia than it is now?

Tim Driscoll believed education offered some untapped opportunities for intervention. He recommended OH&S education be delivered at the high school level, and to designers, architects, engineers and all those groups that don't currently have an awareness of OH&S but are in a position to significantly influence it.

Yossi Berger did not believe there was one particular intervention which would make the difference. However, he supported the current efforts of regulators and unions to identify and use new agents of change. With these goals in mind he had sponsored the studies of three women from the Victorian Country Women's Association scholarships to study OH&S at Ballarat University. These women will soon go out into the world and create new forces for change. An additional new agency for change could be created by the application of what he called 'killer teams of mothers'. Women of families affected by workplace accidents had, in his experience, served as extremely effective and gutsy advocates. Women equipped with a rudimentary OH&S training would retain their intuitive judgement and passion on OH&S risks and could make some big changes. However, it is unlikely that significant change would come about in the absence of believable, credible leaders.

Kim Hobbs agreed that school education is a good fit with many OH&S objectives such as safety, looking after self and others, and is an appropriate setting for learning about practical matters like meditation and nutrition. In respect to high-risk workplaces she suspected that there would be great benefit in board members working directly in roles which are associated with the most problems for a week or so. This practice would go a long way towards closing the 'reality gap' associated with disputes over OH&S matters.

Malcolm Tulloch supported Kim Hobbs proposal, suggesting that legislation should be introduced to require directors, managers and supervisors to spend a part of their working year working at the lowest level of the company. There they would see first hand all the processes, blocks and pressures to deliver at the end of the day which are put on workers. Strong safety laws are central to safer workplaces. This aim was behind the recent union campaign 'Bosses that kill' in which the CFMEU took a leading role. The need for this campaign is underscored by the experience of 16 year old Joel Exters [sp?], who fell do his death from a warehouse roof [during preparation for a cement pour?] on his third day at work. The particular building method being used on the site had been developed by the owner of the company to save money on safety mesh. The deliberate decision by the company owner to skimp on the mesh constituted criminal negligence of a scale which warranted a jail sentence. Investigation into the company's safety record showed a similar fall, due to the same cause, occurred 18 months earlier. On that occasion a worker sustained a permanent injury. This case demonstrates that, for people without the moral inclination to protect their workers or the inclination to do so, the legislation is not currently strong enough. A measure to say we jail bosses that kill or maim our workers would send out a very strong message to employers.

## Seminar 3: New Models of Primary Prevention: How well do they translate into action?

### ***Experiences from Obesity Prevention***

*Professor Boyd Swinburn*

*Chair in Population Health, School of Exercise & Nutrition Sciences, Deakin University*

It is useful to consider the thinking behind efforts to prevent obesity in children and adolescents and reflect on ways to do primary prevention in this area. This presentation contributes to this work by firstly considering the historical context of this policy area and the evidence base underpinning action. It then discusses the lessons learnt from the community demonstration projects delivered in Colac, Victoria and, at a state and national level, the lessons from the implementation of the Assessing Cost Effectiveness (ACE) project.

In the early 1980s the Australian Society for the Study of Obesity put out a document called *Healthy Weight Australia*, an advocacy document to try and get the ball rolling. This was followed soon after by a document published by the National Health and Medical Research Council (NHMRC) intended to strategically coordinate the Australian effort to control overweight and obesity, *Acting on Australia's Weight*, the first such effort of its kind internationally. That document was unfortunately ahead of its time and resulted in the production of a number of related publications and little else. Its now commonly called not 'Acting on Australia's Weight' but 'waiting on Australia's act'! which we did for many years. The lessons that came out of those early years were around the policy process. NGO advocacy was shown to be critically important in getting issues up on the agenda; the model of policy making used by the NMHRC in this instance, where expert advice is compiled and then goes nowhere, is ineffective. A lot of effort went into the creation of the document but there was little input from decision makers, it was not linked to the funding or political cycle and no effort was put into implementation. That's a recipe for no actions.

The 'epidemic' of media coverage on obesity really helped. Media coverage rocketed between 1999 and 2002 right around the world though it's unclear why. It finally became an issue for politicians to take seriously. The state obesity summits in New South Wales and Victoria in 2002, and one in Tasmania the following year that was supported by considerable industry involvement, were instrumental in lifting the issue up the agenda and prompting the federal government to create a National Obesity Task Force. The Task Force came up with a Plan which is a little light on in places but basically a sound plan with all the key settings, mostly around children and adolescents. It has important cross-cutting strategies. If the Plan was implemented and funded it would do a pretty good job. The tendency around the world is for governments to be good at producing such documents. The trouble is they don't get funded and supported.

There have nevertheless been some important outcomes from the Plan in terms of policy. In New South Wales it has been translated into action, particularly around that state's leadership of healthy food in schools, which other states have followed. Some community demonstration projects have come out of that, which have proved very useful in terms of generating evidence and expertise. However, the National Obesity Task Force has been given no money or mandate and so has not been able to act on its Strategic Plan. **There was a \$100 million pre-election spending spree made by the Federal Government, almost all of it going to 'Active After School' community activities funded by the Sports Commission and to schools applying for a \$1500 grant.** Neither body of expenditure has been evaluated. Nor was it in any way relevant to the National Taskforce Plan, which makes but two references to sport and none validating that type of expenditure. It really was an example of the 'evidence-free' approach to policy.

Aside from the unpredictable impact of the political realm, the quest for evidence-based policy in this area faces considerable challenges. The International Obesity Task Force recognised that the randomised control trials was not the only part of the evidence base and that the type of evidence needed depended on the question being asked at the various stages of the policy process. The first question, of whether something needs doing, depends on prevalence trends and health impacts. In relation to obesity, this evidence supports developing a program of interventions. The second question, on who and what should be targeted (the modifiable determinants), plenty of work has been done on this though some remains, particularly around socio-cultural determinants and around policy. On the question of how and where intervention should be made, this has already been resolved in the National Task Force Plan. We can conclude that the first three domains of evidence provide a sound basis for action.

The real crunch comes when we ask what we could do and what we should do. Addressing these questions may require many types of evidence, including some quite unfamiliar types such as evidence derived from modelling. Given the lack of strong data around what to do in obesity prevention we do have to rely on modelling. In respect to 'what we should do' the question is highly contextual. What we do for under five year-olds in rural Australia is quite different from what we might do for multicultural teenagers in the middle of Sydney. What's done has to be highly contextualised, which is quite difficult when the intervention is being coordinated at a national level. If you go to the library and search for what has been shown to work in preventing obesity in children you'll come across a Cochrane review of 22 studies, mostly of less than one year in duration. That review concludes that diet and exercise are not effective in preventing unhealthy weight gain. **If you're going to rely on a classic evidence-base medicine approach demanding this high level of evidence you'll get stuck in the library and nothing will get done.**

Summarising the various relationships between policy and evidence in relation to obesity: evidence-free policy is not uncommon and often how policies are done but it's not acceptable. Practice and policy which doesn't create new evidence, such as a \$100 million program which has no evaluation mechanism, is not acceptable either. Evidence-based practice, proven actions selected from the best evidence possible, is not feasible as the evidence is not there. It is do-able, however, to ask for promising actions using the best evidence available. Practice-based evidence is in fact the most appropriate paradigm in these circumstances.

This means getting the researchers talking with the decision makers and visa versa. Practice-based evidence, as espoused by Larry Green, Michael Mamre (?) and other, is the most effective in the public health context. Public health is more complex and evidence required doesn't always come from randomised control trials but may have a variety of origins and needs to engage the stakeholders. In this approach the starting point is not the library but in sharing the question 'what can be done?'. The range of evidence is kept wide and may include program logic, parallel evidence (carrying over what's worked in other prevention contexts to obesity prevention), process data etc., and employs more a legal definition of evidence than a medical one.

How have whole-of-community demonstration projects been applying a practice-based evidence method? Australia has the biggest concentration of whole-of-community projects, most being in their early stages, taking baseline measurements. If the information from these projects is collated when its available in five or six years a great deal will be learnt. The 'Be Active Eat Well' whole-of-community project, which is based in Colac, aims to increase community capacity to promote healthy eating and physical activity and to prevent unhealthy weight gain in primary school aged children. The commitment to community capacity of the project provides a fundamental answer to the question of how to contextualise interventions: if you give the community the capacity they will contextualise it themselves.

The action plans for the various interventions in Colac all included a capacity building element, awareness, monitoring and evaluation. The program included a number of behavioural objectives to increase this and decrease that - substitution behaviours (1). Underneath that lay a whole lot of strategies about environmental changes, policy, social marketing. Most of the projects have a pilot stage to test the water. There was a representative sample established drawn from the rest of the Barwon South region as part of the study design, and

measurements at the neighbourhood and community level, so at an environmental level (2). Behaviours were measured by phoning parents. Heights, weights and waists were measured and a lunchbox audit made.

After three years some significant changes were apparent. Relative to the control group the body mass index in the Colac trial decreased by about 0.4 of a unit, the z score was significantly decreased, average weight differed by approximately 1 kg and waist by 3cms (3). The intervention also appears to have flattened out the relationship between socio-economic status and body mass index (4). The strength of these findings was quite unexpected.

In terms of the measurable differences in behaviour change which brought about the above changes, the explanatory variables, the noticeable behaviour changes were: fewer sweet drinks, more water consumption and more active play after school. And that's it. No differences in TV viewing, e-games, active transport, ED snacks, fruit, vegetables, takeaways of statistical significance. In terms of the physical activity environments in the schools were already pretty good. The nutrition environments were pretty ordinary and did improve over the course of the projects. There was also much greater community capacity. These guys know what to do probably more than anyone in Australia. Now they have the data from the evaluation the loop is closed and they're able to learn from that too.

What is the essential intervention that worked that brought about these changes? This can be answered at two levels. At a community level, it's a mixed bag with relatively small changes. There's no one thing standing out. This is not a satisfactory answer from a government perspective which very often needs simple answers. The program coordinators at Deakin University didn't consider their role as being doing the interventions, but rather providing the support. So from a state perspective the intervention consisted of a grant of funds, about \$100,000 to the community for it to pursue the research and probably about the same amount in funding the support system, that's Deakin University's provision of training, evaluation, advice and so on. The intervention from a central, state perspective consists of quite open funding, and sufficient support so the community know how to get to their action plan, evaluate it and close the loop.

The Assessing Cost-Effectiveness (ACE) Obesity Project funded by the Victorian Government asks the question: 'What are the best options towards which state and national resources should be directed to reduce overweight and obesity in children and adolescents?'. The ACE process establishes a technical and stakeholder group, defines interventions from the literature, lists of possible actions, specifies interventions sufficiently to allow costing. The technical team estimates the population health benefit, the cost-effectiveness and uncertainty. Then the whole working group applies what it calls second stage filters which assess how sustainable, feasible etc the interventions are. The ACE Project considered 13 interventions in a wide spectrum of settings for analysis: in childcare, school, neighbourhood and community organisation settings, one a marketing media strategy, three in primary care and one, on gastric banding, in a hospital (5). The tabulated findings allow comparisons on the relative cost-effectiveness of highly dissimilar intervention types, derived from figures on effect on body mass index, size of population affected, disability-adjusted life years, gross and net cost (6). Gastric banding, which has the highest BMI reduction per person but which is selectively applied in a hospital setting, can be compared with things that reach the whole population like banning junk foods on TV, which is shown to have a greater effect in terms of disability-adjusted life years. The Victorian Government are to be congratulated for this quite methodologically cutting-edge initiative. **The result of the method reveals marked differences in cost effectiveness, log orders of difference, between impacts and costs, which prompts an immediate reconsideration of priorities** (7). The table is the result of first stage modelling and there are a lot of assumptions in it, but the assumptions are transparent. Once there's better data the models can be improved.

The ACE process provides a very useful tool for policy makers though there are obviously other considerations. One of the key stakeholders involved in banning junk foods on TV is the Federal Government and they're not going to have a bar of it. Acceptability of interventions to stakeholders is quite important. Public perceptions around gastric banding for a teenager

would make that unacceptable also. Additional considerations are issues of sustainability and equity. This model also throws up the issue of 'icon actions'. Taking school canteens as an example, the direct effect of school canteen in terms of food energy intake may be very small, but you worry about canteens because they're an iconic issue around which a community campaign can hinge.

To conclude: the models that show promise for primary prevention of obesity have a practice-based evidence philosophy, focus on community building and include funding for the community and for the support; the ACE approach is going to take off and be like the 'burden of disease', but for interventions and; it's absolutely vital to build stronger research/stakeholder relationships.

## References

1. 'Be active, eat well... making it easy', slide, *New Models of Primary Prevention: Volume 1*, Home Studios, Sydney. <http://www.ahpi.health.usyd.edu.au/news/2006.php#models>
2. 'Impact measures (Colac versus rest of Barwon SW region)', slide, *New Models*
3. 'Less BMI, z-BMI, weight and waist gain in intervention', slide, *New Models*
4. 'Flattening of SES – BMI relationship', slide, *New Models*
5. 'Interventions selected for analysis', two slides, *New Models*
6. 'BMI, target pop, DALYs, gross and net cost by intervention', slide, *New Models*
7. 'Incremental cost effectiveness of interventions', slide, *New Models*

## **The Contribution of Pharmaceutical Products**

*Emeritus Professor Stewart Truswell AO*

*Chairman, Nutrition Research Foundation, University of Sydney*

Eminent health promotion expert Professor Lawrence Green has boldly reasserted the importance of pharmaceutical products in primary prevention. He advocates a polypill, a combination pharmacotherapy, for universal distribution to address the risk cardio-vascular disease (CVD). **“Nothing else we have designed as an intervention could make such a large difference in so many lives” says Green** (1). It's potential, in his view, has international ramifications: "The Polypill is almost certainly coming soon in some developing countries, notably India...". Bearing in mind, as Green does, that health promotion professionals tend to be 'anti-technology', it is useful to revisit the work currently performed by pharmaceutical products in preventing disease and attenuating quality of life. The time is passed when we can cheerfully ignore pharmaceuticals and devices to keep us healthy for longer.

The polypill suggestion caused much interest and discussion because one of its proponents, Nick Wald, is closely associated with the use of another pharmaceutical product for primary prevention. Wald, an outstanding professor of environmental and preventive medicine, is distinguished for his involvement in the British trial showing that folic acid prevents neural tube defects (2). That trial paved the way for the routine use of folic acid, either taken as a tablet periconceptually or put into some staple foods, to reduce neural tube defects. This fortification is a mandatory addition to cereal foods in North America. It is currently voluntary in ANZ, though mandatory folic acid in all our bread is this month (October) proposed by our Food Standards authority.

Wald and Law published their proposal of a polypill in 2003 (3), suggesting such a pill could be taken by everyone 55 years and over to reduce or delay cardiovascular disease (CVD). It would have 6 ingredients: a statin, three blood pressure-lowering drugs each at half dosage (a thiazide, a  $\beta$ -blocker and an ACE inhibitor), fifthly 75 mg of aspirin (an anti-thrombotic dose, 1/4 the usual analgesic tablet) and 0.8 mg of folic acid, which lowers plasma homocysteine that appears from observational epidemiology to be a risk factor for CVD.

There were 94 letters about the polypill article (and editorial) on the British Medical Journal's website (4), with a wide range of professional, technical and ethical reactions. The most obvious set of reservations is that, even if people take it, the effect of the components may not be additive and there may be more side effects (eg. bleeding from aspirin) than Wald and

Law estimated. Substantial clinical trial(s) are obviously essential, and not only in people at obvious high risk of CVD. There's evidence to suggest that the high expectations of the benefit of folic acid on CVD and dementia may be premature (5,6). On the other hand the aspirin might prevent some colorectal cancers.

There are two main problems with the polypill. Firstly, no combination of 6 drugs is going to be right for everyone. We are in an era of genomics, including pharmacogenomics. People don't all respond to drugs the same way, either in therapeutic benefit or adverse effects. Secondly, if much CVD is prevented we shall be more likely to have cancer or Alzheimer's in our last years – perhaps worse options.

The polypill idea has only last month been reawakened with a four component proposal. Milton Weinstein (Health Policy, Harvard), along with an epidemiologist and an expert on CVD in Africa (7) have published Markov model analysis of aspirin, two anti-hypertensives and a statin (they'd thrown out folic acid and the most expensive antihypertensive). They estimate that this combination could be cost effective even in developing countries (in India pharmaceuticals are produced much more cheaply) for older people found through screening to be at high risk of CVD.

But pharmaceuticals are not only useful for preventing CVD. This role is relatively recent, as is shown through review of the existing role of individual pharmaceuticals in preventing the different major diseases.

### Infectious diseases

In developed countries most of the serious infectious diseases have been primarily prevented by vaccines which are, of course, products of the pharmaceutical industry. Vaccinations have particularly reduced children's deaths and illnesses in older people. They also prevent us, when tourists, from serious illnesses in developing countries. It's perhaps surprising how long the list of vaccines used in Australia is – 15 or more: Diphtheria, Haemophilus influenzae B, Pertussis, Fluvax, Tetanus, Pneumococcus, Poliomyelitis, Meningococcus, Measles, Mumps, Hepatitis A, Hepatitis B, Rubella, BCG (Tuberculosis), Varicella/Zoster, Typhoid, Cholera, Yellow Fever, Q fever.

### Dental caries

All fermentable carbohydrates, not just sugars, provide substrate for the oral streptococci that produce dental caries. Nutritional prevention, reducing the time that fermentable carbohydrate is in the mouth, is not as effective as fluoridation. **Fluoridation is perhaps the oldest example of chemical primary prevention of chronic disease.**

Fluoride (1 ppm) began to be added to drinking water in some locations in the USA as early as 1945. Fluoridation was not introduced to correct a classic nutritional deficiency disease but to preserve our teeth and transform the work of dentists. Surprisingly, it won the support of dentists, who had a vision to support a measure they might have thought would take work away from them. There are still vociferous critics of this "mass medication" and when they become too noisy we have a duty to state clearly that this is one of the great triumphs of public health. Fluoride is also added to toothpaste, another pharmaceutical involved in prevention.

### Hypertension

Hypertension is one of the major risk factors for coronary heart disease and the biggest risk factor for strokes. The three demonstrated nutritional ways of preventing high blood pressure (BP) as people get older are: (i) salt intake below 6 g NaCl (100 mmol Na)/day (ii) avoidance of overweight/obesity (iii) alcohol intake under around 3 standard drinks (30 g ethanol)/day. In 1984 Australia became the first country to have an official (NHMRC) recommendation (8) that people should aim to take in not more than 100 mmol sodium (6 g salt) per day. It is very difficult for ordinary people to meet this target as about 85% of the salt we eat is put in the food in the factory before we buy it. Most is in carbohydrate-rich foods like bread. Industry has largely resisted calls to reduce this salt (which is no longer required to preserve food now

we have refrigerators). In the UK the Food Standards Authority has confirmed the scientific evidence and is leaning more heavily on the food industry than we were able to here.

The NH&MRC officially recommends no more than 2 alcoholic drinks/day in men and one in women for good health (9). Health risks associated with obesity are well known. However, many older Australians who are not obese and drink moderately have hypertension. They can't manage a low salt diet with our present Australian food supply. Pharmaceutical products play an important role in allowing this group to run a more or less normal BP with little or no side effects, at modest cost.

Five main groups of anti-hypertensives are widely used. Each has several different products to choose from or try. There are the thiazides (official names end in '-ide'),  $\beta$ -adrenoceptor blockers (names end in '-ol'), calcium channel blockers (names end in '-dipine'), ACE inhibitors (names end in '-pril') and angiotensin II receptor antagonists (names end in '-artan'). If necessary, by combining drugs from two groups the effect on BP can be increased without doubling risk of side effects. Anti-hypertensives are widely used in Australia, both for the secondary prevention (of strokes and heart disease) in people with definite hypertension and for people without symptoms but who are identified to have borderline hypertension – round 140/100. There were over 19 million prescriptions for anti-hypertensives recorded by the 2004-05 Pharmaceutical Benefit Scheme in Australia, subsidised at a government cost of \$385 million. This doesn't include inexpensive thiazides or several  $\beta$ -blockers.

### Raised serum cholesterol

About 50 large prospective cohort studies in several countries have shown consistently that high serum total and LDL-cholesterols are associated with increased risk of coronary heart disease events. Until about 10-15 years ago the best way to lower serum cholesterol was with a combination of dietary changes: reduced saturated and trans fat and dietary cholesterol; increased  $\omega$ -6 polyunsaturated fat, increased soluble fibre, avoidance of unfiltered coffee, weight reduction if overweight. By strict adherence to such a diet people can reduce cholesterol by up to 25% (10). The use of statins, which inhibit the first step of endogenous cholesterol biosynthesis, represents a remarkable breakthrough. The good ones lower LDL cholesterol by around 20% (11) and are easy to take. Side effects on muscle are seldom a problem (11), except in professional athletes (12) (cerivastatin had to be withdrawn because of cases of fatal rhabdomyolysis). Statins also reduce strokes (13).

Wald and Law's proposed polypill includes a statin, Atorvastatin, which they predict would prevent 80% of heart attacks. However, in the largest meta-analysis of statin trials the coronary mortality was reduced 19% (11) and any vascular event by 21%. Increased serum LDL cholesterol is not the only risk factor for CHD. Smoking, hypertension, inactivity, diabetes and central obesity are all important factors. They are not reduced by taking statins. Availability of statins complements other evidence-based primary preventive measures but does not replace them.

Brown and Goldstein (Nobel Laureates for their work on cholesterol receptors) recently point out (14) that the heart attack rates on statin treatment are somewhat disappointing compared with people who have had the same low cholesterol for more or less a lifetime. "The appropriate consideration may not only be how low, but also how long". Atherosclerosis is a chronic disease that begins in the late teenage years. By the time people go into a statin trial they usually have advanced atherosclerosis. This reminds us of the great preventive potential of a classic Mediterranean or Japanese type diet from the second decade of life. That is, unless people start taking statins when they leave school.

Generic simvastatin is now available over the counter in the UK (15) – a bad decision for public health. **In Australia, doctors are asked to only prescribe a statin for someone who has a serum total cholesterol above 5 mmol/L, repeated (because of within-individual variation) who has tried to follow a cholesterol-lowering diet.** The cholesterol (and LDL) response should be monitored periodically and the person checked for side effects. The doctor should look for secondary high

cholesterol (eg hypothyroidism) before prescribing and statins are contra-indicated in pregnancy.

There have been a very large number of statin prescriptions in Australia. In 2002 there were over 50 scripts per month (a month's supply) per 1000 people (16). Statins cost the Pharmaceutical Benefit Scheme (PBS) more than any other type of medicine. By 2004-05 statins subsidy cost the PBS \$885 million for over 15 million prescriptions. A group at Imperial College, London found prescriptions per 1000 of lipid regulating drugs (largely statins) rose 5 times from 1996 to 2002, in England but admission rates for myocardial infarction showed very little reduction (17). One would expect from the controlled trials that CHD events start to fall during the first year. Clearly advisers to the PBS will soon have to do a serious cost-benefit analysis.

It may well be that prescription of statins in Australia is not yet well targeted. Stocks et al, (16) noted that more prescriptions were for women and for people in higher socio-economic groups (who have lower CHD mortalities): an example, as they say, of the "inverse care law" that medical care varies inversely with need.

### Overweight and Obesity

For these there are no good medicines like the anti-hypertensives and the statins. The pharmaceutical situation for obesity resembles that for blood pressure and serum cholesterol of the 1960s. Prescription of a medicine for someone with a Body Mass Index of say 27 kg/m<sup>2</sup> (ie overweight) could be thought of a primary prevention of obesity. The question is how often is this done and is it worthwhile? **As George Bray (America's leading obesity researcher) put it "the history of drug treatment of obesity is indeed strewn with catastrophes"** (18). They appear in older textbooks of medicine: thyroid extract, dinitrophenol, amphetamines, structurally similar  $\beta$ -phenethylamines, digitalis, diuretics, aminorex, fenfluramine with phentermine.

The only drugs now approved for treatment of obesity are orlistat (Xenical) which inhibits pancreatic lipase, and sibutramine (Reductil) which works in a quite different way, by inhibiting the re-uptake of noradrenaline and serotonin. Each of these costs the consumer \$115/month. There is no PBS subsidy. Orlistat has to be taken with each meal; it produces gastro-intestinal symptoms and steatorrhoea unless patients limit their fat intake. Sibutramine has a list of contra-indications to its use and a number of side effects (including hypertension, tachycardia, constipation and insomnia) (19). Both these drugs are only suitable for people who are obese, who have a BMI over 30 kg/m<sup>2</sup>. If we take obesity (BMI >30) as a disease (20) then the drugs available at present to assist dietary weight reduction are not appropriate for primary prevention. New drugs may of course be developed and there is intense research activity to understand the physiology of human appetite and energy regulation. More complexity is discovered every year. Any pharmaceutical to prevent weight gain will have to work by suppressing appetite but no other brain function. Something as efficient and safe as statins may be a long way in the future.

Overweight and obesity are major risk factors for type II diabetes. The most effective preventive measures for pre-diabetics are serious weight loss and physical exercise, shown in two randomised controlled trials in Finland and the USA. Metformin was only half as effective. An editorial in the June 2006 Diabetes Care (21) argues that health insurance systems should be reorganised to pay for Diabetes Prevention Programs involving intensive behaviour change.

### Osteoporosis

For primary prevention of osteoporosis exercise, adequate dietary calcium and adequate vitamin D for its absorption are all important. Enough calcium can be obtained from the diet and, if not, from calcium tablets. These have been generally recommended for about 25 years, originally from the work of Chris Nordin (22), now in Adelaide. It's possible that adequate vitamin K (eg. from green vegetables) is also beneficial. A new development is the realisation that we can't take vitamin D for granted in Australia, in spite of all our sun. A large number of old people are indoors all the time and get hardly any sun exposure. Our diet

doesn't provide the requirement (7) of vitamin D if there's no sun. These people have often been found to have low or "deficient" plasma 25-hydroxyvitamin D and compensatory increase of parathormone. Even people who aren't housebound or institutionalised are avoiding the sun to prevent skin cancer, with big hats and sunscreen lotions. We have in press (23) a paper that argues we need more foods, fortified with vitamin D, starting with milk (as in North America) and that all institutionalised and housebound people (like the submariners) should regularly be taking one or other pharmaceutical form of vitamin D – for primary prevention of osteoporosis. Another pharmaceutical group, the bisphosphonates (eg, alendronate. 'Fosamax') are also used in primary prevention of osteoporotic fractures.

#### Cancer, Depression, Arthritis and Dementia

The only reliable pharmaceutical for primary prevention of one type of CANCER is the new papillomavirus vaccine Gardasil (developed in Australia) for prevention of cancer of the uterine cervix. The present cost is US\$360 for the necessary three, spaced injections. Lastly, there is a suggestion of benefit from earlier treatment of DEPRESSION. This is unlikely to be safe for everyone. It would probably be limited to those who, on screening, are found to have psychiatric or genetic evidence of risk. For OSTEOARTHRITIS eg, of the knee some (small) trials with glucosamine or chondroitin sulphate have reported improvement in symptoms. For DEMENTIA new potential medicines are being developed that may reduce  $\beta$ -amyloid formation.

#### *Contribution of Pharmaceutical Products to Primary Prevention*

<b>Suggested Prevention</b>	<b>Per cent</b>
Foetal malformation	20
Infections	70
Teeth	60
Hypertension	65
Cholesterol	40
Cardiovascular disease*	55
Obesity	5
Diabetes	10?
Osteoporosis	15
Cancer	2
Depression	?
Arthritis	?

\*Two preceding lines plus fish oil, aspirin, anti-arrhythmics.

#### **References**

1. Green LW (2005) Prospects and possible pitfalls of a preventive Polypill : confessions of a health promotion convert. *European Journal of Clinical Nutrition*, 59, Suppl 1 : S4-S9.
2. Medical Research Council Vitamin Study Research Group (1991) Prevention of neural tube defects: results of the Medical Research Council vitamin study. *Lancet*, 338 : 131-137.
3. Wald NJ and Law MR (2003) A strategy to reduce cardiovascular disease by more than 80%. *BMJ* 326 : 1419-1423.
4. <http://bmj.bmjournals.com.ezproxy.library.usyd.edu.au/cgi/eletter> Rapid responses to NJ Wald & MR Law (see ref 3).
5. Comment (2005) Folate supplementation and cardiovascular disease. *Lancet*, 366 : 1679-1681.
6. Mooijaart SP Gussekloo J, Frölich M et al (2005) Homocysteine, vitamin B-12, and folic acid and the risk of cognitive decline in old age : the Leiden 85-plus study. *American Journal of Clin Nutrition*, 82 : 866-871.
7. Gaziano M, Opie LH & Weinstein M (2006) Cardiovascular disease prevention with a multidrug regimen in the developing world: a cost-effectiveness analysis. *Lancet*, 366 : 679-686.

8. National Health & Medical Research Council (1984) *Report of the working party on Sodium in the Australian diet*. Australian Government Publishing Service, Canberra.
9. Truswell AS (2003) Limit your alcohol intake if you choose to drink. In *Food for Health. Dietary Guidelines for Australian Adults. A guide to healthy eating*. pp 151-169. Commonwealth Department of Health and Ageing/NHMRC, Canberra.
10. Lewis B, Katan M, Merckx I, Miller NE, Hammett F, Kay RM, Nobels A & Swan AV (1981) Towards an improved lipid-lowering diet : additive effects of changes in nutrient intakes. *Lancet*, 2 : 1310-1313.
11. Cholesterol Treatment Trialists (CTT) Collaboration (2005) Efficacy and safety of cholesterol-lowering treatment : prospective meta-analysis of data from 90,056 participants in 14 randomised trials of statins. *Lancet*, 355 : 1267-1278.
12. Sinzinger H & O'Grady J (2004) Professional athletes suffering from familial hypercholesterolaemia rarely tolerate statin treatment because of muscular problems. *Brit J Clin Pharmacol*, 57 : 525-528.
13. Sever PS, Dahlof B, Poulter NR and 11 others for the ASCOT Investigators (2003) Prevention of coronary and stroke events with atorvastatin in hypertensive patients who have average or lower-than-average cholesterol concentrations in the Anglo-Scandinavian Cardiac Outcomes Trial-Lipid-Lowering Arm (ASCOT-LLA): a multicentre randomised controlled trial. *Lancet*, 361 : 1149-1158.
14. Brown MS & Goldstein JL (2006) Lowering LDL- not only low, but how long? *Science*, 311 : 1721-1723.
15. Editorial (2004) OTC statins : a bad decision for public health. *Lancet*, 363 : 1659.
16. Stocks NP, Ryan P, McElroy H & Allan J (2004) Statin prescribing in Australia: socioeconomic and sex differences. A cross-sectional study. *Medical Journal of Australia*, 180 : 229-231.
17. Dr Foster's case notes (2004) Prescribing of lipid regulating drugs and admissions for myocardial infarction in England. *British Medical Journal*, 329 : 645.
18. Bray GA (1998) Drug treatment of obesity : don't throw the baby out with the bath water. *American Journal of Clinical Nutrition*, 67 : 1-4.
19. British National Formulary (March 2003) British Medical Association and Royal Pharmaceutical Society of Great Britain.
20. Kolata G. (1985) Obesity declared a disease. *Science*, 227 : 1019-1020.
21. Teutsch S (2006) Preventing diabetes: the time is now. *Diabetes Care*, 29 : 1447-1448.
22. Nordin BEC, Morris HA, Need AG & Horwitz M (1996) Dietary calcium and osteoporosis. In Pietinen P, Nishida C & Khaltaev N (eds) *Health Issues for the 21st Century. Nutrition & Quality of Life*. WHO, Geneva.
23. Shrapnel W & Truswell AS (2006) Vitamin D deficiency in Australia & New Zealand : what are the dietary options. *Nutrition & Dietetics* 63; 206-212.

## Discussants

*Professor Ian Caterson*

*Boden Professor of Human Nutrition at the University of Sydney*

Prevention is possible both through primary and targeted means. We have to start by working on obesity in this community at this time. We can achieve more by working on obesity, across a whole spectrum of disease, than we can by any other means. It goes to the essence of the way we live. One of the things we could do is reduce dietary fat through policy. Looking at the rate of consumption of dietary fat in relation to proportion of population with >26 body mass index by country [1], those with the lowest proportion of dietary fat have the lowest proportion of obesity. Australia's population has one of the highest proportions of fat in its diet though it has a lower proportion of overweight and obesity than some other countries with similar rates. Part of that's to do with our affluence. Nevertheless, we could do better. So we could tax people in various ways so they didn't have as much money to spend on food. Data from Brazil shows a relationship between household income and family body mass index [2]. You could live on a diet of cassava, maize and beans and a household income of \$US99 to \$US499 per year but this is unfeasible in Australia. The other thing is we could exercise more [3]. As our dietary fat goes up so our energy balance changes. If we are of low activity, that is

less than one hour of activity a day, and we covertly manipulate your dietary fat, then you automatically then you automatically go into positive energy balance when your dietary fat is more than 25 per cent. Ours in Australia is probably around 30 per cent so each day we're automatically eating more. If we could get people to do one hour of exercise a day without changing their diet it takes up to 54 per cent before you go into a positive energy balance. We could, by looking at our fat and our activity, make a lot of difference. This has been done in many countries, including the United States. If the United States can do it, we can do it. In Sweden in 1991, in China in 1997, in Finland in 2000 and in the United States in 2002 a lifestyle intervention was trialled consisting of dietary change, dietetic advice, physical training in sports centres for twelve months [4]. The effect of these interventions lasted for years after they were concluded.

When communicating a new idea to people it is often useful to have a word: in this case it's PISSPOT. The first 'P' in pisspot is actually publicity, not as we usually think of publicity, but publicity as noise. It doesn't have to be driven by experts. It actually has to be driven and come from the community, saying in this case that obesity is a problem. Experts may nudge it along but don't need to stand in front of the television cameras. The 'I' is for involvement. We've talked about pharmaceuticals. We need business, lay people, bureaucrats to become involved and, of course, the politicians will follow. We have heard that the first 'S' is for settings, and the settings may be at the community level but we've forgotten most of the other places. Most of us spend a lot of time at our workplaces but few of us are given the time at work to go to the gym. It's good to see this hospital has a new gym, but there's no time built into our day to use it. It would be a simple thing. In fact the Treasury is quite positive about this as it sees a way to work out tax breaks for companies but allowing us to work. It does involve business and the community. The second 'S' is studies. Then there's policy. What can we do that we haven't heard about? First of all there are commonalities, things that would go before broad populations, which might be 'family friendly' subsidies or taxes. As Boyd Swinburn has said, there need to be icons. In the same way that schools are healthy places, so hospitals should be healthy places. We can use sports to do things. Where should we do it? Everything that has been effective, as Boyd says, has involved the whole community: from the Mayor through to the school children, from the mothers to the grandmothers. There are also the small communities of the workplace, mothers groups. Policies also need to have local impact with outcomes ('O'). And when all this has been achieved they'll be a 'T' for tiredness: hence PISSPOT.

The thing that nobody has talked about, is how to influence individuals over something like obesity that is not discussed due to stigma. We're not allowed to say people are fat. We have to deal with the problem of stigma. Problems also arise when we set out to change lifestyle. Lifestyle is an individual responsibility. We have to find a way around those problems to influence individuals and governments, to help individuals change. We can't say directly what to do or prescribe a pill. Another problem is that many politicians are not involved because they don't see it as large enough an issue. We have to move from the dramatic care of this age to the chronic care of the future. We've got to stop spending money, though it will be difficult, on dramatic new cures, and start spending money on things that are ongoing, and this will be achieved through policy.

## References

1. 'Overweight prevalence relates to dietary fat', slide 1 of presentation, *AHPI/OxHA Seminar: New Models of Primary Prevention: Volume 1*, Home Studios: Sydney
2. 'Household diet and adiposity in Brazil according to dietary staples', slide 2, *New Models*
3. 'Energy balance and dietary fat', slide 3, *New Models*
4. Preventing type II diabetes in glucose intolerant adults, slide 4, *New Models*

## Discussant

Ross O'Donoghue

Director, Health Improvement, ACT Health

This presentation builds on the earlier presentations, with particular reference to the initiatives of the Australian Better Health Initiative. Boyd Swinburn refers above to the problem of engagement with funding and political cycles. . This problem was apparent within

Commonwealth Department of Health's early deliberations on obesity. The issues around obesity only started to get traction when they became important to the central agencies of government, particularly Finance and Treasury. When Treasury "put together" the intergenerational report and obesity, they began to appreciate the importance of obesity in terms of its potential impact on the national economy and productivity. It also started to loom large on the agenda of major food producers. This is after all, the classic paradigm of population health: that population health is everybody's business and all sectors need to play a role in creating healthy environments for healthy living. In Stuart Truswell's discussion of the role of pharmaceuticals, there were good examples of the prophylactic use of chemical agents like folate and fluoride. If we reflect on the public health gains of last century, the dogma is that we gained in developed countries something like 30 years in life expectancy as a result of interventions based largely in civic engineering: sewerage systems and clean drinking water. It seems somehow perverse that in an obesogenic environment, where there's an unhealthy environment causing chronic disease epidemics which are likely to threaten that gain in life expectancy and perhaps reverse those gains, that we think about magic bullet type of answers as one way out. **If John Snow had known about hydration and antibiotics when he was confronted with the Broad St pump would he have said 'Don't worry about the dirty water. We'll go for the pill'?**

There's certainly a case to say that traditionally Health Promotion has tended to be opposed to 'magic bullet' solutions and somewhat anti-medical. This is discussed below in relation to the opportunities in the Australian Better Health Initiative, particularly in relation to secondary prevention for diabetes, with reference to the Finnish studies referred to by Ian Caterson.

The Australian Better Health Initiative is a \$500 million program implemented over four years, agreed on by the Council of Australian Governments very recently, made up of a series of components. The first of these is a series of rolling health campaigns, the content of which is shortly to be agreed on, with a combined budget of \$43 million. In 2004 the UK House of Commons Report noted that the top ten food manufacturers in that country in the year 2002 spent £460 million on promoting their products. That gives you an idea of the difference in scale between our promotion of healthy lifestyles and what food manufacturers are prepared to spend in the marketplace.

The second component builds on the work Boyd Swinburn referred to about healthy school canteens, and proposes to derive a national set of school canteen guidelines and a national approach to their implementation. COAG's support should help improve the consistency of this initiative's implementation.

The next component relates to secondary prevention for chronic disease. It has been agreed that there will be a health check for patients who are about 45 years of age with identifiable risk factors of chronic disease. This will be one of an increasing number of items which constitute a preventive use of Medicare. There was a time when the Commonwealth Government would have said Medicare was exclusively a treatment system, when it would have fought tooth and nail against any item which had a preventative function. This component will allow anybody who is overweight or at risk of chronic disease to have a blood pressure and blood test for blood glucose, and if we followed the model of EPC items for people with chronic disease, those people would be eligible for six visits within the first 12 months with an allied health professional across a range of disciplines, which would start to look an implementation strategy for the Finnish and US lifestyle interventions.

The Australian Better Health Initiative therefore has potential to completely change the paradigm of how the health system operates. If we put the health screen for people with glucose intolerance alongside a Medicare funded intervention with six visits in the first 12 months with allied health professionals we're starting to talk about the Finnish or American interventions. The evidence for the efficacy of those trials is compelling in terms of health promotion. Even so, many health promotion experts will identify a medical model underpinning these interventions and reject them: the trials don't appear to address the central health promotion foci of 'capacity and settings'. To me this seems to be rubbish. If

we can't respond to the best evidence we have ever seen for lifestyle modification what are we here for?

As part of the White Paper on Public Health the British government made an extraordinary commitment which appears to have gone unnoticed. They said that anyone in the United Kingdom who wants to make positive changes to their lifestyle will be able to access a National Health Service accredited trainer. The implementation of this strategy is currently underway. This initiative has the potential to offer a new paradigm or professional role in health care. It is a pedagogue, life-coach kind of model which crosses professional disciplines. It could be the fitness trainer, the yoga teacher, the physiotherapist or the occupational therapist. It may be that at the core of the United States and Finnish studies it was the continuity, support and coaching roles that professionals played that was important. The Finns used dieticians for the one on one sessions, and they enrolled people in gyms. The idea of a coach or a pedagogue is worth exploring. The accreditation model should ensure that these people act responsibly and meet professional requirements in the work that they do.

So while the present MBS screening intervention is only funded for \$25 million over four years, there is a genuine opening of the door which the Federal Government may not be able to shut, nor should it.

Associated with the former component is another component aiming to target risk modification for those people identified at risk during the screening. This is not funded from the initiative, but is 'pencilled in' for \$120 million to be funded across state governments, for providing risk modification and support for those people identified at risk. This is the opportunity for feasibility trials of the Finnish and US interventions in the Australian context.

There is also a component that provides incentive funds to improve the integration of primary care services. There's an increasing interest in the collocation and coordination of primary care services, the interface between general practitioners and non-government services. This is a welcome trend. The promise of the location of general practitioners in community health services was commonly heard some 30 years ago, though it has yet to be met. It may be soon, and general practitioners may well be joined by other allied health professionals. The funds allocated to this are paltry but the principles and model are correct.

The last component touches on what Boyd Swinburn has earlier described as creating community capacity, and what the Initiative identifies as 'Creating supportive environments for healthy lifestyles'. In the Australian Better Health Initiative there is a \$60 million over four years element which is described as 'school and community-based programs to support healthy lifestyle change'. This has discrete national and state elements. It's derived in part from the experience of the Healthy Living Centres in the United Kingdom. These Centres were supported by over 300 million pound over three years from the Lotteries Fund. They were not tightly specified. Applications were open for almost anything,, as long as it contributed to healthy lifestyles in the community, as long as it could show partnerships, that it was based in the local community, and that it might have some hope of sustainability. The Initiatives' program will be evaluated at the end of this year. It's unclear how effective the program will prove, but there's a kernel of an idea to give serious money to communities, in partnership with local and state government agencies, business and academia, to do good things about supportive environments for healthy lifestyles. As Boyd Swinburn has argued, on the evidence of Colac, if seriously funded, these programs could make a difference.

Further in relation to the Healthy Living Centres idea, the Canadian government of Alberta has a program called the Alberta Promise: it's quite glossy and seeks pledges about the 'future of our children'. You might be familiar with a little red truck that children tow behind them in American comics: that truck is the symbol of the Alberta Promise. What they do is, on the one hand, accredit providers of services about healthy living. On the other, they accredit private sector funders and they bring the two groups together. The government stands back and says, 'if you're a funder, fund anybody on the list to the amount you want'. **If you put the Healthy Living Centres idea from the United Kingdom together with the Alberta Promise idea and you properly accredit and specify both sides of the equation, there's the potential for something to**

**really start cooking.** You can put government funds on the table, you can marshal private sector funds and you can demand ethical investment partnerships in local communities.

The progress and innovations of the Australian Better Health Initiatives are most worthwhile, though the scope of the Initiative may be judged as being paltry, they have, nonetheless enormous potential to make changes to the paradigm of health care.

## Discussion

**Audience member 1** observed that the capacity of programs, referred to by Boyd Swinburn, to solicit community engagement in the production of new knowledge may well address the sort of communication gap between experts and the population at large noted as a stumbling block in the first seminar of the Oxford Health Alliance series, on sustainability. Does the radical revision of epistemology implied by these methods present a threat to the identity of the mission of population health, perhaps auguring its fracturing into separate disciplines?

Boyd Swinburn said that one of the problems with health promotion in the past had been its capacity to show an impact. Where new forms of intervention can demonstrate results there is no risk of division. As an endocrinologist, he had trained in the medical model but shifted towards health promotion because of its bigger impact. In relation to empowerment, there's a huge amount to be gained. If the sixteen communities in the region of the intervention can be combined and supported to learn from each other the discovery cycle will be shortened. Neither health professionals nor politicians have anything to fear from that.

**Audience member 2**, responsible for a national cancer advocacy unit, asked if any observations had been made of community impacts other than directly on the children. Information on wider impacts could add to the knowledge on the effects of community participation.

Boyd Swinburn responded that the Colac program asked questions of the parents, specifically about parent behaviours and family behaviours around making meals, watching TV and that sort of thing. It does seem to have had some effect within the families and there is a huge potential to influence families. Families are quite hard things to get to. The only real avenues one has are through social marketing and through the settings that parents engage in, particularly schools and pre-schools. But families as families are absolutely central to this and one of the key ways the work is being done.

In relation to financial advantages of interventions like the Colac one, which was a demonstration project, the cost of rolling out the intervention across the country at the same level of intensity would be about half what we currently pay for lipitor, one cholesterol lowering drug. The cost of the French model, which is being currently rolled out, is about five times less than the Colac interventions. So this is a cheap intervention compare with a lot of things funded.

Ian Caterson added that we've spent too long looking for the one thing we can do: stop them eating something or make them do some exercise. Colac has shown that there may be some changes in areas but there are multiple small changes in a whole range of things which add up. We can't measure the effect of each of those changes but we can measure across the population an effect. But the only way to get that measure is to get the community involved.

In relation to the potential effects of an activated community, Stewart Truswell noted that the community of North Karelia in Finland had at one point the highest death rate from coronary heart disease of any country in the world. Knowledge of this prompted community outrage and activism. The widows said something has to be done about this. By changing diet and reducing smoking they got the heart death rate down.

**Dr Rob Moodie**, Chief Executive Officer, VicHealth (Victorian Health Promotion Foundation) observed that this is what is known as the tipping point, which has been reached with tobacco,

road trauma, HIV. We haven't quite got it there with obesity, certainly not with alcohol in Victoria (we're still at the PISSPOT stage).

Stephen Leeder observed that the notion of 'iconic' interventions was an idea with great potential that could be well incorporated into the National Better Health Initiative and other things with great benefit. Did Stewart Truswell see a role for a 'polypill' to serve an iconic role in the context of the developing world, where cardio-vascular disease is a major killer and likely to increasingly become so? Its effect could be registered very quickly, so that decreases in mortality could be demonstrated within two years. The cost for such a program in the Indian context would be about \$4 per month per person. Might the polypill serve as a wedge in, something that would be immediately commercially and politically saleable, providing a way to begin a full program to prevent cardio-vascular disease?

Stewart Truswell said that one of the problems facing a polypill program is the equity aspect. It may well be taken up by the affluent Indians, who number more than the total Australian population, but the peasantry will miss out. Boyd Swinburn said he was uncertain if the term 'iconic' was the ideal term. The active transport and school food projects in and of themselves cannot be expected to directly produce a lot of results, as the modelling shows. But we couldn't conceive of promoting healthy food for kids without doing something about the canteens and tuckshops. We virtually have to do but must recognise we have to get the ripple.

Rob Moodie said that the walking school bus might be seen as iconic, though in a somewhat different sense. Getting kids walking to and from school again is something fundamental to our community because it's about putting kids back on the streets again. It's an environmental issue, a physical activity issue and a safety issue as well. In Victoria driving to school has shot up, walking and cycling have plummeted. The fact that we now have to pay for a program to get kids to walk to school is extraordinary. We're paying for 30 years of fear. And this is also an iconic issue in that if we can't get the kids to walk to school in this generation we never will because people will literally lose their legs.

**Audience member 3** asked how the panel feel about making obesity into such a 'thing' for want of a better word. If you leave nutrition out of the equation for just a minute, the problem really is that we've lost our incidental physical activity, which is exactly what was just being discussed. It is virtually guaranteed that in ten years time no-one will be able to advise someone about exercise unless it's an exercise physiologist. It's going to create another territory. It'll be like optometrists not being able to examine the eyes of diabetics because the ophthalmologists don't like it.

Ian Caterson believed that the main issue here was that health professionals have to relinquish territory. Obesity is the one thing that can enable them to do that and do a little bit of health promotion and a little bit of exercise advice. It's not that drugs are being proscribed or someone is going blind because a vessel was missed. Rather it is rather that relatively healthy can be doing things early to prevent disease later, and we can all do a little bit of it. You don't have to be an exercise physiologist to know that when you walk to work you lose weight. Doctors are at the expensive, trained end but there are many more people at the other end who can help. We've got to get rid of the barriers, the specialisations. We've got to do more across the community.

Rob Moodie noted that all of the successful health promotion interventions over the last 30 or 40 years have involved a primary care system. Whether it's quitting cigarettes, road trauma – in which case the primary care system is the speed camera and police booze buses. There's also a role for general practice in this. It's about being a central point of referral in many cases.

Ross O'Donoghue also worried about stigmatising people, but thought to take the alternative and is just to ignore it was unacceptable. The way we're heading is to adjust everything up, airline seat, bigger meals and so on. It's beneficial to name it for what it is so we can get on and fix it. If we look around in the supermarket we might find 60 per cent of the people are overweight or obese. It gets hard to stigmatise people in those circumstances.

Ian Caterson noted, because it has come up at every discussion on this, that we are not increasing anorexia and eating disorders. There is no evidence of this.

**Audience member 4** of the University of Western Sydney and Sydney West, inquired of the existence of a dialogue between research and policy-makers and a mechanism to foster that, and the establishment of an innovation fund.

Boyd Swinburn said a lot of the contracts for research make the work heavily specified from the outset. The work done in Colac, in contrast, would never in a million years have got up for an NIH grant in the United States, where you have to know down to the last detail what's to be done. It would normally be inconceivable to say 'we're going to support an intervention. We don't know what the interventions are because we haven't worked with the community yet to develop their action plan. Only some governments and organisations that are prepared to take some of the risks associated with that will want to be involved. So long as its closely monitored, outputs and outcomes measure and so on, it is low risk. But the way research funding has been set up counters research of that type, even though it may be very important, be able to demonstrate results and have potential to be translated into action very quickly. In spite of all that, it doesn't get through the medical funding model.

In relation to the dialogue between researchers and policy makers, this dialogue depends on researchers giving ground. Researchers value independence, no-ones going to tell them what to do and so on. The strife involved in getting the ACE obesity findings published were, however, a necessary part of bringing that information into the world of policy.

**The New South Wales Minister for Health, John Hatzistergos**, agreed that the problem of funding was a frustrating issue. Health has just completed its Futures Plan. During discussion for the Plan the Minister noted Health expenditure as a proportion of the State budget had increased from 14 to 28 per cent over the last 20 years. If we continue to increase our Health spending as we have over the last five years we'll take up the total state budget within 30 years. So the issue is increasingly becoming 'how do you spend your money wisely to get the best outcomes?'. When you look at the projections, particularly for diabetes II such as that produced by the Centre for Overweight and Obesity, the demand is going to hit us like a tsunami. The implications of the extra expense, and the implications of this for the provision of other services such as Police, Education and other services are daunting, as are those for quality of life and life expectancy.

The Minister recognised the substantial challenge of how we get public attention on obesity without demonising or stigmatising people. The New South Wales Government has had a lot of success with its school interventions and some of these are likely to go national. And while 'wellness' may not be a popular focus for the Health Promotion sector, a program like the 'Life, Be In It' program of several years ago may benefit from some form of follow up. More generally, the maintenance of cooperation between sectors is essential in order to avoid the retreat into silos, in which case nothing will get done.

**Audience member 5** noted there was sound evidence to demonstrate the efficacy of coercive government actions restructuring the landscape underpinning personal health choices: when seat belts became compulsory, smoking was prohibited in certain areas and when cigarettes became more expensive. Economic and other structural incentives may provide important drivers to behavioural change. Nor should health educators be afraid of telling people what to do.

## **Priority Actions**

Rob Moodie, Chief Executive Officer, VicHealth (Victorian Health Promotion Foundation) and Chair of the seminar, asked speakers to imagine that they had the power to make one major change to improve healthy weight outcomes. What one thing would they do to make sure that things are better in ten years time in Australia than they are now?

Ross O'Donoghue felt that some type of response along the lines of Boyd Swinburn's suggestion, of some version of a program to create community capacity and supportive

environment, a well-specified, carefully considered, public-private partnership around funding community-based initiatives at the grass roots level. Now that might be work-based, neighbourhood or school-based. Basically it would be increasing opportunities for incidental activity and healthier access to food. A hybrid between the Alberta Promise and the Healthy Living would be a good thing, and relatively cheap compared to the cost of the pharmaceutical interventions we're already funding.

As for the second thing, it would be mad not to intervene in relation to what we know about the prevention of type II diabetes. At first pass the common reaction is to say it's too hard and can't be done. However, we have randomised control trials in similar countries with disparate populations which provide 'gold standard' evidence of effective intervention strategies. A program based on that experience could be rolled out nationally. If Medicare became a prime driver of that program, as a funding mechanism, that would enable states and territories to look at those sectors of the population that are traditionally hard to reach. Mainstream Australia, which accesses Medicare well, can go to the gym or physio, while resources can be freed up to access the remote populations and other who don't access those services well.

Boyd Swinburn recommended the creation of a national policy to drive obesity prevention, which is lacking at present. The New South Wales Government can be congratulated for its school food program. The fact that the program is going national is fantastic. We have to create the ripples from that. Another thing which we really need to look at is marketing, which undermines the healthy messages so much. In ten years time we're going to look back and say 'my god! Did we really let people target our kids like this?'. So that, plus the funding to support innovation at the community level, including support for adequate evaluation.

Stewart Truswell noted it was paradoxical that Australians hold so many world records while large percentages of Australians get no exercise at all, getting in the car to go 150 metres to buy more food. We know that inactivity is a risk factor in older people for things like osteoporosis and type II diabetes. The evidence about prevention of type II diabetes is very convincing, and the funding arrangements just have to be changed so people can have trainers, group gyms, dances or something so they get more exercise, as long as anyone who has pre-diabetes has a glucose intolerance test result.

On the polypill, the six component polypill was probably a bit much. The modified four component pill with only two anti-hypertensives and dropping the folic acid would probably be advisable. More will happen in India than will happen in this country, where the medical profession may want to have the individual prescriptions for quite a few years yet.

Rob Moodie said the metaphor for inactivity in Australia is that life has become like an AFL Grand Final where 100,000 people who need more exercise watch 36 people who don't need more exercise.

Ian Caterson said that in addition to the previous proposals, the first thing is to provide fresh fruit and vegetables at an equitable price across the community, which will probably involve a subsidy. Secondly, there should be an audit of the personnel within the Health system, because we have the whole range of expertise from public health through to nutritionist and dieticians who are dealing with the problem directly. All the relevant personnel need reorganising from their silos into an effective system, so that both those in the community and those affected by early disease can have something done.

## Summary

The Australian people enjoy one of the highest living standards in the world, these high standards being reflected in the standing record of increasing longevity and in broad measures of well-being and quality of life. With this health comes great capacity to think, plan and act in ways to further improve future prospects for health. The 2006 Oxford Health Alliance Seminar Series provides an example of this capacity in action. Through the substance of the presentations and discussion arising, the Series has pre-empted and acted upon conditions underpinning future health – so becoming an input into future sustainability. It has demonstrated, to borrow presenter Tony McMichael's expression, that health is both an input into future prosperity, and a core output or social product which is a measure of quality of human achievement in its own right: 'health is the penultimate bottom line' says McMichael.

So the Series begins with a call to account, against the measure of future health and well-being. What are the final or summary recommendations of the presenters? Bob Douglas warns that contemporary culture has disabled peoples' capacity to react to an array of world changing events. He champions efforts to build new grass root forms of community organisation, building a populist wave to drive governments to action. Tony McMichael provides some gritty truths for such community forums to chew on, detailing the likely health costs that would be associated with current projections for global environmental degradation over the next century. He concluded, however, that government also has a vital role to play, through provision of leadership and coordination. Stephen Leeder shows that, in spite of the enormity of the health issues flowing from environmental disaster, the power of a discipline and the question it poses rests in its specificity. He counsels the use of Public Health research traditions such as 'forward epidemiology', advocacy and education, and the acknowledgement the Health scientist cannot act alone in planning for sustainable health futures. His concluding priority is a recommendation to encourage John Howard to pursue the development of nuclear power in his retirement.

Underlying the discussion of future scenarios for health of Seminar 1 is a suggestion of a bold and rational state, which is on the brink of coming to its senses by force of argument. Seminar 2 examines the history and current state of Occupational Health and Safety in Australia and raises a question mark over the idea of a rational state. Yossi Berger's recommended path for advancement in OH&S is to 'listen to workers' and advocate for safety from a workers point of view. He suggested the wives and mothers of workers might be usefully engaged to add teeth to safety audits and drives. Tim Driscoll tracks the sorry path of OH&S education and research, which has been victim to a series of shifts in government philosophy. The changes have seriously weakened capacity to raise OH&S standards. As his summary recommendation, he puts faith in a renewed emphasis on education, suggesting that OH&S education be delivered at the high school level, and to designers, architects, engineers and all those groups that don't currently have an awareness of OH&S but are in a position to significantly influence it. Kim Hobbs demonstrates how, for a large corporation like IBM, health and well-being programs can improve company profitability and employees health outcomes. She prioritise OH&S education in a school setting, and suggest that company board members should be obliged to work in problem areas of production for a week or so to get a grip on concrete safety realities. Malcolm Tulloch says that standards of safety are in the last analysis underpinned by capacity of workers to organise, and that government changes in this capacity have great bearing on safety outcomes in the workplace. He prioritises strong penalties for bosses responsible for workplace accidents and deaths as his final word.

Seminar 3 turns to specific 'how to' questions of prevention science, exploring new models of prevention in respect to obesity and overweight. Boyd Swinburn lays out the experience of whole-of-community interventions in Colac, showing how the involvement of local communities can adapt interventions to their circumstances to obtain remarkable outcomes. He also introduced a tool – Assessing Cost Effectiveness – which allows comparison of cost effectiveness between interventions which are highly dissimilar in terms of scale and delivery, a method which is likely to have very broad application in the future. He prioritises: a review of food marketing, particularly marketing to young people; nationally coordinated policy and;

funding for community-based interventions. Stuart Truswell reiterates the power of pharmaceutical products to prevent disease and extend quality of life, discussing how a 'polypill' containing a combination of drugs designed to prevent cardiovascular disease, may be applied to a whole population of people in their senior years to address the risk of cardiovascular disease for that group. He agreed with other speakers' emphasis on the importance of exercise and concludes that a program incorporating a four component version of the polypill should be pursued, particularly in developing countries. Ian Cameron says focus on obesity is the main game and the way to best modify a host of health risks. He also stressed the role of diet and exercise. In conclusion, he advocates the importance of cheap and available fresh fruit and vegetables, for which a form of subsidy might be considered. Ross O'Donoghue shows how the Australian Better Health Initiative is coordinating national action around obesity. He pays particular attention, in his final remarks: to the value of community-based work and; the potential use of allied health professionals to help support weight reduction for at risk over 45s, citing conclusive recent evidence from Finland and the United States in relation to prevention of type II diabetes. While acknowledge the significance of progress in whole-of-community interventions, O'Donoghue reinforces Stuart Truswell's case that prevention is not universally synonymous with the health promotion objects of capacity and settings: 'If we can't respond to the best evidence we've ever seen for lifestyle modification, what are we here?' says O'Donoghue.