



Summary Report of Workshop on Envisioning Public Health in the 21st Century

October 1998

Introduction

What will be the significant challenges for the public's health in the next century? How well are we prepared for these? What would the public health system look like if we got it right for improving and maintaining the health of the Australian population? What do we need to do now to get there?

These are some of the questions which formed the basis of discussion at the 'Envisioning Public Health in the 21st Century' workshop held on 20 October 1998 in Melbourne. The workshop took advantage of the visit to Australia by Professor Leonard Syme (Professor Emeritus of Epidemiology, School of Public Health, University of California, Berkeley).

Leaders from a range of fields – health researchers, educators, public health officials, and those working in occupational health and safety, environment, human rights, business and multimedia – were led through a challenging day by Dr Norman Swan. (A list of participants is included in Appendix 1.)

Ms Liz Furler, First Assistant Secretary, Public Health Division, Department of Health and Aged Care, opened the workshop and explained the rationale for its development. The Commonwealth Minister for Health, Dr Michael Wooldridge has indicated a strong commitment to strengthening public health. Accordingly, his office has requested that a paper be developed which presents a vision for public health in the 21st Century. This workshop is to be part of a broader process which will canvass views widely and gather evidence and information to support the views being put forward.

At the end of the 20th Century, public health in Australia, as elsewhere, appears to be characterised by a low profile and even confusion about the meaning of the term in the wider community. In a 1997 Presidential Address in the United States, Professor Barry Levy, the immediate past President of the American Public Health Association, said that it was unfortunate that despite the fact that the majority of the population polled indicated support for public health ends such as clean water, safe food and good air quality, they did not understand the public health effort/endeavour that necessarily underpins those public health ends. The situation appears to be very similar in Australia. The population seems to appreciate the outputs of public health, but does not necessarily understand the effort required to produce them. Furthermore, there appears to be considerable confusion about the term 'public health'. To many people in the community, public health equates to public hospitals or Medicare. In New Zealand they have taken to using the term 'Population Health and Safety' because they believe that people better understand what that encompasses. It is apparent that the problem with the profile and reputation of public health in Australia diminishes the ability to gain public support for the work which is required to maintain and develop the public health infrastructure. Developing a strategy to enhance the recognition and reputation of public health in Australia will clearly need to be an element of any long term planning into the next century.

Despite this, there have been significant public health achievements in the 20th Century, particularly in relation to communicable disease control, smoking reduction and decreases in road injury and death. A number of major challenges remain, however, in the areas of Aboriginal and Torres Strait Islander health, environmental health, chronic degenerative diseases and ill health associated with social and economic disadvantage.

What is required is both deployment of vertical strategies which address particular public health issues, and concentration on building the infrastructure and capacity of a robust public health system.

Currently, Commonwealth expenditure on public health amounts to approximately 1.3% of health outlays within the former Health and Family Services portfolio. If the contribution of States and local government was taken into account, total expenditure on public health is estimated roughly at around 5% of health outlays. In the current tight fiscal environment, the capacity of public health to move into new areas is limited because of the way in which that would detract from our constant vigilance in areas like communicable disease.

Context for change: Summary of presentations

A series of panel presentations was made to discuss the context in which public health is likely to be operating into the 21st Century. Speakers included:

- Dr John Wiseman, Associate Professor School of Social Science and Planning, RMIT
- Mr Barrie Thomas, The Body Shop
- Mr John Rimmer, Chair, Media Committee, Australia Council
- Professor David Wilmoth, Deputy Vice-Chancellor (International), RMIT
- Dr Theo Vos, Public Health and Development Division, Victorian Department of Human Services

Key points made in each presentation and the discussions which followed them are summarised below.

The Changing Nature of the Nation – The Domestic Response – Dr John Wiseman

- Globalisation can be defined in terms of the way in which space and time have been compressed by financial information resource flows, so that distant actions increasingly have local impacts.
- Globalisation is not a catastrophe or a panacea – it is a set of relationships which we have to demystify and understand.
- The dominant responses to globalisation over the last 10 years have been more or less extreme versions of free market public policy and free market economic rationalism.
- Think global, act local is no longer an adequate guide. We need to develop skills and experience to enable us to think and act at a range of levels – local, national and global. This means that we need to defend and strengthen local economies and services whilst also designing state and national policies to strengthen ecologically sustainable industries, generate jobs and provide adequate community services.
- There is also a need to re-regulate global financial markets to discourage speculation and encourage long-term, productive investment.
- Development is not merely about delivering sound budgets and fiscal management. It is also about developing and maintaining local and national infrastructure, such as roads, health care and education, as well as empowering people.
- It will be important to work towards upward harmonisation for poorer countries in terms of public policy and public health.

- Will nations have less latitude to reassert their statehood because globalism has gone too far? If this is the case, it will be important that control over public policy and sovereignty is regathered without descending to a protectionist nationalism.
- If the dominant policies in relation to the global economy are formulated from the viewpoint of corporations, they could lead to environmental destruction and increasing polarisation between the rich and poor. It is extremely important, therefore, that the health of financial institutions and corporations is not the only consideration. The health of populations must also be a major focus.

The Changing Nature of Work – Mr Barrie Thomas

- Current trends are pointing to increased use of tele-commuting, job sharing and use of part-time workers in the future.
- There appears to be a trend towards decreasing leisure time.
- The key to the workplace of the future will be flexibility.
- Business should not be viewed as being apart from society, but as a part of society.
- Business must face up to social and environmental responsibilities. Among the social responsibilities which business must face is the relationship between employers and employees. People want to find meaning in their work. They want to be valued and respected, not just regarded as assets which can be bought and sold.
- Work is such a significant part of people's lives that a challenge for the public health community is to focus on the workplace as the medium for prevention and promotion and give it a higher priority.

The Changing Nature of Economies and Technologies – Mr John Rimmer

- New information management and communication technologies are leading to changes in the structures of economic activity. The transaction costs to a firm for doing things internally used to be less than doing them externally. Technology, however, is changing this.
- There is a move to the development of electronic business networks which are loosely linked chains of suppliers, producers, competitors and consumers.
- Technology is leading us to a need to pay closer attention to change management. People and firms often undervalue the difficulty, costs and management processes required to make a change from A to B. It is therefore important that a developmental perspective be built in, including an understanding about the sequencing of change.
- There needs to be a better architecture of the globalised system. Each unit needs to have its own statement of rules and procedures which will strengthen and build the institutions and components of the system.
- It is likely that the move to contractual arrangements with external bodies/electronic business networks will be different in different sorts of activities. Each business/activity will need to assess the degree to which it shifts in this direction based on the relative costs and benefits.
- A range of settings and forums will be engaged to design the architecture for a globalised economic system.

Global Baby or Global Bathwater – Professor David Wilmoth

- We are still a very long way from a global economy. Only certain sectors are internationalising and those sectors seem to be disarticulating within nations into sectors, regions or cities that are more closely linked internationally than domestically or to their hinterlands.
- Population growth and movement, technology, resource utilisation and internationalism are creating unprecedented urban concentrations. Although the set of urban services needed to sustain health in these megacities are local – clean water and sanitation, shelter, energy, security, and health services – the procurement of the necessary public health infrastructure has global implications due to the massive expenditure required.
- One of the key questions we may wish to consider in looking to 2020 is the global population/resources relationship. Food security and the geopolitics of resources can be expected to become very prominent issues.
- Resources and environmental matters will undoubtedly create greater cause for international conflict. Hope of creating an integrated global society rests on a stable security framework that may not be there in the future.
- Whilst world connectivity is growing at a dramatic rate, the majority of the population in disadvantaged continents still does not receive basic telephone services. There is a need to deal with the distribution of information access as a primary step.
- Over the next 25 years, do we see the inexorable rise of a global economy, society and culture and with it a global system of governance and some sort of global public health regime? It is possible to think of a form of global governance which has the consent of those governed, the means to assure security and justice, and the ability to regulate economic and environmental issues as necessary. However, the mechanisms of the global corporate sector are so much more effectively articulated than supra-nation state political processes. Nevertheless, we should not throw the baby of nascent globalism out with the bathwater.

The Changing Nature of Community (Burden of Disease) – Dr Theo Vos

- There are three things which will have a major impact on population health issues: 1) changes in the population; 2) changes in health status, and 3) the response of health services and the associated costs.
- Changes in the population – Baby boomers are now entering age groups in which they are going to be greater consumers of health services and develop health problems to a greater extent than they have so far. This will have quite an impact on health services.
- Changes in health status – Measures of life expectancy show that over the period 1979-1996 (in Victoria) favourable trends have been dominating with the greatest gains made in the areas of cardiovascular mortality, mortality from traffic accidents and mortality associated with smoking in men. However, smoking-related mortality among women is increasing, as is diabetes in older men, and by far the biggest increase is in drug-related deaths.
- The response of health services and associated costs – There is a very important and growing role for public health to inform decision-making at a population level about what the most cost-effective things we, as a society, should spend our health dollar on.

These presentations reminded participants of the global context in which public health operates. Whilst it was recognised that the full extent and nature of changes we will face is difficult to predict, the importance of working at a range of levels – local, national and global – to design and build a strong architecture and infrastructure of institutions and units within the global system was stressed.

Some particular threats to public health were identified. These included the formulation of dominant policies in relation to the global economy from the viewpoint of corporations without consideration for the health of populations; the increasing trend towards urban concentrations and issues in relation to resource distribution and public health infrastructure required to support megacities; and the need for public health to inform decision-making at a population level about how the health dollar can be spent most effectively, given increasing demands on health service costs.

Professor Leonard Syme, Professor Emeritus of Epidemiology, University of California – How will the health of the public change towards 2020?

Within this scene set by the panel presentations, Professor Syme argued for a different kind of health research and approach to public health action. He suggested that:

- If we are to deal with increasing pressures on the medical care system we need to do a better job of disease prevention and health promotion. Consequently there needs to be a rethinking of the disease-based focus to health research towards a focus based on the determinants of health (e.g. smoking-related diseases, diseases associated with poverty, sexually transmitted diseases etc.). This type of classification would enable public health practitioners to better direct effort to interventions which will effectively prevent disease and promote health.
- Given increasing life expectancy and consequent increases in pain and disability in later life, new approaches to the study of quality of life will need to be developed. This will require real collaborative work with other disciplines such as anthropology.
- Social class is an overwhelming force which affects health and disease and we are going to need to gain a much greater understanding of the crucial ingredients and relationships between social class and health.
- A key population target group for public health interventions in the future is children because many of the risk factors for disease in adults actually begin early in life.
- Public health practitioners need to learn new ways of working with diverse communities and working with people in those communities as partners, rather than taking on the role of experts.

(Full transcripts of each presentation made in this part of the proceedings are included in Appendix 2.)

Critical Issues: Mind mapping exercise

Participants were asked to draw on the information discussed earlier as well as their own ideas to identify a list of factors which could have significant impacts on the health of the population by 2020. Where a number of factors were related, these relationships were identified. Participants were then provided with seven stickers and asked to use these to identify the seven factors which they felt would have the greatest impacts on population health in 2020. The full results are shown in the Appendix 3.

The issues which many participants felt would have significant impacts on health in the future were:

- Global recession.
- Environmental degradation and global warming.
- A less stable political environment.
- The collapse of urban infrastructure.
- Increasing polarisation in the distribution of wealth.
- Increases in vulnerable populations.
- Emerging diseases.
- Increased ability to predict disease risk in individuals.
- Increasing costs and demand for medical services.
- Increasing demands for social and community support.

Overall, this exercise indicated a concern about the global economic environment and its translation into increased polarity in wealth distribution, resulting in more vulnerable populations. It also highlighted the fact that the health of the population in the future will depend on factors which are particularly difficult to address, such as environmental degradation, the collapse of urban infrastructure, and less stable political environments. These are issues which the public health fraternity will have great difficulty dealing with. Professor Syme made the observation that it is evident that public health work will primarily be pursued outside the health sector.

Areas for Action

The workshop identified four major areas for action in order to ensure preparedness for the 21st Century. These are:

1. A strategic Research and Development agenda which builds alliances between research, policy and practice.
2. Mobilisation of leadership and investment across diverse sectors.
3. Strengthening of family functioning and community capacity for public health action.
4. Establishing health gain as an identified and credible criterion in economic policy formulation.

1. A strategic Research and Development agenda which builds alliances between research, policy and practice.

Research and development is crucial for public health action but in order to face the challenges that will be with us in the 21st Century a different kind of approach to public health research and development will be needed.

This group argued that there are two elements of work that need to be undertaken to strengthen the relationship between research and public health action in the immediate to long term:

The first is a refocussing of the research and development agenda to enhance Australia's health protection, promotion and ill health prevention efforts. In addition to the current disease focus of much of our research and development effort we will also require a research agenda that focuses on:

- The determinants of health (including risk factors, social gradient of health status and quality of life);
- Interventions and practices (including children as a key population target group and the development of ways of working in diverse communities); and
- Policy (including the impacts of policy in other policy areas).

Key policy initiatives and actions:

- National initiative to foster research into the structural determinants of health and the social gradient of health status (including use of information that is emerging from the Australian Burden of Disease study) through the development of a series of 'green papers' similar to the UK Contract for Health;
- National initiative to examine early childhood interventions and work being undertaken with diverse communities, that hold the potential for health gain;
- National initiative to foster investment from the private sector into public health research; and
- Work to look at ways of classifying determinants (possibly NPHP Planning and Practice Framework and/or Len Syme model) in a way that makes sense for public health action.

The second is reform to the system of research and development funding, production and utilisation, to support these efforts.

The health system requires a commitment to investing in infrastructure to build the capacity for fundamental research into public health as well as better coordination of the efforts currently undertaken by jurisdictions, the NHMRC, and the AIHW and improved transfer of research findings into policy and practice.

Key steps to achieving this include:

- Systematically look at what barriers exist in the current system for research funding that mitigate against research into structural determinants, including an examination of possible unintended disincentives in the NHMRC grants system.
- Develop a more appropriate classification system for funding public health research and development. Joint NHMRC/National Public Health Partnership/Public Health Division.
- Establish a base for the commissioning of public health research within the Commonwealth health department and join with the NHMRC, Strategic Research and Development Committee to agree on a research and development agenda that reflects the needs of the health authority.
- Reposition and strengthen the NHMRC and its relationship with health authorities; and
- Undertake work to reconceptualise what is evidence for public health.

2. Strengthening community capacity for public health

One of the challenges put to the workshop by Len Syme was that in explaining Michael Marmot's work in the Whitehall study on the social gradient, one hypothesis that seems to make sense is the concept of control; i.e. as one moves down the social class hierarchy one has less opportunity to influence the events that affect one's life. This hypothesis holds challenges for public health professionals both in how they go about their work and the type of interventions that could be introduced to strengthen community control and improve health outcomes. There is a long history of community work in Australia, generally undertaken by communities themselves, non government and voluntary organisations, much of which has gone unrecognised, has been poorly funded and often not evaluated.

A goal for public health work is to ensure community involvement in health promotion and community development activities locally.

Key policy initiatives and actions:

- Commonwealth and States to agree that funding to support strengthening the capacity of communities/primary health care is important for the next decade and this should be included in health planning;
- Develop processes and reporting framework with all players at all levels on how they are doing this;
- Involve/invite business and the community in this undertaking;
- Democratise health planning processes at all levels;
- Action with a whole range of partners to (re)establish community involvement structures and processes e.g. public health, GPs, Children's Services, disability, HACC etc.; and
- Making community capacity building activities/competencies a part of health workers' jobs.

A first step is to examine and mount the evidence to support community capacity building activities. If community capacity building is to form part of a three year reform agenda Australian Health Ministers will need to commit to be involved and to create processes/focus for non-government organisations and business inclusion.

Some of the strategies that may be examined and implemented could include:

- Increased problem solving education in schools;
- Greater focus on the role of early childhood development in health care;
- Strengthened primary health care system;
- Community based integrated approaches to public health;
- Improved participatory processes;
- Social structures to support family and community;
- Settings (e.g. family and education) as units of intervention; and
- Community capacity building as an essential approach for public health.

Key milestones along the way could include:

- Evidence of improved family functioning in community settings (and health communities) starting to be collected;
- Significant increase (e.g. 10% per annum) in community involvement in public health issues and community groups actions;
- Changes in some of the key indicators in social and economic disadvantaged communities e.g. increase/decrease low birthweight, quality of well being etc.

3. Mobilisation of leadership and investment across diverse sectors.

There is currently no reliable estimate of the level of investment by all sectors in public health. Figures on government investment should be available in 1999 when the AIHW completes its first public health expenditure survey but the level of investment by the private, non-government sectors and sectors outside of health will be more difficult to gauge.

Despite this, it is known that there is an array of public health activities undertaken by the private, non-government and non-health-specific sectors. In addition, based on popular support for the goals of public health, it is reasonable to conclude that there is potential for increasing this level of activity. The question considered by this group was how can greater public health gains be achieved by mobilising leadership and investment in public health across these sectors.

The group suggested the following national policy initiatives:

- The establishment of a public health and business round table to:
 - Identify best practice in business/public sector partnerships and mobilise investment from business for public health activities;
 - Explore ways in which business can lead on public health initiatives both within their own workplaces in their work practices and in the communities in which they operate;
 - Explore ways in which business can lead the development of public health initiatives.
- A program to place public health trainees or to promote field experience for public health practitioners in sectors other than direct public health

(including education, industry, environment, transport, finance, taxation, and social security), and to incorporate public health streams in the training of other disciplines e.g. M. Law (Public Health), M. Environmental Science (Public Health).

- Mechanisms to link national and international health movements and to increase international collaboration (transfer of technologies encouraged).

Strategies for fostering leadership may include:

- a. Minister and others issuing public statements
- b. coverage of public health issues in non public health national forums
- c. health funding to non-health portfolios

4. Establishing health gain as an identified and credible criterion in economic policy formation

One of the main measures utilised to gauge Australia's economic success is increases in the Gross Domestic Product. Whilst GDP is widely acknowledged as an imperfect measure it is also often inaccurately taken to signify broader measures of the 'health, social stability...etc.' of the country. In its recent Human Development Index Report the United Nations pointed out that there were a number of indicators against which Australia ranked poorly (these included literacy levels, drug-related crimes etc.). This group explored the potential of using tools such as the Human Development Index and/or other indicators alongside GDP to give a broader picture of Australia's success and also explored mechanisms for including this type of information when decisions regarding economic policy were being made.

National policy initiatives:

- Develop a health impact assessment tool;
- Define critical elements of health creating policies and a tool to measure investment and success based on the Human Development Index;
- Develop models to examine health impacts of changes to tax and economic policy;
- Develop broad constituency of support for goal (ACOSS, PHA, ACF, private sector, institutes, JJJ etc.) including non-traditional champions and develop appropriate language to engage others;
- Implement through a coordinated strategic campaign through processes of government (and those with significant influences).

With a view to achieving the following:

- Within five years Treasury reports the Human Development Index at the same time as GDP;
- Increased investment in health creating policies within five years;
- Health Impact assessments are an essential part of tax and economic policy within five years.

Indicators of success could be:

- Downwards trend in GINI coefficient
- Proportionally fewer children living in poverty
- HDI indicators up/down

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Appendix 2

Transcripts from 'Envisioning Public Health in the 21st Century'

The Changing Nature of the Nation – The Domestic Response

Dr John Wiseman, Associate Professor School of Social Science and Planning, RMIT

I have been asked to open up and speak about globalisation. The idea of giving an introduction to responses to globalisation in five minutes is slightly bizarre, but perhaps it is appropriate if we define globalisation, as I would, in terms of the ways in which space and time have been compressed by financial information resource flows so that distant actions increasingly have local impacts. It is about the distant impacts of money markets in New York and riots in Indonesia; it is about global warming and the hole in the ozone layer; it is about Internet romances and the CNN news.

Contrary to popular opinion globalisation is not a panacea or a catastrophe, it is a set of relationships which we have to demystify and understand so that we can see the winners and the losers and identify alternative policy strategies.

I would argue that more or less extreme versions of free market public policy, free market economic rationalism have clearly been the dominant responses to globalisation over the last ten years and these policies have created both winners and losers. You can find a lot of those losers in the outer suburbs of Australian cities and in rural and regional Australia. It is hardly surprising that some of those people who have been most burned by free market globalisation have been attracted to the protectionist policy of One Nation.

I want to argue that there are alternative responses to globalisation other than the extremes of free market economic rationalism on the one hand and racist nationalism on the other. Think global, act local, is no longer an adequate guide. We need to develop the skills and the experience to think and act at a range of local, national and global levels. We do need to defend and strengthen local economies and services like schools, hospitals, banks and childcare centres that make communities good and healthy places to live. But to defend the health of local communities in the globalised world, we also need state and national policies designed to strengthen ecologically sustainable industries, generate jobs and provide adequate community services.

Beyond our national borders, we need to support democracy and human rights and living standards in Indonesia and Malaysia and the Philippines. First, because human rights matter; second, because it is in our national interest to reverse the race to the bottom as Australian companies relocate to countries with lower wages and working conditions; and third, we need to re-regulate global financial markets to discourage speculation and encourage long term productive investment.

For the last ten years we have been told that the global money market cowboys are unstoppable. Yet, in a fairly extraordinary twist I guess, in the last two or three months an extraordinary array of politicians and business people are now clamouring for new institutions which can effectively control and regulate international financial transactions.

I therefore want to conclude with two quotes. The first is from an extremely significant speech made in the last few days by James Wolfensohn, President of the World Bank, about the future directions of the World Bank and also future directions for public policy. I quote: 'We see that in today's global economy countries that can attract private capital can deliver growth, but if they marginalise the poor, if they marginalise women and indigenous minorities, if they do not have a policy of inclusion their development is endangered and will not last. When we address budget imbalances we must recognise that programs to keep children in school may be lost, that programs to ensure health care for the poorest may be lost. In a global economy it is the totality of change in a country that matters.' To conclude Wolfensohn's quote: 'Development is not just about sound budgets and fiscal management, development is not just about technocratic fixes, development is about getting the macro economics right, yes, but it is also about building the roads, empowering the people, writing the laws, recognising the women, ruling the banking system, protecting the environment and inoculating the children.'

My final quote is from Mick Dodson and I quote: 'The struggle will continue in Geneva, just as it does now in Burketown and Bairnsdale. It may be popular now to promote superficial notions of One Nations by marginalising and excluding those Australians who do not fit the image, but we have a long experience of such things and we will continue to foster and work towards a vision of Australia where vilifying indigenous Australians is not an acceptable way to create a national identity to be proud of and where sacrificing our human rights is not seen as an acceptable price for reducing the budget deficit.'

Additional points made following the presentation:

I think one of the problems with globalisation is the way it is often used as a club to hit people over the head and say we cannot raise taxes, we cannot provide services because they don't do the same thing in the Philippines or Malaysia. Part of strengthening public policy/ public health in a country like Australia is to work with poorer countries (with governments with civil society) in the longer term, so that we talk about an upward harmonisation rather than a race to the bottom.

The bottom line is that we have choices in Australia about taxation levels, we make choices about employment if we can create 5% unemployment. We also need to make choices about redistributing taxation and progressive taxation in Australia.

In the last ten or fifteen years, national governments and national sovereignty have been undermined. Financial deregulation has been a key part of that. It is therefore striking that over the last two or three months a vast array of fairly senior and eminent opinion makers and public policy makers are saying, 'this can't go on, there has to be a change'.

Q. Are we going to find that governments in democracies are going to have less latitude to talk about the reassertion of the nation state, because globalism has gone too far and their electorates won't cope any more?

A. The important thing will be to find the trick of regathering sovereignty, of regathering some control over public policy without descending into a kind of protectionist nationalism and that seems to me the danger. We want to recapture what public policy can do to re-establish a degree of national sovereignty but not in a protectionist, walls-up kind of way. I think we need to find ways of defending what is good about the local and the national while building bridges rather than putting up walls.

The dominant policies in relation to the global economy seem to be being implemented from the point of view of corporations which are suffering declining profits. From the point of view of third world economists and environmental economists this results in overproduction based on a view that more economic growth will trickle down and we have to put up with environmental destruction and polarisation because that is the cost of more economic growth. This is becoming increasingly evident in situations like Indonesia where it is becoming apparent that whole generations of children are being malnourished. This has implications for the future of a whole generation of the Indonesian population. When you are talking about that kind of level of public health danger then alternatives must be sought. You can talk about the health of financial institutions or corporations, but you also obviously have to also talk about the health of populations.

If globalisation is leading to a sense of loss of national identity and a belief that people in other countries are making decisions that affect our lives, this may lead people to believe that they are no longer in control of their destiny and have a detrimental impact on their health.

The Changing Nature of Work

Mr Barrie Thomas, The Body Shop

The future of work: I just want to share a few thoughts about what I think is happening generally, and then more specifically talk about the Body Shop experience.

Generally I think that when people talk about the future of work, they are talking about the future of workers and to me this throws up quite a few dilemmas and paradoxes. We talk about tele-commuting, people using computers and modems for working. We talk about more part time work being available and more job sharing. We in The Body Shop do try to job share and we try to use part time workers, but as I said, it does throw up some dilemmas for us. In The Body Shop we really do strongly believe in the value of training our staff. Each of our staff members gets up to seven days full time training a year, but obviously the more part time workers you put on and the more job sharing you embrace, then the more training you have to invest in people. So there is a tendency to not to want to go down the job sharing route because you have to invest more in other areas.

We are told there is going to be more leisure time available in the future, but in some of the pre-reading I was doing for the workshop, I see that really people are working harder than ever before. I note that in America the average male full time employee works forty seven hours a week now compared with only forty one hours ten years ago. So where is this leisure time?

I really think that the key aspect in the future will be flexibility in the workplace. I was delighted to be at the launch of the Education Department's Flexible Work Options Kit a few months ago. The Education Department has spent a lot of time looking at just how they can make their workplace more flexible and how can they recognise that employees do have many more responsibilities than just to their employer. They have family responsibilities, not just for young children, but increasingly responsibilities of older people/older dependents. We in The Body Shop worked with several other companies including Hewlett Packard to put together a resource kit to help employees who have these responsibilities for older people.

To me the future of work is inextricably linked with the future of business, in particular, the relationship of business to the community. It used to be said that 'the business of business is business'. I think that there is a growing awareness now that this is outdated thinking. Business is not apart from society, business is a part of society, so the problems that face the society are the responsibilities of business. Not only does this have ramifications for the responsibilities of business towards social and environmental problems (companies have to face up to their responsibilities in these areas) but it has implications for relationships between employer and employee. People want to find meaning in their work, they want to be valued and respected. They don't want to be just regarded as assets of the company to be bought and sold at whim. The key to me is that people want meaning in their work.

Most employees spend over 50% of their waking hours at work, so it is a big investment on their part. I have just recently been thinking about the relationship between employer and employee. A couple of things have happened to make me think about this – one was the fall in the value of the Australian dollar. As many of you will know The Body Shop is an offshoot of a U.K. company and most of our product comes from England, so when the Australian dollar fell our product loss rose very sharply and we had to look at cutting costs. The immediate reaction of many people was to think that we should be cutting staff. But it is my view that as a business we shouldn't be about just trying to maximise profits all the time. What we should be doing is creating opportunities for people. Also, just recently we have been recruiting for a senior position in the company. People in their CVs, when asked about their achievements, always elaborate on what they have done to reduce costs, raise productivity and how they have done more with less. There was nothing at all that people were saying about what they have done to increase the human spirit in the workplace, or the level of fun at work.

So to sum up, I think that business has to realise that if they want to really grow they must invest in their people. They must realise that people want meaning in their work. We are finding in our workplace, the more we put back into our people to give them meaning in their work then the more they respond and businesses thrive.

Additional comment made during discussion following the presentation:

Work is such a significant part of people's lives that a challenge for the public health community is to focus on the workplace as the medium for prevention and promotion and give it a higher priority than what we are doing at the moment.

The Changing Nature of Economies and Technologies

Mr John Rimmer, Chair, Media Committee, Australia Council

It's hard to find anything to say in five minutes which is not as simplistic and erroneous as many of the statements on this topic in the background papers which have been distributed for us. But I have a couple of observations which are somewhat disjointed but they make sense to me!

I'll be talking mainly about the impact of technologically extended capabilities for communication and information management. I'm not going to talk about technology in general and there's a whole area of bio-technology and its impact in the 21st Century which is a public health issue which I just mention in passing.

I also think it's important to adopt the stance which has been called 'techno-realism'. It is very easy to get involved in technological determinism either from a utopian or dis-topian point of view. Everything's changing technology and technology is going to make the sky fall in; or everything's changing with technology and new technology means everyone's going to have a wonderful future. When in fact, we're simply talking about a new range of tools and these tools enable automated processing; new information products and services; new ways of networking activity in the economy and they certainly lead to structural change in economies. But they're not totally new or innovative forms of structural change in economies. We've already had a couple of comments about trends which have been in place for centuries.

The key issues that I wanted to focus on in these few minutes are firstly, the way in which new information management and communication technologies lead to changing the structures of economic activity. The reason that firms exist is that the transaction costs of doing things internally are less than the transaction costs of doing them externally. Or the total benefit of doing things internally to a firm is greater than the benefits of doing it externally. Technology is changing that because the information limitations which lead you to say 'we want our in-house lawyers, or our in-house medical staff' no longer apply. So we're seeing a dramatic change in the structure of economic activity which you might call the development of electronic business networks. These networks are loosely linked chains of suppliers, producers, competitors, complimentors and consumers in networks which, in a range of areas in the economy, are starting to look more like health services have been for a while because health services have always been a form of 'prosumption' where production and consumption are done in a joint network between providers and consumers. So, there is an increasing development of what you might call electronic business networks leading to changed in firms and on the economy as a whole.

Secondly, I think the experience with technology is leading us to a requirement to have a very close attention to change management. Simply saying that 'a way of operating B is much better than a way of operating A, so let's all shift to B' tends to dramatically undervalue the difficulty of getting from A to B; the costs of getting from A to B and the management processes of getting from A to B. And I think this is very important in terms of changes in the global economy and financial markets. But some approaches to market liberalisation look rather like a Darwinian liberation of caged budgerigars to the wild in one impulse gesture, when what's required is a developmental perspective about the sequencing of events. From Indonesia they've learned that you need an effectively operating banking system before you have more extensive market liberalisation rather than having market liberalisation, having the banking system still run by a process of

corruption and having massive distortions in resource allocation. So a developmental perspective and an understanding about the sequencing of change. There are things about how the market, with almost perfect information and real-time trading, starts to take on characteristics better predicted by Chaos theory than by Equilibrium theory.

But the final point I wanted to make was that when we're talking about globalisation and localisation the ambiguities of centralisation and decentralisation, we're really searching for new metaphors. The best metaphor is actually a software engineering metaphor associated with Object Oriented software design which is that there needs to be a clear architecture. There certainly needs to be a better architecture of the global financial system, but that will be an architecture which involves most of the units having within them their own statements of rules and procedures, so we have what you might call 'distributed intelligence'. A distributed processing capability in the economy rather than just simply decentralisation, and the major issue that we need to face is the issue of institution building and the rebuilding and strengthening of the institutions of the architecture of the economy or civil society.

Q. What are the limits to contractual arrangements with external bodies?

A. I think the limits are different in different sorts of activities. There are now funds management organisations with \$20 billion under management and six staff. This is an extreme example. On the other hand, its hard to see a hospital ever operating like that, although it might operate more like a network than an industrial factory.

People will make calculations about the balance of costs and benefits.

Q. Who designs the architecture that you've described?

A. There are a range of settings, there is no one answer – there are a variety of forums and there are forums which are most appropriate to particular circumstances. The OECD has just had a conference attempting to define the new commercial rules of transnational commerce electronically with a focus on privacy, consumer protection, self-identification in cyberspace and although that conference was a stage along the way, it was significant.

Global Baby or Global Bathwater?

Professor David Wilmoth, Deputy Vice-Chancellor (International), RMIT

Mr Camdessus of the IMF, he of the folded arms, is listening to Dr Mahatir. He is saying: "We might consider global regulation of capital movements but let's not throw the baby of long-term investment out with the bathwater of the hedge funds."

Most of us are cosmopolitans, looking on the development of global production, trade, investment, communications and professional mobility generally with favour. Certainly, the global transmission of good public health practice. Over the next 25 years do we see the inexorable rise of a global economy and society and culture, and with it a system of global governance and some sort of global public health regime? This is the baby I would like to look at. We might be at the edge

of an abyss right now, with a global recession and a new millennium in perfect alignment, but it's an interesting time to speculate (and I don't mean in health futures hedge funds – like swaps over morbidity futures).

To most of the population of the world this is not an interesting question: the internationalised sector of the economy touches many lightly if at all. And the internationally exposed parts of the economies are not necessarily expanding to take us in – as Wallerstein has showed, there has been a degree of international integration of economies for centuries. We are still a very long way from a global economy (for example only 10% of domestic capital in emerging economies over the 1990s so far has been financed from abroad), and the direction is not necessarily towards integration (Alan Taylor's capital mobility index of current account imbalances relative to GDP shows the world is not even back up to the levels of the 1920s). And because it is only certain sectors that are internationalising, and them very selectively, national economies, to the extent they ever existed, are disarticulating into sectors, into regions and indeed into cities that are more closely linked internationally than domestically or to their hinterlands.

The great drivers of economic and social change – population growth and movement, technology, resource utilisation and, yes, internationalisation, are nevertheless creating unprecedented urban concentrations – the megacities that present the main challenges for us all, whether our outlooks be global or parochial. It is tempting to say the baby is population growth and the bathwater is the set of urban services needed to sustain health – clean water and sanitation, shelter, energy, security, and health services. Local though their sustainable remedy might be, the procurement of the necessary public health infrastructure is massively global – in E. Asia alone, \$2-2.5 trillion is needed over the next decade according to the World Bank, 7% of regional GDP or about 2% more of GDP than current levels. And this alongside the massive excess productive capacity which is the current target for the creative destruction of capital. Still want to go global?

Many don't. We are familiar with globalism's discontents, the extremes of nationalism driven by xenophobia against particular countries, the rise of racism directed at mobile populations or alleged controllers of local economies, uncomfortably close to home. We see religious fundamentalism reacting to secular invasion of cultures, lumpen racism reacting to elite cosmopolitanism, this all too close to home. Wonderfully wacky conspiracies, millennial doomsayers. These reactions reaffirm our commitment to globalism.

Or do they? Like Camdessus, we have to admit that something is going wrong with unfettered capital mobility. The ground of globalism is harder to stand on because its advocates are all too uncomfortably the corporate promoters of unhealthy products, the commodifiers of the collective or household sectors, or the media portrayals of Hollywood. It depends critically what it is that we seek to be global – it is possible to conceive of a marvellously rich interweaving of cultures and peoples, of economies and folkways, dare I say public health practices, rather than one hegemonic lifestyle.

Looking out to 2020 the key questions we may wish to consider could be:

The global population/resources relationship: the former is forecast well out past then (if now worryingly male given the new technology), the latter is claimed by optimists not to be a barrier as demonstrated by the technology and trade-driven secular decline in prices for energy, commodities, and food. But will we be able to handle the distributional implications of cornucopia, across the globe, for though

the factor costs of transport and communications continue to plummet, within regions and continents we have been unable to allocate to the needy, and not only in emergency. In particular, food security and the geopolitics of resources can be expected to be more prominent issue even if the Club of Rome keeps losing its bets with the economists.

Resources and environmental matters will undoubtedly contribute more cause for international conflict and for security measures to contain those conflicts – much of the hope of creating an integrated global society rests on a stable security framework that may not be there then. We are seeing only the beginning of the post-cold-war world and the great shatter zones of the Balkans, the Turkic-speaking peoples, sub-Saharan Africa will need massive standing public health support.

Within the world's regions, linked and competing as city states perhaps more than nation states, the megacities not at the top of the communications and control pyramid will create massive challenges for public health: the race to accommodate the millions is already creating infrastructure demands for capital and skills way beyond what is likely able to be assembled, with more than half the 70 urban centres over five million in Asia. How will this work through – it means not only a return to its roots for the public health movement but a huge training and education task ahead.

I am not an expert in disease control but it does seem as if the increasingly simpler ecosystems on which we rely are creating some marvellous opportunities for our dominant viral and bacterial enemies, for whom it is possible to say the purpose of life for us humans is merely to provide the host conditions, to increase their power as we find new ways to help them mutate into ever-resistant strains and travel quickly around the world.

This world connectivity, dramatically as it might be growing, still does not reach and possibly nor by 2020 will reach the majority of the population with basic telephone particularly in the disadvantaged continents. If we are creating some kind of noosphere, a kind of supra-individual intelligence, let us deal with the distribution of information access as a primary step and not post-abundance.

It is possible to think of a form of global governance which has the consent of those governed, the means to assure security and justice, the ability to regulate economic and environmental issues as necessary. We have a nascent system now, as the debate on the UN's 50th birthday tried to show – it's just that the mechanisms of the global corporate sector are so much more effectively articulated than supra-nation state political processes, and forces of reaction, of nationalism, fundamentalism, xenophobia, racism, so opposed to this governance.

So, to follow Mr Camdessus, we should not throw the baby of nascent globalism out with the bathwater of its unsavoury fellow-travellers.

The Changing Nature of Community (Burden Of Disease)

**Dr Theo Vos, Public Health and Development Division, Victorian
Department of Human Services**

The three issues that I want to talk about, that I think will have major impacts on population health issues, are 1) changes in the population; 2) changes in health status; and 3) the response of health services and the costs that are associated with that.

First of all, changes in the population. What I am showing you here is the actual number of people by age group that we expect to change in males and females. The most striking thing there is this big, huge baby boom that's moving across the age groups. Baby boomers are now entering into ages at which they are going to be greater consumers of health services and develop health problems more than they have so far and that will have quite an impact on health services.

Then about population health status. An overall measure – life expectancy – shows that the trends there are pretty favourable. Women currently in Victoria have a life expectancy of close to 82, in men it is 75.5. But there has been a steady increase in the last eighteen years that I have examined here at a rate of a quarter of a year annually for women and a third of a year for men annually. So even though there is a big gap between men and women it is slowly converging and I think it will take seventy five years for them to get together. That doesn't mean that there are not great differentials and I think the biggest differential is between the Aboriginal people in Victoria and the rest of Victorians.

It is very hard to get the right kind of figures to work with but my best guess is that for Koori women life expectancy is somewhere between 63 and 71.6. This is at least ten years less than in the rest of Victorians. For Koori men it is somewhere between 59 and 66.5 and once again a huge gap of at least nine to ten years (between men and women).

Now in more detail, what are the trends? I have just jotted down a number of trends that go in one way or another. On the whole by the increase in life expectancy the favourable trends are dominating and the biggest ones there are the dramatic decrease in cardiovascular mortality and mortality from traffic accidents but in general from all unintentional injuries. Smoking-related mortality in older men is dropping also and we are finally starting to reap the benefits of lower prevalence of smoking that men started having a couple of decades ago.

AIDS mortality is dropping quite dramatically. There are also favourable trends in things like Sudden Infant Death Syndrome, congenital abnormalities, perinatal problems and there are a number of others including alcohol related deaths and suicide in older women, that show favourable trends over the eighteen years that I have examined.

There are a number of problem areas though. Smoking-related mortality in women is still increasing and that is part of the maturing of the smoking epidemic in women. Even though we see slight drops in the prevalence of smoking in women the ill effects that we see now are based on smoking habits of a couple of decades ago.

Diabetes in older men is on the increase and by far the biggest increase is in drug-related deaths. You can see my focus has been extremely narrow, I am not talking about 2020 but 2016 because that's what I happen to have around.

What this shows is a ranking of the mortality experience in the year 1996 and what we would expect in 2016 if you take the ageing effect of the population into account plus these past mortality trends. It is striking that there are far more green arrows pointing down than red arrows pointing up. Also there are dramatic changes in the ranking order of conditions. Just look at road traffic accidents – number five in men currently – it will drop down to 19. Even more dramatic is drug abuse or drug overdose deaths which are currently ranked 10 in terms of years of life lost, however if things carry on as they have in the last decade then it will shoot up to number two. These are predictions and you would hope that you would invalidate your own prediction by taking action to prevent this but it indicates that a lot of years of life of young people are getting lost because of drug abuse.

Another way of looking at it is not looking at individual diseases but what we can attribute to risk factors. I have taken tobacco here because I feel a bit more comfortable projecting the tobacco burden because a lot of the long-term consequences of tobacco are based on the smoking experience that we have now. What it shows is a quite a dramatic drop in the mortality experience due to tobacco in males but there is still an increase in the rate of years of life lost due to tobacco that we will see in women. The years of life lost are going to start to look very similar between males and females.

Then something about the cost of health services and to predict that I think is very complex. I will just throw a few things at you here. Between '86 and '96 total health expenditure in Australia went up by 30.6% and as a percentage of GDP that meant it went up from 7.7% to 8.5% so an increasing proportion of the country's wealth is spent on health.

Now if we look at population we expect it to grow by around 16% in the 20 years from 1996 onwards. If I just project hospital expenditure based on changes in age structure of the population it would rise by twice that amount. So just the fact that people are getting older and would tend to use more health services that would indicate that health expenditure would go up by 30%. However if we accept that health trends are indicating that people seem to be getting healthier in terms of less exposure to mortality risks, then actually hospital expenditure could drop by 14%. Now that of course is not what happens. But just to finish up a few conclusions based on these ideas.

First of all the ageing of the population will have a major influence, but usually when people start talking about predictions in the future they become very pessimistic. I think in health there are a lot of things that make you very optimistic. There are on the whole very favourable trends in health status. Recently when I was in Holland a policy person asked me there: 'Do you know how many people of 85 and older are looking after themselves at home?' She asked me to give her a percentage and I grossly overestimated the number of very dependent people. She said only 15% of 85 year olds and older are in institutionalised care and I think there is a trend that with growing age, people also are able to have a good quality of life until a later age. Now what does that mean for health services and the cost of health services? I think the issue is that there is an incredibly fast growing industry of medical technology and things that we can do in health. So if we look at the increases of the population in different age groups and look at mortality trends it is quite likely, as the figures in the last ten years have borne out, that the cost of health services will go up because we are very good at doing very expensive things – not only for the serious conditions but a lot of the milder conditions as well. Therefore I would say that I think there is a very important and growing role for public health to inform decision making at a population level about what are the most cost effective things that we can do. Because with the growing costs of health services, it is inevitable that we will need to start making choices and we will need to start making choices about where best we can invest our health dollars to get the greatest health gain.

Additional points made following the presentation:

Although disability calculations are not further than half way completed in the Victorian Burden of Disease Study, initial figures indicate that mental health conditions will become a more prominent part of the burden of disease in coming decades.

It appears (from information presented in other forums) that wealthy suburbs in cities are doing much better than other sectors of the population be they from the inner city, urban hinterland or rural and remote regions. So its possible that in relation to what was said earlier on about globalisation, it is not cities which are linking and integrating but parts of cities and the rest of those cities are disintegrating. In fact, the SEIFA Index, based on the '96 Census, shows that life expectancy is far better in the top 20% of small areas with high socioeconomic indicators. Then there is a gradient between the bottom third and the fourth quintile. So the bottom 60% in terms of small areas related to their socioeconomic status is pretty much the same. Therefore, rather than talking about a disintegration of society where some people are left behind, it looks like a disintegration of society where some people are running far ahead.

Keynote Address

How Will the Health of the Public Change Towards 2020?

Professor Leonard Syme, Professor Emeritus of Epidemiology, University of California

First as Theo has already indicated, the population is going to consist of many more older people who are going to have lots more illness and as is obvious, our medical care system is going to be even more pressured than it is now. So we are going to need to do a better job of disease prevention and health promotion and it is my view that it can't be done with the medical classification system that is now in place. So this is a big challenge.

Our current classification system focuses on diseases in the clinical mode and that may be of value for physicians in treating sick people, but it clearly is not of value in health promotion and disease prevention. The infectious disease triumph was primarily based on the fact that the disease classification system in place was something like water borne diseases, food borne disease, air borne diseases, vector borne diseases. Those classification schemes allowed us to focus attention on those aspects of the environment that were causing disease and they helped us to direct our efforts to intervention.

In the non-infectious diseases of concern today we have no words that are equivalent to that. I know in my country, if you were to submit a research grant application to the National Institute of Health (which supports 90% of research in my country) on nutritional deficiency diseases, they wouldn't know what to do with it, because it doesn't fit any of the neat clinical categories that constitutes the National Institutes of Health. You would be met with similar problems if you submitted grants on sexually transmitted diseases, or poverty diseases or smoking diseases. In the case of smoking diseases they would probably make a judgement as to whether it should go to heart or cancer, but by doing that they fundamentally miss the point of the issue, which is that we need to think about classifying diseases in terms of the risk factors they have in common so that we can do effective prevention.

On the same point, in addition to the classification problem, we are really compromising our work because we focus on single diseases. And as the population ages, this becomes increasingly burdensome. I think the classic example of our problem is the gold standard of research, namely the clinical trial. In a clinical trial we typically require that subjects have only one clearly and narrowly defined disease. For example if we were developing a drug for hypertension, we would typically want people with moderate hypertension and refer people with very high hypertension for treatment. We would probably want to eliminate hypertensives with diabetes or with left ventricular hypertrophy or EKG abnormalities or kidney disease and other problems. And we do this because to have those other conditions in the system confounds our results. So we end up typically with the homogenous classification of disease in order to do our clinical trials and this homogeneity obviously is not representative of the real world.

And as the population ages, comorbidity is a major fact of life, it is an awkward reality that causes us discomfort in our research and we don't know how to study it well.

In my view, most clinical trials are irrelevant for this reason. They may be good research, but they rarely have anything to do with the real world. That is perhaps an exaggeration, but I think you see my point.

The second major point is that we are going to have more and more people avoiding death, as Theo mentioned, and instead have a population living for many years with pain and disability. That means we are going to have to study quality of life and not simply morbidity and mortality. This is a major problem. I was invited to a conference a few years ago when we were just beginning to take seriously the health of women. The fact is most epidemiologists haven't studied women because women are healthier and we decide they are healthier because they live eight years longer on average than men. The fact that women have more diagnoses and more doctor visits and more prescribed drugs is trivialised as being due to something else. But clearly they are healthier because they live eight years longer! This, in spite of the fact that the evidence is overwhelming that those eight extra years are not independent years. The evidence is clear that women have more compromises in terms of ability to move from bed to chair on their own, to bathe themselves, to eat by themselves – all of the measures of independent living are much higher in those eight extra years of life, so that the eight extra years are not quality years.

But we epidemiologists do not know how to talk about that. We study morbidity and mortality and we are going to have to begin to develop a new approach to this issue. That means we are going to have to start doing qualitative studies and that means we are going to have to start to talk to disciplines like Anthropologists, which we have not done well. It is a major challenge for the future that I think we have no alternative but to think about.

Third, we are going to need to address probably the most important risk factor of all – namely social class. It is the overwhelming force that affects health and disease and we are going to need to understand it better than we do now. I won't go through my argument on this and perhaps some of you have heard my argument about the gradient from the British Civil Service and the importance of an issue like control of destiny, but whether that's the right interpretation of the gradients or not, we are going to need to develop a better understanding of what are the crucial ingredients in social class.

If we continue to study only poor and disadvantaged populations we are probably doomed, because everything is broken in those groups. We have low income, low education, bad nutrition, bad medical care and bad housing and to disentangle any of those things it seems to me is very unlikely.

Therefore we are going to need to study the gradient at the upper ranges to get some sense of what's driving this relationship. And its only in that way I think that we will be able to develop appropriate interventions. For example if the control argument is a good one, there are things we can do to enhance the ability of populations to manage their lives, to empower them and to empower communities to deal with this problem. This is something we are going to have to come to terms with. Perhaps we can talk about this later in the day.

The fourth issue is in the end we are going to need to address the key population target group – namely children. Many of our difficulties in identifying risk factors in adults are that those risk factors are the legacies of a risk circumstance that began early in life.

Without getting into all the details, it's to me clear, that the risk factor information we have for almost all the diseases of concern today are very inefficient and inappropriate. The strength of those risk factors is really poor. In fact I am talking about the best ones; cholesterol, blood pressure and smoking. The relative risk associated with the efficiency of those risk factors in predicting disease is not good.

One hypothesis is that those risk factors actually began early in life and in fact most of the risk factors of concern in adults can be found in adults, I am talking about respiratory function, cholesterol and obesity and blood pressure and temperament, a whole long list. And the evidence is also fairly clear that if we can identify those risk factors in children and intervene we can really make a difference in later life. We haven't done a very good job in studying children, at least we epidemiologists haven't, because children don't have enough disease. If we don't have disease and outcomes we don't really know how to proceed. So we really need to rethink our outcome measures and include in our armoury things like appropriate child development, which we really don't know much about. So this is going to be a major challenge that I think we have no alternative but to consider.

And finally we are going to need to address the fact that we live in diverse communities and that our interventions will need to take this into account in ways that are very foreign to us. As everyone in this room knows many of our interventions depend on informing people about risk factors in the hope that people will then rush home in the interests of good health to change their behaviours. We also know that that hardly ever happens. Changes in behaviour do take place but rarely under our urging. So we are going to need to learn new ways of working with diverse communities and that, I think, is a real challenge for us. We are going to have to learn a new way of being an expert. To learn to become experts in the art of not being an expert. Of learning from and working with the people in those communities as true partners. This is an overwhelmingly difficult challenge and I don't think any of our training programs really equip us to do this but again I don't think we have any alternative but to give that a shot. So with that I will stop and perhaps we can have a few questions.

Additional points made following the presentation:

Most public health training programs don't include people from the communities we intend to target. This is something which should be addressed if we want to be serious about empowering communities to deal with their own problems.

Interdisciplinary groups rarely are (interdisciplinary). They are usually multidisciplinary where everybody does their own thing in the same room on the same topic but with no real connection. We need to do better than this so in a list of major challenges for the future, that's clearly one. The heart of it is to do training differently.

Appendix 3 - Mind Mapping activity: Transcript of results

Locus = The Population's Health in 2020

Collapse of Urban Infrastruct. (14)	+Emerging diseases (8)	+Non convent'l religions (1)	+Demand for social and community support (7)	Less stable political envt (14)	+Conc. of media ownership & control of info (3)	+Altern've family structures (1)	+Trend to strategic research (1)	+Children as drivers of change (1)	+Choice/ demand for healthy lifestyles (2)
-Size and viability of rural commun's (1)	+Chronic illness (1)	The Age of Enlight't (1)	+Polar'n of wealth distrib'n (9)	Aust Red Army Faction (1)	+Advert'g of unhealthy behaviours (2)	Population growth control (1)	-Invest't in humanities & social sciences (3)		+Self employ't (1)
Env'tl degrad'n & global warming (18)	+Costs of medical services & demand (8)	+Human rights and ethical account'y (2)		-2 party political system (1)	Worsening nutrition (2)		Aust invites IMF in (1)		+Power of corp'ns (4)
+Natural disasters (2)	+Expect'ns of immort'y (2)			Dereg. of how services are organised (1)	+Demand for fast foods (1)		+Preval. of telemed. (2)		Unemploy't not a social category (9)
Global recession (7)	+Effective treatment of disease (1)			+&- Effects of taxation on health (3)	+Access to health info (1)				
Global emotional decline (2)	+Ability to predict disease risk in indiv's (7)			Invasion/War (1)					
+Vulner. Populations (5)	-Smokers (1)								
+Drug abuse (7)	+Service provision by non-reg practitioners (2)								
	+Prevent'n of disease (10)								

+ indicates an increasing trend

- indicates a decreasing trend