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ENVIRONMENTAL THREATS TO PUBLIC HEALTH

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1   The 2006 Theme

Thank you for the opportunity to participate in the 2006 Public Health Association Conference. Twenty-one years ago in 1985 I was first invited to speak at the conference about Māori health perspectives, although then the body was known as ANZSERCH, the Australia and New Zealand Society for Epidemiological Research and Community Health and it was a relatively small group. By 1988 the joint Australia and New Zealand Society had been dissolved and the Public Health Association of New Zealand established. I was fortunate enough to be able deliver an address to the Association at Lincoln University in 1992. On that occasion I focussed on 'Māori, Health and the State'. Since then I have been privileged to speak at four other PHA conferences, in 1994 at Palmerston North ('The Family and Health Status'), in 1996 at Auckland ('Health and Heritage: cultural identity, Māori health status and access to te ao Māori'), in 1999 at Wellington ('Public Health Strategies for Māori'), in 2000 at Palmerston North ('Mental Health: New Public Health Challenges for Māori'), and in 2003 at Ngaruawahia ('Foundations: Maori Contributions to Public Health in New Zealand').

2   This year, in Palmerston North again, the focus for the Conference is on 'Sustaining Public Health'. However, I am aware that because public health can mean different things, 'Sustaining Public Health' has more that one implication. Public health can refer to health interventions at population levels (rather than individual or clinical levels), or it can refer to the work undertaken by public health units, primary care organisations and community health agencies, or it can be used to describe those aspects of health services that are funded from vote : health. From time to time concern about the sustainability of all three has been voiced which makes the theme of the 2006 Conference especially relevant.

3   The Challenge

Essentially there is only one point I wanted to make today: it is that the challenge facing public health, no matter how defined, is linked to navigating the relationship between peoples and their environments in order to achieve the best possible gains for health. In other words, in contrast to other approaches to health care, where energies are focussed down on the treatment of individual patients in a clinic or hospital, or on the rehabilitation of people who have disabilities, public health focuses outwards to examine the ways in which families, communities and whole populations experience the world around them. It is an ecological approach and the underlying assumption is that good health requires active management of environmental risks and the deployment of strategies to combat both environmental excesses and the vulnerabilities of people living in those environments.

4   Indigenous Public Health

Indigenous peoples have an approach to health that is based on a synergy with the natural environment. Not only was expert knowledge necessary for securing food, shelter, clothing and transport, but an additional challenge was to ensure that resources were available for future generations. Sustainability was part of an environmental ethic. The link between people and nature was celebrated in world views, stories, songs and genealogies and much indigenous knowledge was based on understandings that emerged from the relationship.

5   Māori Survival

In 2003 at Ngaruawahia I commented on the lengthy New Zealand tradition for an environmental approach to public health. When Māori voyagers reached Aotearoa a 1000 years or so ago, the major challenge was one of survival. To that end a code of conduct evolved to guide social interaction and behaviour and to synergise the needs of human inhabitants with an often harsh environment. Gradually tribes learned about their environment, at least enough to know what was safe, noa, what was risky, tapu, and what should be avoided at all costs, rahui. Adaptation to the cold, to dense bush, to ocean swells, to tough fern roots, to mountain peaks, took its toll on human life. Survival of future generations required adherence to safe practices that were relatively risk free. From that perspective the application of tapu was about safeguarding life and managing environmental resources in a sustainable way. And for the most part, safety was synonymous with the state of 'noa'.

From that perspective, the first public health exponents in Aotearoa were tohunga or tribal leaders who decided when to invoke the law of tapu and when to remove it. Their task was to identify environments that were unsafe and then to apply sanctions so that food resources were protected, environmental risks averted, and the survival of future generations assured. In other words they were instrumental in regulating lifestyles and providing guidelines for safe living. There are many interpretations of tapu. Now, most emphasise a sacred quality and are linked in some way to gods or divinities. But Te Rangi Hiroa (Sir Peter Buck) and others considered that tapu was linked to healthy practises. Tapu was a type of public health regulation, basically concerned with the avoidance of risk, protection of the environment and its resources, and the promotion of good health.

6   Contested Environments

The close understanding that existed between tribes and their environment came to a fairly abrupt end in the mid-nineteenth century. In part the loss of intimacy reflected a move away from pa and traditional villages to communes located closer to the settlements established by migrants from Europe. But it also reflected new types of environments and new environmental risks that were hitherto unknown to Māori. Moreover, the sweeping changes in New Zealand population structures which saw dramatic Maori depopulation and equally dramatic settler population expansion were accompanied by new approaches to health and to environmental risk management, no longer based

on the laws of tapu but on regulatory systems imposed by local and sometimes national authorities.

For Māori the disappointment was not only a change in living styles and exposure to new environments, but a failure to use the principles of tapu to understand new environments and to identify the new risks, and new threats to health and survival. The natural environment, which had been home to Māori for centuries, was replaced by man-made environments. A philosophy of environmental synergy gave way to of environmental exploitation and the introduction of competitiveness between peoples and their habitats. Hazardous environments emerged.

7 Hazardous Environments

Hazardous environments can take many forms. Floods, earthquakes, hurricanes, tsunami, and volcanic explosions are reminders that the natural environment can still present hazards that are largely beyond human control and can have cataclysmic results. In addition with changing demographic patterns, new technologies, new philosophies, multiple cultures living side by side, and scientific discoveries, there is a constant reshaping of natural, social, cultural, and economic environments. Without a capacity to adapt to the new environments, or to avoid the inherent risks, populations will be exposed to new heath threats. The challenge for public health is to manage the interface between populations and the hazards contained within the new environments.

Of the many environments hazardous to health, five are especially pertinent to discussions on sustainability: greenhouse environments, ideological environments, technological environments, consumer environments, and environments that foster dysfunctional human relationships.

8 Greenhouse Environments

The accumulation of greenhouse gases in the atmosphere, arising largely from the combustion of fossil fuels, has led to climate changes that have significant consequences for human health. Substantial increases in major environmental catastrophes such as heat waves, floods and droughts, hurricanes and tropical cyclones, have led directly to loss of life and large-scale injury. But there have also been changes in the ways disease is carried and in the production of food in vulnerable countries.

9 Malaria epidemics in Asia and South America have been linked to global warming as has cholera in Bangladesh. Climate change will impact most heavily on low-income countries. But because electricity is not available in many villages in under-developed countries, the use of biomass fuels remains important. Developed countries meanwhile have had the advantage of fossil fuels for many years, and now have access to other energy sources. They might be expected to take a lead in reducing carbon emissions. The Kyoto protocol is a start but by itself will not be sufficient to reverse some of the major impacts of global warming.

10   The health sector, a major user of energy, must also bear some responsibility for identifying cost effective adaptation options and for reducing further adverse health impacts of climate change. As champions for the health of populations, the PHA may well take a lead by planning for a number of renewable energy sources and reducing air pollution.

11   Ideological Environments
Other hazardous environments exist at a more abstract level. Ideologies that are based on unsubstantiated convictions, blind faith, and theoretical persuasions that have not been adequately tested, can bring risks to health. Political ideologies have the added risk of being imposed on whole populations even when the evidence for improving standards of health points may be in another direction. Neo-liberal ideologies for example place great emphasis on the rights of individuals to pursue their own interests and to do so with minimal interference from the state. Market forces and the maximisation of personal gain are key themes while collective alliances, shared responsibility and unequal inputs to achieve equality of outcome, are generally afforded less importance. In contrast, liberal democratic ideologies have stressed the importance of the state as an agent for achieving equity and equality between individuals. The resulting welfare state aims to be 'even-handed' between groups and individuals and to treat all people as if they were equal.

12   Both ideologies can pose risks to public health. By downplaying collectives, inequalities in society, ethnic differences, and cultural perspectives, the focus on individual rights can easily overlook the significance of family, whanau and community. Moreover, assumptions that individual need is simply a reflection of socio-economic circumstance, also overlooks the evidence that factors such as race, ethnicity and culture are also determinants of outcome. At the same time by instituting a centralised approach based on a highly interventionist state, the welfare state can also under-value local initiative, community difference, and ethnic priorities. Although representing two polar extremes, neo-liberal ideologies on the one hand, and liberal democratic ideologies on the other, can both contribute to the development of a society in which cultural, community and personal identities are masked in favour of individual supremacy (in the case of neo-liberalism) or in favour of the imposition of the protocols of state (in the case of liberal democratic ideologies).

13   Masking cultural identity and minimising differences between communities can also occur when data is presented to reflect an overall national perspective. National data tends to hide trends for individuals and small groups, especially if there is wide distribution away from the mean. The position of particular communities that may be performing poorly will not be reflected if the nation as whole is performing well. Although it is common practice to break down data into regions, age groups, and ethnicities, aggregated data can mask differences within a sub-group. Comparisons between Maori and non-Māori for example, are of limited value when attempting to identify trends between Māori or Māori progress over time

14 The challenge for public health is to promote approaches to health that are evidence based and which do not negate the significance of identity, ethnicity, community, and social connectedness.

15 Learning Environments
Close associations between education and health are well documented. In brief, good health outcomes are more likely to occur where there has been educational achievement. The reverse is also true. Where educational failure has occurred, health status is likely to be worse. Although New Zealand students were among the leaders in mathematics and reading in the Programme for International Student Assessment conducted by the OECD, the extent of disparities between different groups of students squashed any cause for celebration. Along with Australia and the United Kingdom, New Zealand was in the lower quarter of the thirty-two participating countries. Nearly one third of all Maori students for example leave secondary school without any formal secondary qualification. And at the tertiary level, although Māori participation rates have increased in phenomenal fashion, there is an uneven distribution with proportionately more Māori learners pursuing lower level qualifications through a mix of tertiary education institutions (universities, polytechnics, wānanga), private training enterprises and industry training.

16 Failure is no longer an acceptable outcome. Despite areas of brilliance and outstanding achievement, educational transformations are necessary, not only because our total performance is unsatisfactory, but also because students will need to be prepared to live in a different type of environment from the one we know today.

17 Learning for the future provides opportunities to identify future health impacts. Technology for instance will radically change education and society. Although the scope of new technology defies prediction, it will undoubtedly have high impact on health, both in the range of innovative treatment options that will become available but also in the creation of environments that could threaten health.

18 Consumer environments
Like populations in other developed countries, New Zealanders are subject to intensive and often covert marketing ploys that feed consumer appetites. While many consumers are able to take advantage of health-giving products, such as treadmills, running shoes and foods with reduced fat content, many more consumers fall prey to marketing strategies that promote the benefits of fast foods, alcohol, tobacco and even party pills. New Zealand's anti-smoking legislation has received world-wide recognition but although it can be expected to provide a global benchmark, it is less certain that all New Zealand communities will respond to the message with equal enthusiasm.

19 Environments that lead to diabetes are also good examples of the health risks imposed by hazardous consumer environments. Diabetes contributes excessively to the burden of disease in developed countries and is even predicted to become a serious problem in India and the African continent within a decade or two. The rates of type II diabetes are already

disproportionately high for Māori and Pacific peoples being over 8% compared to 3% for non-Māori. Over the age of 75 years at least 11% of that population have diabetes. In New Zealand diabetes causes an estimated 1200 deaths per year and is the third most common cause of death for Māori and Pacific males aged between 45 and 64 years. While there have been significant improvements in treatment, the prevalence is increasing, not decreasing. Clearly we are failing to arrest the problem. Instead the environment that leads to diabetes has been allowed to develop and even flourish, despite the known risks.

20 Environments that foster dysfunctional human relationships
There is mounting evidence that the major transformations in family form and community relationships over the past twenty or more years have led to significant health problems especially for children, youth, and older people. While family violence is not a new problem, a series of much publicised events have brought home the enormity of violence towards children and the contradictions that exist within society. Section 59 of the Criminal Justice Act for example allows for the use of 'reasonable force' towards children but has been used as a loop-hole to avoid prosecution in cases where the applied force has been clearly unreasonable. Advocates for the repeal of section 59 have argued that children should have at least the same level of protection as adults, and are not confident that all parents or carers can adopt 'reasonable' standards. Those against repeal of section 59 maintain that parents should be able to discipline their children without state interference, as long as it is 'reasonable'.

21 Efforts to intervene in families where dysfunction is evident occur at many levels. However, although a number of community agencies, including health agencies are actively involved in interventions with families, there are three limitations to their effectiveness. First, the family/whanau focus is often outside contractual obligations. The agency may be funded to deliver services to children, or older people, or youth. If family interventions become part of the delivery package, there may well be a financial burden on the agency because they are beyond the terms of a contract.

22 Second, for many families and whanau a number of agencies from a range of sectors are involved in service delivery but in a fragmented way. Health workers, well-child care workers, educational agencies, employment agencies and services for children and young people focus on particular objectives and interact with families and whānau to advance those goals. However, the uncoordinated approach from a variety of workers may ultimately bring more confusion than light. Remarkably, despite the efforts of a variety of workers, each interested in a particular aspect of a family problem, the underlying dynamics may be entirely overlooked.

23 The third limitation to effective family intervention is related to an under-developed intervention methodology that can be applied in family or whanau situations. Often family interventions are undertaken intuitively with good results, but engagement with collectives such as families requires different skills and different objectives.

24 Health Risks
Health risks from hazardous environments can come in many guises.

25 Climate change and global warming bring multiple health risks – some directly linked to catastrophic events, others a consequence of fundamental ecological changes that allow vector-spread diseases to assert themselves in new ways and in new places. Insofar as indigenous peoples have close and mutually re-enforcing relationships with natural environments, any force that undermines the relationship with impact on the spirit of the people and their wairua.

26 By imposing values and beliefs based on theoretical or economic philosophies, *ideological environments* have the capacity to weaken the soul of communities, families, and whanau by undervaluing the significance of cultural identity for health, the positive health roles that families can play as agents for health, and the importance of community connectedness as a platform for health. The impact is as much spiritual as material and in that sense also reflects on the taha wairua.

27 *Learning environments* have the potential to lift health status but only if they provide experiences where learners can feel valued, where learners are able to emerge with dignity, have the necessary tools to address the years ahead, and can plan for those who will follow them. Otherwise they will emerge from school with a sense of failure, an inability to negotiate risks to health, and less likelihood of securing resources necessary for sustained health and wellbeing. The risk will be to ways of thinking, feeling, and behaving – taha hinengaro.

28 *Consumer environments* bring mixed blessings. On the one hand they can provide higher standards of living, greater security and better health. But on the other they may simply increase access to lifestyles where obesity, diabetes, hypertension, addictions, and heart disease will prosper. The risks can be severe and life-threatening, impacting on bodily functions and mobility – taha tinana.

29 Environments that foster *dysfunctional human relationships* bring a multitude of health risks. Of particular concern is a failure to provide adequate care and nurturance to children, young people, and older family members. The costs of neglect and abuse have life-long consequences for both mental and physical health, and extend into future generations where the same patterns are likely to be inflicted. Taha whanau becomes jeopardised.

30 The PHA and Hazardous Environments
It may be unreasonable to expect that the PHA can be a champion for the elimination of hazardous environments – whether related to global warming and greenhouse gases, ideologies, learning and education, consumerism, or human relationships. Indeed most of the problems I have raised must be shared by society and all its institutions. But given the ecological approach that typifies public health, and the impacts on the health of the nation that

hazardous environments can generate, the PHA has a crucial three-part role to play.

31 Importantly there is the role of watchdog. Because it is not limited to clinical management, but can look beyond individuals to embrace families, whānau, communities, and whole populations, the PHA should be alert to the emergence of environments that have become hazardous. In addition to the watchdog role, as a group the PHA can assert a co-ordinating role by using the extensive public health networks and the Association's significant influence, to stimulate action within several sectors and professions. Building on public health traditions and ecological approaches to the promotion of health, there is a further role for the PHA: to develop methodologies and strategies that will lead to sound multi-layered interventions – at political, government, community, whānau and family levels.

32 The Challenge
I mentioned at the beginning of this address that the challenge facing public health is linked to navigating the relationship between peoples and their environments in order to achieve the best possible gains for health. Hundreds of years ago the hazardous environment of most concern to Māori was largely a function of a cold and often hostile natural environment. Even now nature can still unleash its fury bringing widespread destruction. But in modern times we have also created a range of other environments that have their own potential for devastation and ill health. I have used five as examples: greenhouse environments, ideological environments, learning environments, consumer environments, and environments that foster dysfunctional human relationships.

33 Based on a reputation earned over the past twenty years, the PHA is now well placed to take a critical leadership role in identifying and managing hazardous environments and then working with others to sustain the public health.

Kia maia

MHD
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