Fifth Manning Clark Lecture

TOWARDS A FAIRER WORLD:

HISTORIC TRENDS IN GLOBAL HEALTH REFORM

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It is a happy and proud occasion for me to present the Fifth Manning Clark Lecture and thus to be able to do honour to the memory of a very great Australian. First of all I would like to acknowledge the Ngunawal people, to pay my respects to their elders and to remind everyone that we are having this important meeting on their traditional lands.

I note I am the first scientist in what at least to this point has been a very distinguished series. Would Manning Clark have approved of this? He certainly had a great reverence for life. "Everything a historian writes should be a celebration of life, and hymn of praise to life. It should come up from inside a man who knows all about that horror of the darkness when a man returns to the dust from whence he came, a man who has looked into the heart of that great darkness, but has both a tenderness for everyone, and yet, paradoxically, a melancholy, a sadness, and a compassion because what matters most in life is never likely to happen." Every scientist I know also has a profound reverence for life, it would of course be expressed in quite different ways but this is a point of real contact.

Of course, Manning Clark did not share the unshakeable belief in progress which is a motivational underpinning for many scientists. As Stuart Macintyre notes in his recent book *The History Wars*, "Manning Clark posed the sharpest challenge to the radical nationalists with his call in 1954 for historians to drop the "great Australian illusion" of a radical past that could inspire and instruct endeavours. Those who persisted with this understanding of Australian history, he insisted, were clinging to the exhausted creed of secular humanism and a naïve faith in progress. He broke with both the conservative and the radical versions of academic history to seek a different kind of understanding – the story-teller as seer – and those in both camps were not sure what to make of it. Clark had few imitators and the successive volumes of his *History of Australia* had much greater impact on the public than the profession." So Clark was very much the public intellectual and it is wonderful to see the tradition of research, analysis and debate continued via Manning Clark House and its Cultural Fund. I hope these Lectures, too, make an appropriate contribution.

Judy Davis started her Fourth Manning Clark Lecture with some reflections on September 11, 2001, which she said changed her understanding of the world and woke her from a deep Western slumber. I do not pretend to understand all the basic causes of terrorism but I do want to put forward the proposition that a fairer world should be promoted not just for

humanitarian reasons but out of our own self interest. My point of view leans on some fairly powerful allies. Here is what 108 Nobel Laureates had to say during the centenary celebrations of the Nobel Peace Prize on the 7th December, 2001: “The most profound danger to world peace in the coming years will stem not from the irrational acts of states or individuals but from the legitimate demands of the world’s dispossessed. Of these poor and disenfranchised, the majority live a marginal existence. If we permit the devastating power of modern weaponry to spread through this combustible human landscape we invite a conflagration that can engulf both rich and poor.”

This viewpoint was strongly supported by the Australian-born President of The World Bank, Mr James D Wolfensohn, during a recent visit to Australia: “There are 5 billion people in the developing world, 3 billion earning under US$2 a day, and 1.2 billion earning under $1 a day. If you can’t give them hope, which comes from getting a job or doing something productive, giving them their self-respect, these people become the basis on which terrorists or renegades or advocacy groups can flourish. It’s an essentially unstable situation. If you cannot deal with the question of hope or economic security, there is no way that with military expenditure you can have peace. I think you could spend US$2 trillion on military expenditure, but if you do nothing about poverty and development you’re not going to have stability.” Wolfensohn estimates military spending worldwide at about US$1 trillion per annum (US$1 thousand billion) and spending on subsidies or tariffs to protect developed world farmers at about US$300 billion. Meanwhile, the total aid flows from rich countries to developing countries languish at around US$50-60 billion per annum.

Of course international development assistance has to be intelligently targeted. Personally I prefer the catalytic function of building up “soft” infrastructure, namely improvements in education, health, the justice system and promoting good governance to the traditional “hard” infrastructure grants which provide trucks, roads, dams, tourist hotels or other businesses, important though the latter undoubtedly are. So-called countries in transition, that is those who have been helped out of dire poverty partly through international aid, have not only raised their own gross domestic product but have become more robust trading partners for the rich countries. Post World War II Japan is probably the most interesting single example but there are many others.

Health Reform and Economic Progress

	Income / head US$	Life Expectancy	Under 5 mortality per 1,000 live births
Least Developed Countries	296	51	159
Lower-Middle Income Countries	1,200	70	39
High Income Countries	25,730	78	6

The influential American health economist, Dr Jeffrey D Sachs, has argued powerfully for improved health as conferring economic as well as humanitarian benefits. He believes the linkages of improved health to poverty reduction and to long-term economic growth are much stronger than is generally understood. High mortality rates, the burden of chronic diseases and the fear and despair which frequently accompany both stand as a stark barrier to

economic growth, and therefore must be addressed within any comprehensive development strategy. The following table starkly makes the point:

Economic Status and Health Outcomes

We see the income gap between the richest billion and poorest billion people on the planet being over 80-fold and the life expectancy (which despite everything has improved markedly in the third world) differing by 27 years. Perhaps the most tragic difference is in the death rates in young children. Whereas the average under 5 mortality in the least developed countries is around 16 per cent, it is definitely the case that there are individual African villages in which that mortality figure approaches 50 per cent.

Dr Sachs was charged by the former Director-General of the World Health Organization, Dr Gro Harlem Brundtland, with heading a Commission in Macroeconomics and Health.A stellar group of intellects reported in December 2001 and came up with some startling cost benefit analyses. For the poorest countries, the most essential interventions which were required were against infections and nutritional deficiencies. The Commission estimated that the cost of such essential interventions would be approximately US$34 per person per year. This could be achieved globally with additional donor support of US$30 billion per year, and if this admittedly very large sum could be unlocked from the richer countries, 8 million lives per year could be saved. The Commission believes that within a 10-15 year timeframe this is really eminently achievable. Most importantly, they calculate that the direct economic benefit of such improved health would be US$186 billion per year, thus a six-fold payback on the investment. Prior to the Iraq War, I thought US$30 billion per year unrealistically idealistic. Now we must take note of the fact that the War and the post-War reconstruction are costing well over US$100 billion! Another statistic worth pondering is that the US$30 billion represents 1 per cent of the global health budget and 0.1 per cent of global GDP.

Another finding of the Commission which pleased me a great deal was their stress on global health research. They promoted the idea of a research fund able to disburse US$1.5 billion per year for research on diseases affecting chiefly the developing countries. They noted what is termed the “90/10” gap. This is the fact that of the vast US$80 billion spent annually on health research, including both public and private sectors, less than 10 per cent is devoted to health problems in the developing countries where 90 per cent of the world health problems reside.

Immunization Programmes Have Been Highly Successful

Moving now to my own field of immunology as an example of where a great deal has happened in global health reform, I should like to describe some programmes which are making a real and highly cost-effective contribution. The first is the triumph of smallpox eradication. Through a World Health Organization-led programme of 11 years duration, under the inspired leadership of Dr D A Henderson, this dreaded and historic disease which killed 2-3 million people annually and scarred perhaps 10 times more, was entirely eradicated and no longer exists. Obviously, routine immunisation ceased as well. What an irony that this great triumph meant that now virtually no-one under 30 has immunity to smallpox, and that therefore smallpox is a potentially powerful weapon of biological warfare. In the United States this threat is perceived as so realistic that they have stockpiled 300 million doses of the vaccine just in case! Had the world heeded the urgent pleadings of the World Health

Organization for a total destruction of all smallpox virus stocks, the threat could have been avoided although obviously inspections in rogue states would have posed great difficulties.

Armed with this triumph, the World Health Organization together with UNICEF and others embarked on the Expanded Programme on Immunization which sought to bring six common childhood vaccines, namely diphtheria, whooping cough, tetanus, poliomyelitis, measles and BCG for tuberculosis to all the world's children. Proper funding for EPI began in 1984, and by 1990 overall global coverage of infants had reached just under 80 per cent. This gross statistic, however, hides some marked heterogeneities with many poor countries achieving far lower rates. Still, in 1990 one would have had to declare this Programme as another great success. Unfortunately, between 1990 and 2000 no further improvement in coverage was achieved and indeed in some countries infant vaccination rates were actually falling. Furthermore, other very important vaccines such as yellow fever and hepatitis B were not added to EPI despite the pleadings of the World Health Assembly. This lack of further progress can be attributed to a mixture of donor fatigue, changing world health priorities and inadequate physical and human infrastructure in many countries.

Before explaining recent developments which are much more encouraging, let me mention another amazing WHO programme. This is the attempt, not yet fully completed, to eradicate poliomyelitis from the world. Here we have the good fortune of a vaccine which can be administered by mouth, logistically much easier than injections. In 1988 when this programme started, polio was still circulating in 125 countries. As the programme evolved, it became apparent that eradication required four linked strategies. High routine infant immunisation rates were necessary but not sufficient. They had to be buttressed by National Immunisation Days, which represented a massive mobilisation of community effort where all children under five regardless of previous immunisation history were brought to immunisation posts and given the polio vaccine drops. This involved a great partnership with Rotary International who provided generous funding and also a great deal of volunteer labour. The National Immunisation Days relied heavily on extensive media coverage, and on the patronage of high local personalities such as the Head of State or the First Lady. During National Immunisation Days in India, for example, 100 million children would be immunised in a single day! It turned out that people who were too poorly motivated or too insufficiently educated to have their infants immunised at 6, 10 and 14 weeks nevertheless somehow managed to get their children lined up when everyone else was doing the same on a given day. The third strategy was extensive surveillance to detect the last few cases in a country, including proper virological examination of stool samples, and the fourth leg of the strategy was so-called "mop up" campaigns around the last few index cases where immunisation personnel actually travelled to the dwellings themselves (thus the children were not required to go anywhere).

The quadruple strategy has worked so well that wild polio has disappeared from North Central and South America; Europe; the Western Pacific Region (including China); and Oceania. There is still some polio transmission in six countries of Africa and South Asia, but in only three (India, Pakistan and Nigeria) are there significant numbers of cases. So the situation can be summarised that if attempts to eradicate polio by 2005 are successful, the programme would have been going 20 years, in 200 countries, through the efforts of 20 million volunteers, with over 2 billion children immunised. Unfortunately once again the threat of bioterrorism means that the world will not be able to stop immunising as soon as had been hoped.

The Gates Foundation bring Public Sector-Private Sector Partnerships to a New Level

Realising that the EPI programme could not be allowed to stagnate, WHO approached the Gates Foundation in 1998 to solicit its interest in this broad field. The Bill and Melinda Gates Foundation is now the world's largest, with an endowment of approximately US$26 billion, meaning that is has the capacity to spend about US$1.3 billion per year. Mr Gates and his wife, having become parents relatively recently, were intrigued and gave an initial grant of US$100 million in December 1998, but soon escalated their involvement in close collaboration with the World Health Organization, UNICEF and The World Bank. As a result, the Global Alliance for Vaccines and Immunization (GAVI) was launched in January 2000 and has given new heart to the global immunisation initiative. GAVI is targeted to the 74 poorest countries in the world, those with a GDP per head of population of less than US$1,000, and it has three linked aims. Cash grants are made to improve vaccination infrastructure, both physical and human, with much effort going into the training of the personnel involved. GAVI also purchases the vaccines not included in the routine EPI, such as yellow fever, hepatitis B and meningitis. Then, both through GAVI and independently through other implementing mechanisms, the Gates Foundation supports research and development for new and improved vaccines, most prominently against diarrhoeal diseases, pneumonia, meningitis, HIV/AIDS, malaria and tuberculosis. It is hard to keep track of the magnitude of the Foundation's generosity because new grants are being announced all the time, but the total sum now stands at well over US$2 billion. At last we have a programme of sufficient dimensions to make a real difference!

Progress in Parasitic Disease Control

One favourite sport in academic circles is to criticise the large multinational pharmaceutical companies. Certainly, the charges for their products are high, justified in part by relatively short patent life and very high research and development expenditures. Their marketing is also quite intense. It is worth balancing some of these criticisms by illustrating some of the good things that the companies have done in third world health. I shall choose two examples from the field of parasitic disease and one from a dreaded bacterial infection.

River blindness is a terrible disease caused by the larvae of a worm crawling into the eye leading to its eventual destruction. The causative organism is *Onchocerca volvulus* and technically the disease is termed onchocerciasis. Before WHO and The World Bank got together with an onchocerciasis control programme, 120 million people worldwide were at risk (96 per cent of them in Africa) and 18 million people were actually infected with the disease. A curious feature of onchocerciasis is that the *Simulium* blackfly vector breeds in fast-flowing river water and therefore workers farming fertile riverside land are at special risk. At first the programme relied on aerial spraying of larvicide, reasonably effective but certainly not environmentally friendly. Then a drug called Ivermectin came along, which actually turns out to be a very profitable drug for Merck Inc because it protects against heartworm in dogs. It was soon shown that populationwide administration of Ivermectin once or twice per year gives essentially absolute protection against this disease. Merck has actually donated 400 million doses of Ivermectin free and as a result oncocerciasis is no longer a problem of public health importance or an obstacle to socioeconomic development. Twelve million children have been born without risk of disease and blindness and 25 million hectares of fertile riverside land have been resettled with agricultural production sufficient to feed 17 million people each year. The second parasitic disease is of special interest to Australia because the parasite, *Wuchereria bancrofti*, was discovered by Thomas and Joseph Bancroft

in Brisbane. It causes elephantiasis, a horrible and disfiguring disease technically known as lymphatic filariasis in which adult worms block up the lymphatic vessels causing gross swelling particularly in the lower limbs and the external genitalia. Lymphatic filariasis threatens 1 billion people in 73 countries and now there is a 20-year plan for the global elimination of this disease. This time we are dependent on the combined use of two drugs, Albendazole donated by GlaxoSmithKline and Ivermectin donated by Merck. Though this programme was only formalised in 1997, in 2000 over 3 million people were targeted for treatment and already by 2001 coverage reached 40 million people in 27 countries. It is confidently predicted that the 20-year timeframe for elimination will be reached.

The last and somewhat surprising example is leprosy. Two things turn out to be the case in leprosy which were certainly not evident in my early medical days. The first is that accurate diagnosis of this disease is quite possible with simple training. The second is that multidrug therapy is effective in curing all stages of the disease. In this case Novartis has made multidrug therapy available in blister packets and several non-governmental organisations have combined with WHO and The World Bank for the actual implementation of the programme. As a result, the global burden of disease in leprosy has been reduced by 85 per cent and 4 million disabilities have been averted so far. It is estimated that 11 million people have been cured since the programme began and new cases have fallen by a factor of six.. Once again one can be confident that leprosy is on the way out as a significant public health problem.

Global Alliance for Improved Nutrition (GAIN)

The Gates Foundation is also quite concerned about improved nutrition. In May 2002 it announced GAIN, the Global Alliance for Improved Nutrition. In the first instance, GAIN will seek supplementation of diets with vitamin A and iron. It is not generally realised that deficiencies in micronutrients insufficient to cause flagrant disease can nevertheless impair full and healthy development, particularly of the brain. For example, relatively minor deficiencies in iron which actually do not lead to anaemia have been shown to decrease the human IQ by 15 per cent. The developing GAIN programme seeks to redress this. In the longer term, this area provides perhaps the greatest justification of genetically modified food organisms, crops enhanced in nutrient value in an imaginative series of ways.

Gates Grand Challenges in Global Health

So far I have described some programmes of the Gates Foundation which could be termed “top down”. Key decisions were made by Bill and Melinda Gates, by senior staff of the Foundation and a relatively small number of close advisers (including myself). Now, under the chairmanship of the distinguished Nobel Laureate in Medicine Dr Harold Varmus, a highly imaginative “bottom up” programme has been launched. This is known as the Gates Grand Challenges in Global Health. The call has gone out to the global health research community to seek to identify grand research challenges which, if solved, would open new doors for novel approaches to third world health, and an initial sum of US$200 million has been made available which will certainly grow considerably in the future. More than 1,500 groups of scientists have responded to the call in a wide variety of fields. Amongst the research proposals are improvements in childhood vaccines including more powerful immune stimulatory substances that we term adjuvants; novel delivery strategies such as oral or transdermal; and better ways of predicting whether a vaccine will work before it ever goes into clinical trial.

Other Grand Challenges being explored are biological methods of controlling the vectors of many viral and parasitic diseases, such as the mosquito; ways of beating the big problem of drug resistance that is encountered when antimicrobials and antiparasitic agents are given to large populations; ways of curing latent and chronic infections where the pathogen has gone underground lying dormant for long periods before, unpredictably, emerging and threatening the life of the patients; and better and cheaper diagnostic procedures able to be used at the point of care in the field.

At this stage, about 1,500 applications for Grand Challenge grants have been received and this will have to be whittled down to a very much smaller number so that each grant can be of sufficiently significant dimensions for there to be a realistic way of solving the Grand Challenge. There is an elaborate, multistage jury process involved and it is hoped to announce the first set of grants in August.

Continuing Challenges in Aboriginal and Torres Strait Islander Health

It is important to remember that in this rich and lucky country we still have a subpopulation the health status of which is not too different from that of a developing nation.I refer, of course, to the Aboriginal and Torres Strait Islander population. In the case of remote Aboriginal communities, access to services is limited and contributes to the problem, but even in the towns and cities, where services are readily available, indigenous Australians do not make full use of them, in many cases finding the trappings of western medicine alien and daunting. It is important to remember that the overall poor health of indigenous Australians really forms part of the spectrum of their disadvantage. Poor housing, low educational attainments, high rates of unemployment, extensive domestic violence, high rates of incarceration and above all alcohol and other substance abuse conspire to make a dismal scene. The aim of the present Government's policy of "practical reconciliation" is to seek in collaboration with the States and local government, to redress the immediate practical problems. From my point of view, however, this is unlikely to succeed unless the more symbolic aspects of reconciliation are taken on board as well. We have to understand in the fullest degree that European settlement led to a massive loss of land, a marked reduction of population size including the ravages of introduced infectious diseases, and a significant attenuation of culture. It is really not surprising that alienation and despair are a constant in many indigenous Australians' lives. What we require is a full acknowledgement of these wrongs, an appropriate apology, and a series of measures which give indigenous peoples the recognition and respect which they deserve. To me, practical reconciliation and symbolic reconciliation are like two sides of a coin, inextricably interwoven. I do not pretend to have instant solutions to these deep problems, but it seems to me that a correct teaching of our young about Aboriginal history and culture is not a bad place to begin. Manning Clark's granddaughter Anna Clark has made a fine contribution by showing us how contentious and difficult the extension of the History Wars to our schools has become. This does not mean that we should stop striving. As a matter of fact, during my three years work as Deputy Chairman of the Council for Aboriginal Reconciliation, and most particularly during my very extensive tours of this continent in the year 2000 when I was Australian of the Year, I came to the conclusion that our schools and our schoolchildren were very powerful friends to the reconciliation movement. That experience, and the immense success of the Bridge Walks right around Australia, where over a million Australians voted with their feet for reconciliation, gives me much hope for the longer term.

Some Final Reflections

It is now truly a global village, a world where communication is so rapid and intensive that both the good and the bad things which happen anywhere are registered around the globe. This intensifies the emotions generated by major inequities. Greater social justice in the world can only be achieved by a more substantial engagement of the richer countries with the poorer, and moreover on a full partnership basis. This is desirable not only on humanitarian grounds but out of naked self interest. Many trillions of dollars spent on armaments cannot ensure security, as the suicide bombers have shown. What I am urging in the longer term is a kind of global Marshall Plan, but centred on soft infrastructure including education, health, good governance and independent justice systems.

Some signs have emerged in the health field that real progress is possible at a price tag which the world can support. We are, however, talking about billions rather than millions of dollars. Government and United Nations Agencies are not the only players. Some of the most successful programmes have involved private sector-public sector partnerships. Foundations and high net worth individuals are important, but so are ordinary citizens. There will be huge transfers of wealth as the baby boomers bequeath their savings to their relatively modest number of children. Surely some of this can be harnessed. In the last analysis, money alone will not be enough. Things will only change if we, the rich, recognise in fullest measure the worth, the dignity and the ineffable potential of every single one of our fellow human beings. Manning Clark said that “the great Australian dream of social equality and mateship was bleeding to death in the jungles and paddy-fields of Vietnam”. His somewhat tragic view of the human condition might have led him to believe that my dream of social equality and mateship around the world is hopelessly naïve. Perhaps so, but I do not think he would have opposed my trying to promulgate it.

Thank you.