

Invisible enemies: Infectious disease and national security in Australia

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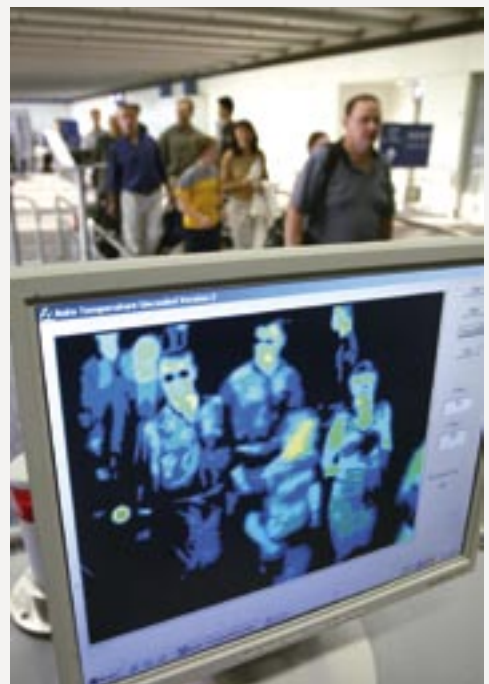
by Peter Curson

Summary

Traditionally, infectious disease has not played a major role in the dynamics of Australia's international relations or considerations of national security. HIV/AIDS, SARS, Bird Flu and the threat of new pandemics has produced a heightened awareness of infectious disease and the integrity of the state. Today, in an increasingly interconnected world, where bacteria and viruses travel almost as fast as e-mail or financial transactions, Australia can no longer take refuge in the barriers of time and distance as a defence against the pestilence without. It is clear that geographical notions of security and national stability defined in terms of territorial sovereignty and integrity are not the only relevant factors in today's environment. Not only has the transnational spread of infectious disease transformed our view of national security by producing threats without visible enemies, but it has also rendered the 'national' insignificant and replaced it with the 'international.' Further, it indicates that the traditional focus on the security of the state needs to be widened to include the security, health and wellbeing of its people. In this context, Australia needs to reassess its preparedness for a major outbreak of infectious disease.

Infectious disease and national security

Traditionally, national security has been defined in terms of the dynamics of international relations, the defence of national territorial integrity, the protection of citizens from external threats and the ensurance of a state's survival. Rarely, has infectious disease played an integral part in what has been called the 'high politics of international relations'. There has been at



Passengers have their temperature checked inside the arrival hall at Hong Kong International Airport. AAP/Mike Clarke © 2003 AAP

least 150 years of international concern with the possible impacts of infectious disease on imperial power and organisation, including a number of international health and sanitary conferences. By the second decade of the 20th century, infectious disease was largely sidelined in national and international forums in favour of more 'pressing' issues such as the balance of military power, considerations of international trade, political boundary disputes, and ultimately, the ownership of nuclear weapons. In the case of Australia, despite a long and continuing association with infectious disease, including some first hand experience with emerging and re-emerging infections, consideration of such things have until relatively recently, played little part in debates about national security. By contrast, in recent years in the US there have been a number of attempts to place infectious disease on the national/international security agenda, most significantly during the Clinton Administration, when HIV/AIDS was widely canvassed as a threat to world security. In 2000 a National Intelligence Council report on the significance of global infectious disease for the US concluded that: infectious diseases were a direct threat to the US population; that they were likely to aggravate, and in certain circumstances, provoke social fragmentation; economic decline; and political polarization in many developing and former Communist countries; that they threatened world trade and commerce; and that they directly threatened the health of deployed military personnel. In addition, the role and significance of infectious disease agents in possible future bioterrorist incidents was stressed. In the same year, the UN Security Council for the first time in its history, focused on the HIV/AIDS epidemic as a threat to global peace and security, and in 2001, The World Health Organization (WHO) adopted a resolution on global health and security, which acknowledged the link

between the globalisation of trade and human movement and the emergence/re-emergence of infectious disease.

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The argument that the spread of infectious disease threatens Australia's national security rests on the proposition that the health of Australia's population is a critical resource vital to the stability of the nation, and that such disease threatens not only the livelihood and way of life of individuals, but also targets the stability and viability of the state. A healthy, fearless Australian population represents the human capital necessary for productivity, innovation and growth. Arguably, a government that cannot guarantee the health of its people is failing in its most fundamental responsibility.

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Infectious disease reassessed

It is a harsh fact that infectious disease continues to persist as an important worldwide public health issue and in many countries, remains widespread and poorly controlled. Overall in the world, something in the order of 40,000 people die every day from infectious disease, the vast bulk from AIDS, tuberculosis (TB), malaria, respiratory and gastrointestinal infections. So far HIV/AIDS has killed approximately 23 million people in the world, including more than 6,000 in Australia, and is expected to have killed

65 million by 2010. Respiratory infections probably kill about 3.9 million people every year, TB accounts for roughly 1.6 million deaths a year, while malaria and dengue kill about 1.5 million people annually. Not only do infections persist, but they also continue to emerge, re-emerge and re-distribute. Some infections are newly recognised diseases in humans, others are long-established pathogens which have crossed species or spread to new geographical areas. Over the last 30 years, approximately 40 newly-emerged infections have been identified in the world, including AIDS, Legionnaires Disease, Lyme Disease, Ebola, Barmah Forest Virus, Mad Cow Disease, SARS and Bird Flu. The majority of these 'new' infections have resulted from long-established zoonoses (the capacity for disease to spread from animals to humans) brought out of obscurity or somehow given a selective advantage by some factors stemming from human behaviour and/or environmental change. This situation has allowed such pathogens to gain access to new host populations and/or to develop a higher degree of virulence.

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If left unchecked, epidemics of infectious disease can substantially undermine public confidence, threaten law and order, severely threaten a state's social, economic and political viability and become a major agent of social and political change. It can also threaten regional stability and create global friction. The HIV/AIDS experience

in South Africa and SARS in Asia, illustrate how infectious disease can severely impact on economic growth and development. In South Africa, more than 25% of the economically active population are projected to have HIV/AIDS in 2005. Not only will such a prevalence rate exacerbate an already serious skills shortage, but it will also place a considerable burden on government expenditure. It is estimated that within five years, there will be more than one million people with full-blown AIDS in South Africa dependent upon the public sector. SARS, by comparison, disrupted a wide-ranging global network dependent upon international trade and travel. ASEAN countries are said to have lost between US\$25–30 billion, mostly in the tourist, service and aviation sectors. The epidemic also shaved 1% off Toronto's economy. Epidemics of infectious disease can also invoke extraordinary fear, hysteria, and panic, and as psycho-social crises, may at times, threaten the normal functioning of society. The SARS outbreak demonstrates the role that fear can play in paralysing the normal operations of the state. Finally, infectious disease may also assume a highly strategic dimension through the threat of biological warfare and bioterrorism.

Infectious disease—growing awareness and concerns

The events of September 11, the anthrax incidents, SARS, Bird Flu, and recent fears of a pandemic of influenza, have produced a new awareness of the threat infectious disease poses to Australian and world security. Heightened concerns about bioterrorism and the fear and panic accompanying the SARS epidemic and possible outbreaks of new lethal infections, have served to focus more attention on the fact that public health is the basic cornerstone of national security. Somewhat reluctantly, Australia and the world now recognize that national

security in a globalised world involves countries facing a wide range of threats that transcend simple considerations of military power or national borders, and that the transnational spread of infectious diseases in an era of globalisation, constitutes one of the major challenges facing Australian and world security. The harsh reality is that when faced with a microbial enemy that proliferates rapidly, mutates frequently, spreads internationally, and which cannot be directly linked to a particular aggressor, Australia's reliance on distance, military defence and national borders no longer constitute a satisfactory defence. Many would now argue that emerging infections and bioterrorism constitute the greatest threats to Australia's stability that we have seen in the last 50 years. While the links between infectious disease and national security have been brought into sharper focus by recent events, a real assessment of the globalisation of risks and threats to Australian health would require consideration of a series of wide-ranging challenges that relate not only



South Korean government officials for the prevention of the infectious diseases collect chickens infected with bird flu in the ground, in the southern city of Yangsan, 300km south of Seoul, January 13, 2004. AAP/Yonhap © 2004 AAP

to the emergence of new infections but also to the reasons for the persistence of a wide range of 'older' infections in many countries. Factors such as world poverty, increasing marginalisation, inequality, the lack of basic health care, and environmental degradation would all seem important.

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Microbial threats to Australia's security in the 21st century

Over the last few decades, we have seen a shift in human affairs from the nation state to the vast theatre of planet earth, and the emergence of 'threats without identifiable enemies', all of which will transform the nature of Australia's health in the 21st century. We now have to confront the denationalisation of health, and address a host of factors which transcend the geographical boundaries of Australia. The globalisation of health threats, particularly the spread of infectious disease, has resulted in the internationalisation of disease which has rendered the national insignificant and replaced it with the international. Because infectious disease agents recognise no national borders, and given the tremendous growth in world trade and travel, Australia is now vulnerable to the threat of a wide range of transnational infections.

Apart from having to face the challenge of a wide range of newly emerging transnational infections like SARS and Bird Flu, and the

threat of pandemics of influenza as well as potential bioterrorism, Australia continues to be confronted by a variety of long-established infectious disease threats stemming from within and without the country. The resurgence and transfer of older epidemic-prone infections, like malaria, TB and dengue from outside Australia continues to be a problem. So too, do a variety of indigenous zoonotic and vector borne infections, such as Ross River Virus, Q Fever, Barmah Forest Virus and Leptospirosis, which remain poorly controlled, and which regularly assume epidemic proportions. In addition, a wide range of other infections related to the vagaries of human behaviour have resurged in recent years. Into this category fall diseases such as Campylobacteriosis, Salmonellosis, Chlamydia, Pertussis, Gonococcal infections and Hepatitis B and C. The spread of antibiotic resistance also remains of considerable concern, and most commonly applies to a range of respiratory infections including TB and pneumonia, sexually-transmitted infections like Gonorrhoea and a number of hospital-based infections.

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People and microbes across borders—emerging infections and Australia's security

There is also nothing new in the link between human migration and the spread of infectious disease. In many ways the history of infectious disease in Australia is the history of immigration and human

movement. There are, however, a number of features of current human movement that have significant implications for Australia's health and security. The enormous growth in the numbers of people who daily cross international boundaries and the rapidity of their travel, has transformed the human migration scene, and perhaps provides the archetypical manifestation of globalisation. Today, roughly five million people cross international borders by air every day. Many others seek work outside their home country, and there has also been a dramatic increase in the movement of refugees, foreign students and military personnel around the globe. In most cases, their journeys take less than one day, far less than the incubation time for nearly all infectious diseases.

In an age of such population movement, infectious disease agents continue to be carried across national borders every day, in people, their baggage, with animals, foodstuffs, and in the bilge water of ships. In disease terms, this means that time and geographical distance, so long the mainstay of Australia's public health defences, are no longer effective barriers to imported disease. The relationships between globalisation, human movement and infectious disease can be seen with respect to short-term population movements to and from Australia. The number of Australians travelling overseas has grown substantially over the last two decades. The increased scale and geographic range of Australians travelling abroad, means that tourists, defence force personnel and others, are exposed to a broader and more exotic range of infectious disease agents. Today probably about four million Australians leave Australia annually on short-term trips, whereas approximately five million short-term visitors arrive on our shores.

Significantly, population movements to and from Asia, Sub-Saharan Africa, Central and South America (high risk areas for a variety

of infectious diseases, including dengue, malaria, yellow fever, SARS and Bird Flu) have grown substantially. Today, roughly 1.5 million Australians visit such countries, with about 100,000 enjoying a trip to Africa or Central/South America. At the same time, the number of visitors to Australia from these high risk areas increased from 1.2 million in 1992 to about 2.5 million today. Permanent migration also brings disease threats in its wake. Despite claims that TB was controlled in the 1950s, the disease has staged a comeback since the 1980's. In Australia, there are approximately 1,000 cases of TB notified every year, the vast bulk of which originate in immigrants from India, Vietnam, China, Indonesia and the Philippines. Travel to countries where malaria is endemic is another risk factor, annually producing more than 800 cases in Australia. Widespread throughout much of the southern hemisphere, dengue also remains of considerable significance for Australia, because the mosquito vector remains endemic in parts of North Queensland, and has in the past had a much wider geographical distribution. Today, any viraemic person importing dengue has the potential to transmit the disease locally. The threat of the re-introduction of older infections to Australia, rests not only with civilian population movements, but also with the movement of defence force personnel returning to Australia from overseas postings in high risk areas.

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Bioterrorism—an additional threat

Concern over a covert release of a biological agent into the Australian population has heightened in recent years. Following the

sarin incident in Tokyo, the anthrax incidents in the USA, and the ricin incident in Britain, many now believe that a bioterrorist attack against a large urban population is inevitable. Indeed the US has carried out a wide range of simulation exercises designed to cope with such an event using smallpox as the biologic agent. While there seems little doubt that the US authorities may have overestimated the risks involved, and in the process fuelled public fears, the fact remains that a planned release of a biologic agent would be a devastating weapon of terror. Anthrax spores released upwind from an aircraft or boat near Sydney Harbour could, for example, kill thousands of people. Equally, a planned release of smallpox in a major shopping centre or military establishment, would undoubtedly create an extraordinary climate of fear and panic. It is also quite possible (and relatively easy) for the release of an infectious agent to be achieved by the use of a human agent or vector. The regular dengue epidemics in Northern Queensland attest to the significance of a pathogen being imported via a viraemic individual.

Australia's preparedness for a pandemic of infectious disease

The epidemic of Bird Flu currently sweeping through Asia and the possibility that it might mutate into a deadly form of influenza, has focused attention on the possibility of a world pandemic. Health authorities are urging countries to prepare for this possibility and develop action plans. To this end, Australia and other countries have begun stockpiling anti-viral drugs, refining Pandemic Action Plans and organizing laboratories to standby for possible vaccine development. Australia, like other countries, would also rely on the WHO's Global Surveillance Network and the International Health Regulations (IHR) to identify any potential epidemic threat. But the IHR, although currently under revision,

has traditionally only applied to three diseases—plague, cholera and yellow fever, and the reporting of any other infection is not binding on any WHO member state. To this extent, the IHR was irrelevant to the SARS outbreak and also to Bird Flu. Central to Australia's preparedness is an estimate of just how deadly the next pandemic might be. Here, Australia has relied on the WHO's estimate of a likely 25% of the population affected and a case mortality rate of 0.37%. This would mean approximately five million cases of influenza and 18,500 deaths. If, however, Australia experienced something like a re-run of the 1919 flu pandemic, when about 37% of the population had flu and the case mortality rate was nearer 1.2%, we could be looking at 7.5 million cases of flu and more than 88,000 deaths.

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The Australian Action Plan for Pandemic Influenza developed in 2003, advances a number of options to control the spread of a possible pandemic. At the outset the Plan recognizes that it is 'unlikely that the spread of influenza could be halted' and that a series of measures could be adopted to limit its spread. These would include—increased surveillance, the isolation of severe cases in emergency hospitals, home quarantine for the ill, the closure of schools, child-care centres and universities, restrictions on travel, the cancellation of public events and public gatherings, the delivery of anti-viral drugs and vaccine (if, and when available) to

designated groups, and the establishment of a communications network involving the media and the medical profession, with a hotline for the general public.

... but even the most promising scenario would see the development, production and general availability of such a vaccine taking between six and eight months, by which time perhaps millions would have caught the flu.

All this sounds eminently defensible, but the Plan does raise a lot of important questions, with respect to the stock of anti-viral drugs, said to be in the order of about four million doses. Who would such drugs be delivered to? The Action Plan identifies a series of Priority Groups for such delivery, including (in order of precedence), health, emergency workers, customs and quarantine officers; the elderly; the very young; and those suffering from chronic disease. Given that there are about one million health and emergency workers in Australia, about 2.5 million elderly and one million infants, this does not leave very many doses for other groups. This raises the very interesting question as to whether Australians have a 'right' to be protected by their government in times of epidemic crisis, and whether access to anti-virals or vaccines should be available to all, including the 'worried well'? Rationing of such drugs would probably be the most controversial aspect of pandemic preparations, particularly if decisions could not be made until it became clear who were the most severely affected by the new strain. Health authorities would also have to decide whether to use stocks of anti-virals to keep people from getting ill or to treat those already sick with flu. There is also the question of the timing of delivery of such

drugs. To be of any real use, anti-virals need to be administered shortly after the onset of symptoms, a task that might not prove easy. The government has also put aside resources for the development of a possible vaccine, but even the most promising scenario would see the development, production and general availability of such a vaccine taking between six and eight months, by which time perhaps millions would have caught the flu. In addition, the impact of vaccines to control influenza epidemics, while potentially great, has still to be demonstrated. The concept of home quarantine of the sick raises other questions. How easy would it be to support people quarantined at home? If a particular suburb was known to be formally quarantined against a particularly virulent form of influenza, would local delivery people be keen to deliver food and essential supplies? And would there be enough well people to actually deliver such essential supplies? And again, would people actually stay home? During the SARS epidemic in Toronto, where home quarantine was formally applied, one absconder is reported as having infected dozens of others. We also need to know more about the psychological effects of quarantine on people and how isolation from family and

friends impacts on their health. Finally, would local, state and Commonwealth authorities cooperate in the management of the crisis? Australian history is littered with examples of disagreements and open battles between such groups during times of epidemic crisis.

Allaying fear and preventing panic

The Australian Action Plan is ominously silent on how the fear, hysteria and public panic that would undoubtedly accompany the pandemic, might be 'managed'. SARS and earlier pandemics like polio and plague, indicate to what extent such things can disrupt the normal operations of the state and produce a crisis of confidence. What we really need to understand is how people handle fear in their lives and what deepseated fears they have about infectious disease, contagion, risk and exposure. As well, do official policies like isolation, quarantine and school closures, serve to heighten our fears and anxieties, and does fear of infection, particularly in the absence of a specific cure or treatment, allied to a deep scepticism about whether the government can actually protect us, always result in panic, avoidance, scapegoating, rumour-mongering, violence and other personal adjustment strategies. Critically, could we also expect the media to act responsibly in their reporting of the pandemic? In such circumstances the desire to sensationalise, to exaggerate, and play on people's emotions, often becomes overwhelming and would surely heighten public anxieties. Perhaps we also need to know whether there is such a thing as 'reasonable fear' in the context of epidemics, and how much fear is healthy, and whether or not it might aid in the prevention and containment of outbreaks of disease.



A nurse practices administering a smallpox vaccination. AAP/Ric Feld
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The future

Given the re-emergence of infectious disease and the threat of another influenza pandemic, there seems little doubt that infectious disease can no longer be seen as the sole preserve of the physician or public health specialist. Transnational health threats involve every aspect of modern life, including food safety, human rights, organ transplants, travel, commerce and trade, education and environmental law. HIV/AIDS illustrates the extreme challenges faced by countries and their citizens when faced by a virulent infection that affects a large proportion of the population and for which no specific cure or treatment exists. There are many lessons and challenges for Australia here, but the underlying message is that infectious disease needs to be near the top of the national security agenda.

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