
Pandemic and public health controls: Toward an equitable compensation system

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There is increasing global concern about the potential impact of pandemic infections, including influenza, SARS and bioterrorist attacks involving infectious diseases. Many countries have prepared plans for responding to a major pandemic. In Australia, the Federal and State pandemic plans include measures such as contact tracing, ensuring availability of antimicrobials, quarantine and social distancing. Many of these measures would involve severe restrictions on individual citizens and small businesses. Issues of compensation for cooperation and compliance with pandemic plans need to be addressed in policy discussion. The instrumental benefits of compensation in the event of a pandemic have not been sufficiently recognised. Greater attention paid now to mechanisms to compensate individual and business costs associated with compliance would increase trust in government pandemic plans, encourage compliance and reduce the health and economic impact of a pandemic.

There is increasing global concern about the impact of potential pandemics arising from influenza, Severe Acute Respiratory Syndrome (SARS), other emerging infectious diseases or bioterrorism. In relation to H5N1 avian flu, the current concerns are the speed of global spread, the high mortality rate for humans, and the potential that mutation will lead to widespread human-to-human transmission. Human cases have been reported, with the latest (as of March 2007) being a fatal case in the Lao People's Democratic Republic.¹ Human-to-human transmission was suspected in Vietnam as early as June 2004 and was confirmed in Thailand in January 2005.² In May 2006, the spread of avian influenza in a family likely involved human-to-human transmission,³ and a recent case in Indonesia raised similar suspicion.⁴

The potential ramifications of a pandemic are serious. An outbreak of H5N1 avian flu could result in up to 142 million deaths and a Gross Domestic Product (GDP) loss of \$US4.4 trillion.⁵ In response, many countries have instituted plans to counter the possible consequences of a pandemic. A vast amount of time and resources has been dedicated to examining public health aspects of emergency preparedness, pandemic planning committees and scientific research aimed at vaccine development. The majority of the pandemic plans developed, including those produced by the Australian Federal

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¹ WHO, "Avian Influenza – Situation in Lao People's Democratic Republic", *Disease Outbreak News*, Update 2 (16 March 2007), http://www.who.int/csr/don/2007_03_16/en/index.html viewed 19 March 2007.

² WHO, *H5N1 Avian Influenza: Timeline* (2006), http://www.who.int/csr/disease/avian_influenza/Timeline_15.02.pdf viewed 19 March 2007; latest update http://www.who.int/csr/disease/avian_influenza/timeline2007_04_02.pdf.

³ WHO, "Avian Influenza – Situation in Indonesia", *Disease Outbreak News*, Update 14 (23 May 2006), http://www.who.int/csr/don/2006_05_23/en/index.html viewed 19 March 2007.

⁴ WHO, "Avian Influenza – Situation in Indonesia", *Disease Outbreak News*, Update 3 (15 January 2007), http://www.who.int/csr/don/2007_01_15/en/index.html viewed 19 March 2007.

⁵ Warick JM and Sidorenko AA, *Global Macroeconomic Consequences of Pandemic Influenza* (Lowy Institute for International Policy, The Australian National University, 2006), <http://www.brookings.edu/dybdocroot/views/papers/mckibbin/200602.pdf> viewed 18 November 2006.

and State governments,⁶ include mechanisms to prevent and control infection such as contact tracing, prioritised distribution of antivirals, quarantine and other social distancing measures. In general, however, post-pandemic plans have failed to sufficiently explore mechanisms that may reduce the adverse socio-economic impacts of pandemics.

This article argues that governments should devise financial plans to compensate businesses and individuals who suffer losses during pandemic and post-pandemic scenarios when the losses relate to compliance with public health measures, with the principle of reciprocity as a basis. Implementation of a compensation scheme would help reduce the negative economic impact of pandemics, increase trust and confidence in government, provide incentives for compliance and cooperation with pandemic plans, and thus reduce the negative health impact of pandemics.

MEDICAL ETHICS IN TIMES OF PANDEMICS

Ethical analyses of infectious diseases and pandemic infections have tended to concentrate on a limited number of issues, including those relating to the allocation of limited medicines and human rights concerns about quarantine and other infringements of individual liberty. Another issue that has received a great deal of attention, however (perhaps because it is centred on the clinical dyad and on professional ethics), has been health workers' "duty to treat" patients who may pose a risk of infection or death. This issue has assumed particular significance in relation to pandemics, where questions have been raised about the likelihood of doctors providing adequate care and the best means by which care provision can be guaranteed.⁷

Despite the contemporary emphasis on the "duty to treat",⁸ historical analysis of pandemics shows that issues relating to the duty to treat were not of major importance. During the devastating 1918 "Spanish" flu pandemic, eg, a doctor refusing to treat patients was the exception rather than the rule.⁹ Driven by patriotism and a moral commitment to a "just" war (ie, World War I), most physicians stayed and worked; and many died. However, it is not merely "special circumstances" such as these that compel doctors to treat the sick even when it is dangerous to do so. The contagious nature of the Black Death, which ravaged Europe from 1348 to 1350, was well understood, and ordinary social (and moral) obligations were abrogated.¹⁰ Children deserted parents, wives deserted husbands and children were abandoned. Many physicians ran; but many more remained, died and in doing so allowed moral continuity and the preservation of an implicit social contract. As de Chauliac stated: "[A]nd I, to avoid infamy dared not absent myself but with continual fear preserved myself as best I could."¹¹ In more recent times the SARS outbreak illustrated that health professionals felt compelled to provide treatment to patients despite experiencing fear and guilt arising from the possibility of exposing loved ones to the infection.¹²

The view of the physician's duty in the face of the fear of "coming to harm" is implicitly grounded in the social contract. The social contract does not eliminate fear but rather it necessitates dealing with fear so that appropriate actions result.¹³ As long as the contract is in force and not abrogated publicly, it is likely to retain moral force.

⁶ New South Wales Government, Department of Health, *Interim Influenza Pandemic Action Plan* (2005); Australian Government, Department of Health and Aging, *Australian Management Plan for Pandemic Influenza* (2005).

⁷ Savulescu J, "Conscientious Objection in Medicine" (2006) 332(7536) *BMJ* 294.

⁸ University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group, *Stand on Guard for Thee: Ethical Considerations in Preparedness Planning for Pandemic Influenza* (2005), <http://www.utoronto.ca/jcb/home/documents/pandemic.pdf> viewed 6 January 2006.

⁹ Barry JM, *The Great Influenza: The Epic Story of the Deadliest Plague in History* (Viking, New York, 2004).

¹⁰ Loewy EH, "Duties, Fears and Physicians" (1986) 22(12) *Social Science & Medicine* 1363.

¹¹ Campbell AM, *The Black Death and Men of Learning* (AMS Press, New York, 1966).

¹² Maunder R, Hunter J, Vincent L, Bennett J et al, "The Immediate Psychological and Occupational Impact of the 2003 SARS Outbreak in a Teaching Hospital" (2003) 168(10) *Canadian Medical Association Journal* 1245.

¹³ See Loewy, n 10.

While the debate regarding professional obligations to treat patients with contagious diseases may be important, it has taken attention away from other issues of moral and social importance and thus restricted consideration of the range of public health measures that would ensure public and professional compliance in a just and morally defensible manner.

THE WIDER IMPACT OF PANDEMICS

Major epidemics have the potential to destabilise economies. Hong Kong, Singapore and Taiwan, eg, lost US\$80 billion and 0.5% of GDP due to the SARS epidemic of 2003, which resulted in 800 deaths.¹⁴ While that was a substantial impact, a major flu pandemic would be much more severe. Compared to the Spanish flu, which killed 20 to 100 million people worldwide,¹⁵ the death of 800 people is relatively insignificant. An influenza pandemic could easily cost the Australian economy over A\$50 billion.¹⁶ Because an avian flu pandemic would not likely be as small-scale or short-lived as SARS, it could be much more fatal to people and economies.¹⁷

The Australian Government has acknowledged the potential losses that may follow a pandemic by considering macro-economic policies to alleviate harm to the community. The Treasury Working Paper, eg, proposed to implement expansionary fiscal and monetary policies to reduce the impact on the economy¹⁸ and counter the reductions in consumption of goods and services. While such policies may have merit, other measures that may reduce the impact of pandemics have not been sufficiently considered.

Given the potential consequences faced by businesses and the community, the Australian Government should also ensure that those adversely affected by measures implemented receive support. The report of the University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group rightly states that reciprocity should be a key value in pandemic influenza policy-making.¹⁹ Reciprocity requires society to support those who face a disproportionate burden in protecting the public good and take steps to minimise burdens as much as possible. Measures to protect the public good are likely to impose a disproportionate burden on those whose behavior is restricted. It is fair for those affected to receive recognition for complying with measures that seek to protect society. For example, reciprocity requires that health personnel compelled to work receive perhaps an insurance fund for life or other means of support in recognition of services rendered in times of pandemic, or priority in the allocation of limited avian flu vaccines and antiviral drugs. Although not considered in this article, recognition of health personnel putting themselves in the front-line of a pandemic can be made by the National Influenza Pandemic Action Committee giving priority to this group. Such provisions would be fair: if health personnel are expected to place themselves in danger to protect society, in return they should be offered protection in the form of priority in receiving medication. This would ensure that those best trained to fight a pandemic are healthy enough to do so. More generally, compensation will ensure that those who comply with restrictive government measures suffer as few adverse consequences as possible. If governments expect individuals to comply with restrictive measures such as quarantine, recognition must be given to the sacrifices individuals will make such as losing income and incurring other costs, some of which will not be easy to quantify. If ethically-motivated reciprocity mechanisms were built into pandemic

¹⁴ Centers for Disease Control and Prevention, *Mortality and Morbidity, Weekly Report, Revised US Surveillance Case Definition for Severe Acute Respiratory Syndrome (SARS) and Update on SARS Cases – United States and Worldwide* (2003), <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5249a2.htm> viewed 19 March 2007.

¹⁵ See Barry, n 9.

¹⁶ Gordon J, "Pandemic to Kill 1000s, Cost Billions", *The Age* (16 February 2006).

¹⁷ Brown D, "Avian Flu Virus Growing Similar to Lethal 'Spanish Flu'", *Washington Post* (5 October 2005).

¹⁸ Kennedy S, Thompson J and Vujanovic P, *A Primer on the Macroeconomic Effects of an Influenza Pandemic* (Australian Government Treasury, 2006), http://www.treasury.gov.au/documents/1069/HTML/docshell.asp?URL=TW_2006-01.htm viewed 12 March 2006.

¹⁹ See University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group, n 8.

plans in an open and transparent manner with participation from multiple sectors, then the plans would earn greater trust, authority and legitimacy.²⁰ Compensation from the government is one way to achieve reciprocity.

COMPENSATION

Currently in Australia compensation in some form exists for damage to individuals, their goods and property in the event of a pandemic under the health legislation of all jurisdictions except South Australia. Different jurisdictions refer to compensation for “damage” incurred as a result of actions taken by the government in the event of a pandemic. The *Public Health Act 2005* (Qld) mentions “just and reasonable compensation” in s 366 for suffering due to powers such as the exercise of detention. However, it is unclear what “suffering” is and whether those indirectly affected – eg employers losing income due to the detention/quarantine of its employees – will also be compensated. The *Public Health Act 1991* (NSW) is narrower in restricting compensation to cases involving disinfection and destruction of articles (s 6) and to the exercise of powers of entry and the damage caused (s 72). The *Health Act 1958* (Vic) is also narrow insofar as compensation is only applied to cases involving seizure of land, buildings or things under s 125. The *Public Health Act 1997* (Tas) and the *Public Health Act 1997* (ACT) are more recent and broad in regard to compensation and damages incurred under s 18 and s 122 respectively. For example, s 122 of the *Public Health Act 1997* (ACT) defines “eligible persons” for compensation to include those who have suffered loss or damage directly or due to a family member’s death.

It is unclear whether the damage defined in these provisions refers to purely physical or health damage. The damage incurred following a pandemic would also include financial losses incurred by businesses and individuals. And individuals may experience economic damage in the short and long term in many ways. For example, loss of income may threaten individuals’ financial security, and this may affect the stability of the economy as businesses face declining sales and income. People may also be left in the dark as how to start over and what their rights are, should they suffer losses as a result of pandemic control measures.

COMPENSATION AND FAIRNESS

It is unclear from examination of the existent relevant public health provisions whether the potential economic impact of a pandemic on the families of health personnel and essential service providers has been sufficiently addressed. While some public health legislation (see eg the *Public Health Act 1997* (ACT)) provides that compensation can extend to family members who suffer loss or damage due to the death of a person who suffered consequent to actions carried out according to the legislation, it is unclear whether this extends to all jurisdictions, how such damages would be assessed and whether such compensation would provide for anything more than funeral expenses.

It is also unclear whether adequate consideration has been given to the impact of a pandemic – and the impact of measures to control it, such as quarantine – on businesses and on working individuals. The State and federal plans incorporate quarantine as a social distancing measure for the control of an epidemic.²¹ Quarantine will result in people having their movement restricted and businesses having their operations disrupted. Quarantine periods in Australia in 1918 lasted as long as three months.²² Businesses may face closure or, if they are still operating, will undoubtedly be affected by the disruption to essential services, by the loss of surety of supply and trade, and by absenteeism. A pandemic would see large public gatherings banned, public halls closed and public utilities probably shut down. Workers would not be able to arrive on time and many would stay at home due to fear, illness or the need to care for family members. Working individuals may also lose income as a consequence of both a pandemic and public health responses to it, such as those resulting from restriction of movement or the necessity of having to care for ill family members.

²⁰ University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group, n 8.

²¹ New South Wales Government, Department of Health, n 6; Australian Government, Department of Health and Aging, n 6.

²² Australia, House of Representatives, *Parliamentary Debates*, 6 November 1919, p 2493.

There are already means by which individuals and businesses may receive recompense for damage incurred from natural disasters. It is possible to insure against natural disasters, and both businesses and individuals may receive compensation from government for damages resulting from natural disasters. Following Cyclone Larry, eg, families were able to access and claim normal social welfare payments through Centrelink depending upon their circumstances, and they were also eligible for ex gratia government payments of \$1,000 per adult and \$400 for children. There were also tax-free grants for businesses and owners, fuel excise relief and concessional loans for farmers and businesses. While it is likely that a similar scheme would be implemented in the event of a pandemic, it is not at all clear how such a scheme would apply, given the differences between pandemics and other “natural disasters”. A pandemic does not cause physical loss of buildings, goods and property, as a cyclone does. Rather, the economic damages from a pandemic result from the restriction of movement, closure of businesses, loss of health personnel and the impact on families.

Current private insurance companies offer protection in the instance of a pandemic. However, compensation requires fulfilling criteria and conditions under existing categories of insurance. In the circumstance of a pandemic, businesses and individuals may find that they would not be covered in situations where they incur losses as a consequence of complying with government measures. Businesses and individuals should not have to seek insurance against measures that benefit the enforcers, ie the government, at their own expense. It is unfair to make those subjected to restrictive public health measures suffer *all* the losses entailed, given that there will be a social dividend to compensate them (if the net benefits of restriction outweigh the costs – as would have to be the case for restrictive measures to be justified in the first place).

COMPENSATION AS A MEANS TO REDUCE IMPACT ON THE ECONOMY

A review of pandemic history suggests that a failure to consider post-pandemic issues, such as the economic impact of pandemics, may have deleterious effects on the economy, businesses and families. After the 1918 Spanish flu in Australia, the New South Wales Government enacted the *Influenza Epidemic Relief Act 1919* (NSW) which recognised that quarantine measures require businesses and individuals to suffer costs for the safety of the public and provided for compensation for losses incurred, including incomes, mortgages and debts. It is worth noting, however, that this compensation was not available immediately after the pandemic; and debate regarding the appropriate assessment of damages and the distribution of moneys significantly delayed the timely processing of applications and ultimately reduced the effectiveness of the Act as a social measure.²³

While some firms, such as Deutsche Bank, have made preparations for future pandemics arising out of their experience with SARS, it is undoubtedly the case that most businesses are inadequately prepared for a pandemic.²⁴ Planning for a pandemic imposes extra costs on businesses, particularly smaller businesses. Businesses already have to worry about increasing petrol prices, staff salaries, rising inflation, insurance and interest rates. Because the government has not emphasised preparedness plans for businesses, pandemic planning has not become a priority for businesses. The Australian Government Department of Industry, Tourism and Resources has produced kits for preventing the spread of avian flu but does not address the “impact on businesses” of social distancing measures.²⁵ State and Federal governments could accelerate business pandemic preparedness by subsidising them for pandemic planning and by creating a compensation mechanism for businesses and individuals after a pandemic. This would encourage businesses to consider how they may function during and after a pandemic and whether alternative approaches, such as flexible work practices and the use of information technology, may reduce potential costs and losses. Assisting businesses to prepare for

²³ Australia, House of Representatives, *Parliamentary Debates*, 6 November 1919, p 2493.

²⁴ Carey J, Barrett A, Byrnes N and Tiplady R, “Avian Flu: Business Thinks the Unthinkable”, *BusinessWeek Online* (28 November 2005), http://www.businessweek.com/magazine/content/05_48/b3961075.htm viewed 2 February 2006.

²⁵ Australian Government, Department of Industry, Tourism and Resources, *What is a Human Influenza Pandemic? Being Prepared for an Influenza Pandemic* (28 June 2006), <http://www.industry.gov.au/pandemicbusinesscontinuity/index.cfm?event=object.showContent&objectID=0E0101C7-BCD6-81AC-150851A078A6725E> viewed 18 November 2006.

pandemics will not only benefit employers and employees, but also consumers and the wider society as this would likely insulate the economy and support the capital and social infrastructure.

COMPENSATION AS A MEASURE FOR ENGENDERING COMPLIANCE AND TRUST

Public health interventions require public trust and acceptance in accordance with the principles of justice.²⁶ Measures such as mandatory quarantine, eg, entail dramatic coercive powers and restrictions on individual liberty,²⁷ and compliance with them requires both understanding and trust.²⁸ For example, during the SARS outbreak, compliance with quarantine measures relied heavily on public trust in government and public education about the importance of quarantine.²⁹ Penalties or even criminal charges are often ineffective means to increase compliance with government measures.³⁰

Inadequate compliance with pandemic plans may ultimately compromise their effectiveness. The public is only likely to trust government and comply with infection control measures where there is a genuine belief that the government is acting in the community's and the individual's best interests and is acting in a fair, thorough and equitable manner. By demonstrating awareness of the impact of pandemics and pandemic plans on individuals and communities, including the business community, and by considering all possible means for ameliorating these impacts, such as compensation measures, governments may facilitate both trust and compliance with these plans, and ultimately reduce post-pandemic costs.

What limited evidence we have from contemporary pandemics suggests that governments would be wise to consider the necessity for compensation measures as part of a comprehensive pandemic and post-pandemic plan. DiGiovanni et al have shown that loss of income during quarantine is of critical concern to those considering how they should respond to calls for quarantine and that compensation may encourage compliance with voluntary quarantine.³¹ These findings were borne out during the SARS outbreak in Canada where compensation measures were initially rejected by the provincial premier on the grounds that they were unfeasible but then later introduced in recognition of the sacrifice that health and non-health personnel had to make in preventing SARS and treating those affected by it. Those (employed or self-employed) unable to work for at least five days during the SARS outbreak were eligible for up to Can\$6,000.³² Discussions about such schemes should occur before the outbreak of a pandemic. Advanced discussion allows for consultation with different sectors of society, ensures adequate measures are included and helps to avoid delays in compensation provision.

THE DEVELOPING WORLD

Compensation would be a powerful tool in the developing world in curbing and preventing the spread of H5N1 avian flu. In developing countries, efforts to control pandemic infection, such as the widespread slaughter of poultry, have a major impact on communities and individuals. For many people in the developing world, poultry farming is the only source of income; in the absence of any sort of compensation there are strong disincentives to report incidences of the disease or to comply with calls for culling. (Indeed, experience with H5N1 avian flu in the developing world has found a

²⁶ Gostin L, "Public Health Strategies for Pandemic Influenza, Ethics and the Law" (2006) 295(14) JAMA 1700.

²⁷ Annas GJ, *Bioethics and Bioterrorism, American Bioethics: Crossing Human Rights and Health Law Boundaries* (Oxford University Press, New York, 2005) p 1.

²⁸ John TJ, "Final Thoughts on India's 1994 Plague Outbreak" (1995) 346(8977) *Lancet* 765.

²⁹ Blendon R, DesRoche CM, Cetron MS et al, "Attitudes Toward the Use of Quarantine in a Public Health Emergency in Four Countries" (2006) 25(2) *Health Affairs* W15.

³⁰ McNeil DG, "Fight in Taiwan is Impeded by Resistance to Isolation", *New York Times* (12 May 2003).

³¹ DiGiovanni C, Bowan N, Ginsberg M and Giles G, "Quarantine Stressing Voluntary Compliance" (2005) 11(11) *Emerging Infectious Diseases* 1778.

³² *Ontario Unveils SARS Compensation Package* (13 June 2003), http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20030613/sars_compensation_030613?s_name=&no_ads= viewed 29 November 2005.

high incidence of non-compliance with reporting requirements.) This issue has been recognised by the World Health Organization's project on ethics and influenza.³³

RECOGNISED DIFFICULTIES

Implementation of a compensation scheme such as that described in this article would reduce the impact of pandemic control measures on the economy and increase trust in, and cooperation with, public health interventions. Such a scheme requires time, planning and resources; and there are difficulties in determining who should be eligible for compensation, under what circumstances it should be given and how the compensation should be distributed. But, as the public discourse surrounding the 1918 pandemic in New South Wales makes clear, such issues *can* be explicitly and rigorously addressed.

CONCLUSION

Pandemics and the measures used to control them can have an enormous impact upon communities and on individuals. Introducing compensation measures into pandemic plans would increase trust in government and public health institutions, increase compliance with infection control measures and reduce the health and economic impact of pandemics. Compensation for businesses and individuals is a fair means of reciprocity because both may suffer considerable harm as a direct result of their cooperation with measures such as quarantine and social isolation. At the current time there is no evidence that concerns regarding the personal and business "costs" of pandemics are adequately addressed by either the Australian Federal or State pandemic plans. The time for such discussions is now – before a pandemic occurs.

³³ WHO. *Addressing Ethical Issues in Pandemic Influenza Planning* (2006), http://www.who.int/ethics/influenza_project/en viewed 18 November 2006.