

## Ethical Considerations in the Review of Singapore's H1N1 Pandemic Response Framework in 2009

Wei Wei Tiong, <sup>1</sup>*MD, MPH (Singapore)*, Gerald CH Koh, <sup>2</sup>*MBBS, MMed (FM), PhD(FM)*

Preparedness and response planning for an influenza pandemic often involve difficult decisions that are fraught with ethical challenges. Ethical considerations are shaped by the local context and cultural values of a country.<sup>1</sup> The ethical principles of equity, utility or efficiency, liberty, reciprocity, and solidarity are especially helpful in the context of an influenza pandemic preparedness planning.<sup>1</sup> Some of the basic ethical considerations involved in planning for and throughout an influenza pandemic response would include balancing the rights, interests and values between an individual and the community; obligations of healthcare workers in a pandemic; making policy decisions for public health measures based on the best available evidence; ensuring government transparency, public engagement and social mobilisation; providing information, education and making early communication to the public as well as taking into account constraints in resources to ensure equitable access to health care in a pandemic.<sup>2</sup>

During the H1N1 influenza pandemic, the Pandemic Response Framework (PRF) was revised and stringent public health measures were adopted by the Ministry of Health (MOH) to limit the spread of the disease among the population.<sup>3</sup> These measures include isolation, quarantine, travel restrictions and community-wide measures such as public education, infection control measures, use of anti-viral treatment as well as vaccinations. The measures were carried out during the various containment and mitigation phases of pandemic. The Pandemic Preparedness Clinics (PPCs) were formed as part of MOH's revised PRF to ensure easy access to medical assessment and prompt treatment for patients with flu-like illnesses to minimise the burden of disease in the community.<sup>4,5</sup> The PPCs were supported with Personal Protection Equipment (PPE) and Tamiflu from the national stockpile to help manage the influenza outbreak in the community. All PPCs underwent further training to better manage H1N1 influenza cases. Primary healthcare clinics were encouraged to participate as PPCs and all polyclinics were part of the PPC framework.<sup>4,5</sup> Despite these robust measures, several ethical considerations

arose from the PRF that still warrant our attention. This review of the 2009 PRF examines the important ethical issues associated with the government policies undertaken to combat the infectious outbreak in Singapore. Table 1 outlines the important ethical considerations involved during the 2009 H1N1 PRF.

### 1. Duty of Care—Obligations of the healthcare profession

One debatable issue that concerns the healthcare workers (HCWs) would be their “duty of care” or simply, their “obligation to treat patients” or “provide care” during an infectious disease outbreak despite the risk of infection.<sup>6-9</sup>

There is a general perception that HCWs should adhere to their duty of care and provide treatment to patients despite the risk of infection based on professional obligations and responsibilities. HCWs are perceived to accept such risks as part of their professional career and code of oath or ethics.<sup>10</sup> They undergo special training and their expertise imposes upon them a higher burden of responsibility. They have a social contract with the public for social respect and the privilege of professional self-regulation and autonomy.<sup>10</sup> Nonetheless, in compelling times when the pandemic posed high risks of morbidity and mortality and when HCWs have competing responsibilities to themselves and their family, can they disclaim the duty to treat without breaching clinical responsibility?<sup>10</sup>

In Singapore, most primary care physicians (PCPs) are still bounded by the duty to care, taking into consideration the various responsibilities and interests that they have to self, family, co-workers, patients and society, beyond those of the healthcare profession, without proclaiming a lack of a duty of care.<sup>11</sup>

The emergence of a novel virus in the H1N1 influenza pandemic raised the uncertainty of whether we would become victims or vectors (or both, at any given time), hence the fulfillment of the duty of care ought not to be decided simply by balancing the interests of one group over the other.<sup>12</sup> The community, institutional and social

<sup>1</sup>Policy and Control Branch, Communicable Diseases Division, Ministry of Health, Singapore

<sup>2</sup>National University of Singapore, Saw Swee Hock School of Public Health

Address for Correspondence: Dr Tiong Wei Wei, Ministry of Health, 16 College Road, Singapore 169854.

Email: [tiong\\_wei\\_wei@moh.gov.sg](mailto:tiong_wei_wei@moh.gov.sg)

Table 1: Ethical Considerations in the Review of Singapore's H1N1 Pandemic Response Framework in 2009

Situation in which ethical issue arose	Ethical Construct (s)	Actual response in Singapore	What could/should be addressed in Singapore in anticipation of the next pandemic
Healthcare workers (HCWs) are expected to adhere to their duty of care and provide treatment to patients despite the risk of infection based on professional obligations. They are expected to accept such risks as part of their professional career and code of oath or ethics.	Duty of care - obligations of the healthcare profession; and reciprocity	Most primary care physicians were still bounded by the duty to care and considered the various responsibilities and interests that they had to self, family, co-workers, patients and society.	The community, institutional and social roles of a HCW should be considered.  The government and healthcare employers have reciprocal obligations to protect and support HCWs who were to assume greater responsibilities and exposed to greater risks to their health and life. This would include the provision of preventive and protective measures such as setting priority for vaccination and anti-viral medications, recruitment of contingency HCWs and volunteers to cope with surge capacity issues, the provision of sufficient training and professional indemnity, implementation of infection control measures as well as medical and social benefits provided in the case of illness and disability, including death benefits for family members.
There is difficulty in priority setting and allocation of scarce resources for anti-viral treatment, vaccinations, personal protective equipment (PPE), ventilators, hospital beds and other resources during an influenza pandemic.	Equity; and stewardship	The Ministry of Health (MOH) determined the priority groups and allocated resources such as anti-viral drugs, vaccines and PPE first to the HCWs in public healthcare institutions followed by the Pandemic Preparedness Clinics (PPCs) and subsequently to all primary care clinics, and advised treatment of the infected group as well as encouraged vaccination in high risk groups and all HCWs.	Allocation decisions should be considered and prioritised according to need, survivability and social value when resources are scarce. For example, scarce resources could be given to individuals who are most likely to benefit and survive, and those who are integral to a functioning society during a pandemic crisis such as HCWs and also target population groups who are at higher risk of developing complications from H1N1 influenza.
Poor communication between public health officials, HCWs and the public which caused confusion and misperception on the actual severity of the pandemic situation and fatality of the virus.	Trust; and solidarity	PCPs played a critical role during the pandemic and advised the public on the disease and where to seek medical help. They educated the public on the use of personal and community hygiene methods, thus achieving control on infection spread.	There should be early and effective communication to the public. They should be informed of the risks involved or the uncertainty of the effectiveness of some of the measures as well as changes in the response strategies. The media could be one avenue for promulgation and communicating with the public on public health preventive measures.
Restrictive measures such as isolation, quarantine, social distancing, border control and coercion of vaccination are deemed important for the protection of public health, but often infringe on individual's basic rights or liberties and privacy.	Protection of the public from harm; individual liberty; proportionality; and privacy	Restrictive measures were implemented to control the spread of infection. Most citizens saw it as a form of civic duty and were willing to accept limits to their individual liberties for the public good.	Restrictive measures could be attempted to delay the spread or mitigate the impact of an influenza pandemic. The burden they place on individual liberties requires that their use be carefully circumscribed and limited to circumstances where they are reasonably expected to provide an important public health benefit. Pandemic flu plans should include a comprehensive and transparent protocol for implementing restrictive measures, based on principles of proportionality, and least restrictive means, balancing individual liberties with protection of public from harm, with built-in safeguards such as the right to appeal and informed consent.
When all primary care clinics are mandated under legislation set by the government to participate as PPCs during a pandemic.	Utilitarianism; individual liberty; duty to provide care; proportionality	Almost half of the primary care clinics participated as PPCs on a voluntary basis during the pandemic, out of moral and civic obligations and deemed it as their duty to treat.	A balanced approach should be adopted in any pandemic plan, rather than undertaking a mandatory approach to enforce on the principles of the obligation to provide care and the duty to treat by the healthcare professionals. An opt-out option or the allowance to make an appeal should be included if all primary care clinics were to be mandated as PPCs. The government should also provide more incentives such as higher remuneration, adequate PPE supplies and better benefits for the HCWs and their families.

roles that constitute the person as a HCW should be taken into consideration. If the HCWs were to assume greater responsibilities and be exposed to greater risks to their health and life during an influenza pandemic, the government and healthcare employers would have reciprocal obligations to protect and support them. This would include the provision of preventive and protective measures such as setting priority for vaccination and anti-viral medications, recruitment of contingency HCWs and volunteers to cope with surge capacity issues, the provision of sufficient training and professional indemnity, implementation of infection control measures as well as medical and social benefits provided in the case of illness and disability, including death benefits for family members.<sup>13,14</sup>

## 2. Priority Setting and Resource Allocation

During the H1N1 influenza pandemic, difficult ethical considerations included the priority setting and allocation of scarce resources for anti-viral treatment, vaccinations, personal protective equipment (PPE), ventilators, hospital beds and other resources. For example, who should be given priority for anti-viral treatment such as Tamiflu? Should the resources be allocated to save the most lives or to treat those who are most sick; to treat those who are most socially productive; or should everyone be given a fair chance of survival? Who should be the right person or authority to make these allocation decisions?

Allocation decisions should be considered and prioritised according to need, survivability and social value when resources are scarce. In a research conducted by the Canadian Joint Centre for Bioethics (JCB), need was described as giving resources to those most sick or those directly responsible for the care of others (HCWs, elderly parents etc.).<sup>15</sup> The participants of the research suggested that scarce resources be given to individuals who are most likely to benefit and survive, and that consideration be given to the social value of HCWs and others integral to a functioning society during a pandemic crisis.<sup>16</sup>

For the PRF, MOH determined the priority groups and allocated resources such as anti-viral drugs, vaccines and PPE first to the HCWs in public healthcare institutions followed by the PPCs and subsequently to all primary care clinics, and advised treatment of the infected group as well as encouraged vaccination in high risk groups and all HCWs to reduce the incidence of acute respiratory infections due to seasonal influenza viruses. Priority setting was required to target population groups who were at higher risk of developing complications from the H1N1 influenza, especially if anti-viral drugs fell short of supply and vaccines were initially not readily available from manufacturers. This helped to contain and limit the rapid spread and progression of the disease during the containment phase of the pandemic.

## 3. Risk communication

Effective modes of communication and public education regarding the issues involved during a pandemic were essential for public engagement in preparedness planning to be meaningful.<sup>2</sup> During the H1N1 influenza pandemic, some primary care physicians commented on the poor communication between public health officials, HCWs and the public, thus creating confusion and “false alarm” about the actual severity of the pandemic situation and fatality of the virus. Important principles of outbreak communication included trust, transparency and early communication to the public, through dialogue-sessions and advance planning to allow the development of appropriate strategies that could be introduced to the entire population.<sup>2</sup>

The PCPs play a critical role during a pandemic by advising the public on the disease and where to seek medical help. They also educate them on the use of personal and community hygiene methods, thus achieving effective control on infection spread. It would be essential to inform the public of the risks involved or the uncertainty of the effectiveness of some of the measures as many of the times, confusion or misinformation about measures often leads to substantial public anxiety, reliance on word of mouth for knowledge and purchase of ineffective and expensive products.<sup>16</sup> Information available will change continuously throughout the pandemic, requiring adjustments of response strategies based on ongoing assessments of the risks and potential benefits of interventions. These adjustments and their reasons should be communicated to the public as early as possible.<sup>2</sup> The media should be one avenue for promulgation and communicating with the public on public health preventive measures.

## 4. Restrictive Measures

Restrictive measures such as isolation, quarantine, social distancing, border control and even the coercion of vaccination by introducing mandatory vaccination raised controversial ethical issues during a pandemic. These measures are deemed important for the protection of public health, but often infringe on individual's basic rights or liberties with limiting of the personal freedom of the public which include mobility, freedom of assembly and privacy. Are these measures necessary to protect the public good or should there be autonomy and individual liberty given in these decisions-making?

During the H1N1 influenza pandemic in Singapore, most citizens understood and accepted the need for restrictive measures to control the spread of infection. They also saw this as a form of civic duty and were willing to accept limits to their individual liberties for the public good. While most would agree that the government should have the power to suspend some individual rights such as traveling and the right

to assemble as a group during a pandemic influenza, they also contend that there should be a reciprocal obligation of government to provide food, shelter, social support services and other basic needs of restricted individuals.

The government has an obligation to minimise the burden of disease on individuals and communities in a way that is respectful of individual rights and liberties.<sup>2</sup> The need to balance the interests of the community and the rights of the individual is of particular importance in the implementation of restrictive measures such as isolation, quarantine, social distancing, border control and mandatory vaccination. While these measures can legitimately be attempted to delay the spread or mitigate the impact of an influenza pandemic, the burden they place on individual liberties requires that their use be carefully circumscribed and limited to circumstances where they are reasonably expected to provide an important public health benefit.<sup>2</sup> Hence, it is crucial that the pandemic flu plans adopted should include a comprehensive and transparent protocol for implementing restrictive measures, based on principles of proportionality and least restrictive means, balancing individual liberties with protection of public from harm, with built-in safeguards such as the right to appeal and informed consent.

### **Legislation—Mandating all PPCs as Pandemic Preparedness Clinics**

An important ethical consideration arises when all primary care clinics are mandated under legislation set by the government to participate as PPCs during a pandemic. Most of the primary care clinics participated as PPCs on a voluntary basis, out of moral and civic obligations and deemed it as their duty to treat. As a result, almost half of the primary care clinics in Singapore participated as PPCs.<sup>17</sup> Should all primary care clinics be mandated to participate as PPCs or should they serve the public voluntarily during a pandemic?

One may argue on the notion of “Bentham’s theory of utilitarianism” associated with the idea of “the greatest happiness for the greatest number of people” that since this regulation would benefit the general good of the public because they could choose to visit any primary care clinic near to their homes rather than attempting to find out which clinics participate as PPCs and only visiting those that signed up as PPCs in 2009.<sup>18</sup> The primary care clinics could thus better deliver targeted essential services to the general public and stay aligned to government policies and measures in times of pandemic. Vaccination policies and infection control measures could be better carried out through the PPCs. All primary care HCWs could also be assured of having adequate supply of PPE and anti-viral medications provided by the government under the pandemic

response plan.

Nonetheless, having all primary care clinics to participate as PPCs leads to the contestation of limiting individual rights or liberties; restricting personal freedom of choices, and in this case that of the primary care clinics and the HCWs. When the duty to care and treat patients becomes compulsory rather than out of voluntary obligations, the healthcare professionals may do only enough as to what is expected of them, rather than doing more from what they intend to do for the public out of moral obligations. Public expectations of the primary care clinics and the HCWs go up when they see that the PPCs are bounded by legal obligations to provide treatment and care for the public; unreasonable demands may surface and healthcare costs may increase as a result. Similarly, if all primary care clinics are mandated as PPCs during a pandemic, they would expect reciprocal obligations from the government in providing adequate supplies of vaccines, anti-viral drugs, PPEs, infection control training, early communication on pandemic flu plans and allowing their participation in decision-making of public policies during the pandemic.

Hence, it is crucial that a balanced approach is adopted in any pandemic plan, rather than undertaking a mandatory approach to enforce on the principles of the obligation to provide care and the duty to treat by the healthcare professionals. Perhaps, an opt-out option or the allowance to make an appeal should be included if all primary care clinics were to be mandated as PPCs. This would allow primary care professionals the flexibility of adhering to government policies and regulations. The government should also provide more incentives such as higher remuneration, adequate PPE supplies and better benefits for the HCWs and their families. Ethical considerations should be properly addressed during the pandemic planning without compromising public interests and safety while promoting compliance and maintaining public trust and confidence. Policy makers should consider adopting a well-balanced ethical framework to overcome any barriers as well as to minimise and limit any social disruption and economic loss that could arise during a pandemic. Transparency and government accountability should further be emphasised.



## REFERENCES

1. Thompson AK, Faith K, Gibson JL, Upshur REG. Pandemic influenza preparedness: an ethical framework to guide decision-making. *BMC Med Ethics* 2006;7:12. doi: 10.1186/1472-6939-7-12.
2. World Health Organisation. Ethical considerations in developing a public health response to pandemic influenza. World Health Organisation. 2007;1-24.
3. Ministry of Health, Singapore. Response to Pandemic H1N1: Singapore's experience. 2009 Nov 5. Available at: [http://depts.washington.edu/einet/doclib/pdf/20091105\\_singapore.pdf](http://depts.washington.edu/einet/doclib/pdf/20091105_singapore.pdf). Accessed 18 August 2011.
4. Ministry of Health, Singapore. Influenza A (H1N1-2009) Pandemic Preparedness Clinic (PPC). 2009. Available at: [http://www.pqms.moh.gov.sg/apps/fcd\\_faqlmain.aspx](http://www.pqms.moh.gov.sg/apps/fcd_faqlmain.aspx). Accessed 18 August 2011.
5. Ministry of Health, Singapore Medical Association. Pandemic Preparedness Clinics (PPC) – Revised Primary Care Flu Pandemic Response Framework. 2009. SMA News, 18.
6. Voo TC, Capps B. Influenza pandemic and the duties of healthcare professionals. *Singapore Med J* 2010;51:275-81.
7. Ruderman C, Tracy CS, Bensimon CM, Bernstein M, Hawryluck L, Shaul RZ, et al. On pandemics and the duty to care: Whose duty? Who cares? *BMC Med Ethics* 2006;7:5. doi:10.1186/1472-6939-7-5.
8. Anantham D, McHugh W, O'Neil S, Forrow L. Clinical review: Influenza pandemic-physicians and their obligations. *Crit Care* 2008;12:217.
9. Sokol DK. Virulent epidemics and scope of healthcare workers' duty of care. *Emerg Infect Dis* 2006;12:1238-41.
10. Malm H, May T, Francis LP, Omer SB, Salmon DA, Hood R. Ethics, pandemics, and the duty to treat. *Am J Bioeth* 2008;8:4-19.
11. Wong TY, Koh GC, Cheong SK, Sundram M, Koh K, Chia SE, et al. A cross-sectional study of Primary-care physicians in Singapore on their concerns and preparedness for an avian influenza outbreak. *Ann Acad Med Singapore* 2008;37:458-64.
12. Battin MP, Carr-Lee LS, Francis LP, Jacobson JA, Smith CB. The patient as victim and vector: bioethics and the challenge of infectious disease. In: Ashcroft RE, Dawson A, Draper H, McMillan J, eds. *Principles of Healthcare Ethics*. 2nd ed. Hoboken: John Wiley & Sons, 2007.
13. Hodge JG Jr, Gable LA, Calves SH. Volunteer health professionals and emergencies: assessing and transforming the legal environment. *Biosecur Bioterror* 2005;3:216-23.
14. Rosychuk RJ, Bailey T, Haines C, Lake R, Herman B, Yonge O, et al. Willingness to volunteer during an influenza pandemic: perspectives from students and staff at a large Canadian university. *Influenza Other Respi Viruses* 2008;2:71-9.
15. Ritvo P, Wilson K, Gibson JL, Guglietti C, Tracy CS, Nie JX, et al. University of Toronto Joint Centre for Bioethics. Canadian survey on pandemic flu preparations. *BMC Public Health* 2010;10:125.
16. Gostin LO, Berkman BE. Pandemic influenza: ethics, law and the public's health. *Admin L Rev* 2007;59:121-76.
17. Ministry of Health, Singapore. List of Pandemic Preparedness Clinics. 2010. Available at: [http://www.moh.gov.sg/mohcorp/uploadedFiles/News/Current\\_Issues/2010/PPC%20list\\_Alphabetical%20-27Jan10.pdf](http://www.moh.gov.sg/mohcorp/uploadedFiles/News/Current_Issues/2010/PPC%20list_Alphabetical%20-27Jan10.pdf). Accessed 18 August 2011.
18. Bentham, Jeremy. *An Introduction to the Principles of Morals and Legislation*. Library of Economics and Liberty. 1907. Available at: <http://www.econlib.org/library/Bentham/bnthPML.html>. Accessed 18 August 2011.