



Pandemics: A human security perspective

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Preface

This Fast Talk Team report draws upon the findings of an expert consultative process conducted by the Human Security Research and Outreach Program, supported by the Human Security Policy Division (GHS) of the Department of Foreign Affairs and International Trade (DFAIT). The Fast Talk Team concept was developed to provide DFAIT with a timely and flexible means to access high quality policy-relevant research with the objective of:

- generating perspectives on new or emerging issues;
- refreshing thinking on existing issues; or
- enhancing the effectiveness of conferences and workshops by developing a pre-conference dialogue which helps to frame issues, focus discussion, and build expert consensus.

Fast Talk Teams bring together officials seeking policy development input with prominent Canadian and international experts through a three-stage consultation process that can be completed in a time frame as short as 1-2 weeks. First, 4-6 experts are identified and asked to provide short 3-5 page written responses by e-mail to specific policy questions developed by DFAIT officials. Secondly, the officials and experts review the responses and participate in a 2-3 hour conference call to discuss them. Finally, a report summarizing the key findings of the written submissions and the conference call discussion is provided to all Fast Talk Team members for final comment and then circulated to officials.

The purpose of Fast Talk Teams is to generate policy-relevant research. They do not attempt to establish new policies for DFAIT or the Government of Canada. **Thus, the views and positions provided by this paper are solely those of the contributors to this research project and are not intended to reflect the views and positions of DFAIT or the Government of Canada.**

The Human Security Policy Division would like to thank the Fast Talk Team leader, Valerie Percival, DFAIT colleagues, and the expert participants for their contributions to this Fast Talk Team effort.

Expert participants

Seven experts participated in the December 2005 Fast Talk:

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Executive summary

With the growing threats to people's lives posed by the avian flu, SARS, and other pandemics, the Human Security Policy Division (GHS) at the Department of Foreign Affairs and International Trade (DFAIT) conducted a Fast Talk on Pandemics in December 2005, in an attempt to identify how this emerging issue impacts human security. Seven experts were engaged to provide insight on this topic.

Fast Talk results

This research indicated that health issues are clearly relevant to the human security agenda. The damage to public health that is frequently wrought by conflict directly impacts individuals due to eroded health systems that are unable to prevent civilian deaths and injuries. In many of the world's conflict zones, 10 or more people succumb to war-exacerbated disease and malnutrition for every combat death.

Moreover, pandemics and global viruses like avian flu and HIV/AIDS rob societies of their political and economic leaders, lawyers, doctors, and teachers, and generally undermine governance, development, and state ability to provide human security.

The lack of a safe and secure environment and the failure or inability of states to safeguard the security of individuals has a direct and significant impact on human health. During a pandemic outbreak, states may violate human rights in their effort to respond, and the lack of accountability may heighten the risk of infectious disease outbreaks spreading as individuals lack accurate information to protect themselves, ultimately posing more threats to human security.

Fast Talk experts noted that the threat of an influenza pandemic arising from H5N1 and acquiring the ability for human-to-human transmission is very real. The international community is ill-prepared to detect that threat. Surveillance systems are weak and collaboration between animal health and public health experts remains unsatisfactory. Most developing countries lack the capacity to respond to the catastrophic impact of an influenza pandemic, while the health systems of developed countries will be severely strained, placing more lives at risk.

No country's human security is guaranteed in the face of pandemics, which recognize no boundaries. Nonetheless, developed countries are placing too much emphasis on containment. The efficacy of quarantine/social distancing measures and the use of Tamiflu as a prophylactic are uncertain. While such a policy has its benefits in focussing preparedness efforts and buying time – potentially slowing the spread of an influenza outbreak and allowing for the creation of a vaccine – the large-scale use of vaccination is feasible only in wealthy countries. Participants argued that what is needed is 'containment plus': building the surveillance systems necessary to identify an outbreak and developing plans for a public health response to contain that outbreak, but also ensuring that countries are better prepared to respond to the health crisis which would inevitably result from an H5N1 pandemic outbreak.

The World Health Organization (WHO)'s International Health Regulations (IHR) (2005) are unprecedented, and if implemented will do much to build public health surveillance systems and capacities. However, participants expressed concern that the IHR 2005 will not be fully implemented until 2007, and urged faster action.

Particularly given IHR 2005 and the experience of SARS, participants argued that a sufficient incentive structure for transparency exists for states to report suspected outbreaks of infectious disease. However, more effort must be made at the local level to ensure that subsistence farmers — for whom reporting an outbreak among poultry would result in devastating losses — are compensated for their losses.

Non-governmental sources of information, such as medical NGOs working in developing countries, are critical for detecting outbreaks of infectious diseases. Under IHR 2005, WHO can utilize surveillance information gathered from non-governmental sources without relying on official government notification.

Non-governmental reporting is particularly critical given the weak or non-existent animal health and human health surveillance systems that exist in most developing countries. One participant suggested that a solution to these weak systems would be building regional surveillance capacity.

The possibility of an outbreak of influenza in Africa generated much discussion. No studies have been conducted on the impact of an influenza outbreak in a population with a high incidence rate of HIV/AIDS. There are three possible scenarios. First, HIV-positive individuals could provide an increased opportunity for mutation of the virus to one that allows for human-to-human transmission; second, the mortality rate would be devastatingly

high; and third, because of the weakened immune systems of HIV-positive individuals, they would mount a less effective response and thus be spared the severe outcomes seen in H5N1 patients (that are due to immune system activation).

The role of intellectual property rights and their impact on public health response is hotly debated. While urging that the issue of intellectual property rights and public health be tackled more forthrightly, our participants argued that the World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) was not necessarily the problem. Third-party compulsory licensing is allowed under the WTO. However, the will to implement this agreement and issue compulsory licenses is lacking. Increasing the production of antivirals and other drugs does not erase the challenges of using antivirals to respond to pandemic influenza.

The military will undoubtedly be utilized in pandemic response, and there are serious concerns that in many countries, human security will be threatened by militaries lacking the necessary training to undertake this task effectively.

Public health emergencies tend to reveal structural inequalities and racism within societies. An influenza pandemic could therefore heighten discrimination against certain groups resulting in violations of human rights.

Final report

This final report is the summary of the key ideas raised both in the written submissions of our experts, and in the subsequent conference call.

While initially caught off-guard, the international community was eventually successful in controlling the 2003 outbreak of SARS. In your opinion, what were two or three key initiatives undertaken by the international community in the wake of SARS that increased global preparedness for outbreaks of infectious disease? What did the international community learn about measures such as travel advisories, travel restrictions, and quarantines? Are these lessons applicable to a possible outbreak of avian influenza?

Participants agreed that SARS alerted the international community to its vulnerability to, and lack of preparedness for, infectious diseases. Important measures were taken to enhance that preparedness:

- Public health became a major international political and economic issue. The importance of improving global public health was recognized in UN reform documents, e.g. integrated into concepts of comprehensive security. The importance of having an effective WHO was also recognized.
- WHO revised its International Health Regulations (IHR 2005), providing an international legal framework for preparedness for, and responses to, outbreaks such as SARS. With the new IHR, WHO has a clearer framework to provide leadership on public health emergencies. IHR 2005 includes standards for use of travel advisories, restrictions, and quarantines by states and by WHO. IHR identified a broader range of disease outbreaks as public health emergencies, including smallpox, polio, and SARS. They oblige countries to assume broader responsibilities to build system capacities to detect and respond to public health emergencies.
- Global networks of scientific, medical, and clinical collaboration were built in the wake of SARS which have been important for monitoring avian influenza. The WHO global disease alert program has allowed unprecedented exchange of information between experts worldwide, and has allowed scientists from different countries – including, for example, those from Hong Kong, Vietnam, and Singapore – a forum to share their research and findings. SARS also highlighted the importance of hospital infection control, the adoption of which could be particularly important for health care workers in an influenza outbreak.
- Through these networks (including the Global Public Health Intelligence Network (GPHIN), the Program for Monitoring Emerging Diseases (PROMED), and others), WHO gathers and analyzes data from non-state

actors. This may help ensure that even if surveillance systems are not operational, or if countries attempt to suppress information about outbreaks, WHO will be able to investigate/respond.

- SARS demonstrated that tremendous economic cost accompanies outbreaks of infectious disease, and the fear of those economic costs may reduce transparency and hamper surveillance. Such costs result from trade restrictions, economic damage from poultry culling, reduction in travel and tourism, etc.
- SARS also highlighted the potential for tensions between WHO and the countries where outbreaks have to be managed. These tensions will have to be managed so they do not disrupt efforts to contain the public health threat. Countries do not always welcome WHO recommendations and advice.

Participants stressed the importance of the new International Health Regulations. The IHR should be able to provide the international community with an inventory of countries that are capacity-deficient in terms of surveillance and public health response capabilities. They noted, however, that the IHR will not be applicable until 2007. Moreover, the obligations of member states to build core national surveillance and response capabilities do not come fully into effect until 2012 (with a two-year grace period, so the real date is 2014). In light of the threat posed by an avian influenza pandemic, the international community should support accelerated compliance to the revised IHR, providing support as necessary to countries to meet the IHR requirements.

The IHR raises other serious issues. WHO requires more resources to be able to fulfill the new responsibilities outlined in the IHR. National governments will be unable to meet their obligations on surveillance, for example, without an influx of resources. The IHR raises serious jurisdiction questions in federal states, as local and provincial/state levels of government have responsibility for provision of health care and public health surveillance, while national governments report to WHO.

Participants noted the importance of non-governmental sources of public health information. In the outbreaks of the past 10 years, almost every case was reported in PROMED by local physicians, international doctors working with medical NGOs, or vets, before being identified by WHO or other health authorities. The role of medical NGOs is critical in the identification of outbreaks in areas where formal health systems are weak or non-existent. One key question was, do WHO, the Food and Agriculture Organization of the United Nations (FAO), the World Organization for Animal Health (OIE), and other international public and animal health organizations have the capacity to respond to the potential outbreak alerts in PROMED? Or is there the

possibility of intelligence failures, i.e. the information has been reported, but because of a lack of capacity/personnel, these reports have not been picked up by those agencies who could respond?

Most participants agreed that travel advisories, restrictions, and quarantine alone would be of little use in an influenza outbreak. However, if used as part of a larger strategy, they could play a role in slowing or delaying its spread.

- With SARS, by the time that border control measures and quarantines were put into place, there was little risk of importation. Over 35 million people were thermally screened at borders in several countries. No cases were detected. Exit screening, i.e. preventing people from boarding planes, may be more effective.
- The R0 of influenza, the standard measure of transmissibility, is similar to, or slightly less than, that of SARS. However, transmission happens more quickly, so one could call influenza more infectious. Virulence, as measured by case-fatality proportion, is also lower – 2% or so in 1918, vs. 10% or so for SARS.
- Is the primary role of travel advisories and restrictions to prevent the spread of disease or to prevent global panic (i.e. governments *are* doing something to respond to the outbreak). In the case of Toronto, travel had already declined prior to WHO's advisory. WHO's authority to issue travel advisories has been clarified by the IHR, and more scientifically-based WHO travel advisories could counterbalance advisories by individual states.

Critical gaps exist in international preparedness for outbreaks of infectious disease. As many emerging and re-emerging infectious diseases are zoonotic (animal diseases that can be transmitted to humans), strong coordination and collaboration between animal health and public health experts is crucial. What two or three key activities to enhance this coordination should multilateral agencies such as WHO, FAO, and the OIE be doing?

Surveillance systems must be strengthened to ensure early detection and rapid response to outbreaks. In the absence of effectively functioning health systems in many countries, what are two or three key measures that the international community can undertake to develop/strengthen these surveillance systems?

Can you think of examples of developing countries that are making admirable progress to prepare for outbreaks of infectious disease? What lessons can be learned from these countries? What can Canada do to assist in these preparations?

Participants underscored the need for heightened integration of human and animal surveillance at all levels:

- Permanent links between public health and animal health communities should be developed. Funding for animal surveillance is weak, and there is a need for a global network to share information on animal health. Participants mentioned PROMED, which tracks communicable diseases in humans, animals, and plants.
- WHO, FAO, and the OIE require harmonized disease control strategies for poultry and humans which would cover areas such as identification and reporting of disease outbreaks, placing restrictions on travel and food trade, and deployment of health personnel and drugs. Joint activities among these organizations are required, including field investigations, epidemiological studies, and acquiring and sharing inventory of H5N1 virus strains.
- Reform of animal health and husbandry practices should be placed high on development agendas.

Participants also argued for more investment in surveillance systems, and noted that there is a need for a global strategy from local to international levels. However, they also argued that it is critical that efforts to boost surveillance also focus on increasing public health capacity and that these surveillance systems become sustainable. They suggested the following specific measures:

- WHO's Global Outbreak Alert and Response Network (GOARN) needs more resources and more personnel to be effective.
- Due to the weakness of local systems, solutions may lie in developing/enhancing regional surveillance systems. Regional organizations could form a hub for surveillance.
- Incentives to report animal health issues are non-existent. Governments do not have clout to force notification, and developing countries lack the resources to compensate for economic losses.
- The public health infrastructure problem has consistently been neglected by donors. Human surveillance systems are only as good as the public health infrastructure. Lab capacities have to be bolstered, standardized reporting mechanisms created, and satellite and cell phone connections improved. There is also a risk of surveillance diverting resources from immediate public health needs.
- The role of medical NGOs in providing information was highlighted. Working relationships with NGOs should be facilitated.
- Capacity-deficient countries should be identified and assisted in the development of surveillance systems and preparedness plans.

- Incentives should be provided to health care providers and others for reporting cases. This includes financial compensation to owners for the full costs of identifying bird outbreaks, loss of poultry, and loss of ongoing ability to use premises for farming.

Countries the participants mentioned as making good progress in pandemic preparedness included Thailand (for its high level of political commitment) and Hong Kong (for its transparency coupled with accountability, improvement in hospital infection control, and massive public education).

Consider the following scenarios of H5N1 human-to-human transmission and provide your opinion of the potential impact of such outbreaks. Please go beyond direct public health effects to identify potential social, economic, security, human rights, and/or political impacts.

Cases of human-to-human transmission of H5N1 are reported from Guangdong Province, China. WHO identifies this as Phase 4 in its pandemics stages. What is the best case outcome? What is the worst case outcome? What factors would result in a best case outcome? What would change if this outbreak occurred in Indonesia? Or in East Africa?

Outbreak in Guangdong

Participants outlined that the best case scenario – successful containment of an influenza outbreak – was more likely under the following conditions:

- Emergence in a rural area;
- Improved surveillance;
- A well-developed public health/health care system, so sick individuals have incentives to seek care, and community health workers are able to provide timely diagnosis and reporting to authorities;
- Effective governance structures, including a workable pandemic response plan, to ensure coordination of activities across government;
- Rapid isolation, reduction of human-to-human contact, antiviral prophylaxis, and stockpiles of antivirals available; and,
- Communication with the public, including sensible advice on measures that the public can take without the government.

Experts also noted that international assistance would be necessary to increase the efficacy of public health actions and create confidence outside China in its response to any pandemic. China would suffer adverse political,

economic, and social consequences, requiring skilled political management from any outside intervener.

Experts also outlined what they considered to be the worst case scenario. They argued that the virus could mutate and its ability to undertake human-to-human transmissibility would be enhanced. Multiple virus introductions could occur (i.e. the virus jumps from animals to humans in separate, multiple places at around the same time). The virus becomes highly infectious and people are infectious without symptoms. China resists partnering with international agencies and experts. The fear associated with influenza creates the potential for worrying destabilization.

Outbreak in Indonesia

Participants noted that Indonesia has weaker public health capabilities than China, and there would be a need for more international assistance to identify and manage the outbreak. Indonesia's current response to avian flu indicates a lack of transparency in disease reporting. Indonesia's government would have less capability to maintain political, economic, and social control in the midst of an outbreak. There is a serious lack of surge capacity within the health care system to respond to disease outbreak.

Moreover, other countries may be more willing to restrict trade and travel earlier and more extensively with Indonesia, because it does not have the global economic importance of China. Due to the existing political tensions in Indonesia, outbreak of pandemic influenza, and the accompanying economic and social turmoil, may exacerbate tensions and destabilize the country.

Outbreak in East Africa

When examining the possibility of an outbreak in East Africa, experts noted that public health capabilities in East Africa are weak, and in some states almost non-existent. More international assistance would be needed. Moreover, East Africa has high numbers of HIV-positive individuals, which may create complications for responses to outbreaks.

Our experts debated the risks of co-infection of HIV and pandemic influenza. Given the HIV prevalence rate is high in Africa, how the virus reacts in individuals with HIV becomes an important public health issue. There have been no studies of what would happen if someone who is HIV-positive became infected with H5N1. During SARS, although HIV-positive patients

shared the same ward as SARS patients in Guangdong, none developed SARS.

Participants outlined two separate issues – the severity of diseases in immuno-compromised individuals and the transmissibility of the virus. In cases of non-pandemic flu in immuno-compromised patients, the viral shedding process lasts longer (up to 21 days, as it does in children).

Participants highlighted several possible scenarios in people living with HIV/AIDS:

- Because the immune systems of HIV-positive individuals are already compromised, the virus could replicate longer and in higher numbers, thereby providing more opportunities for the appearance of mutants that could produce or increase the opportunities for human-to-human transmission.
- HIV-positive individuals would be unable to mount a sufficient immune system response to the virus and the mortality rate would be extremely high.
- HIV-positive individuals, because of their weakened immune systems, would mount less effective responses to the virus, but would thereby be spared some of the severe outcomes, which are partially due to immune system activation.

One expert noted that while the second and third scenarios are obviously mutually contradictory, the first might coexist with either or neither – since the first scenario has to do with virus replication, and the second and third scenarios deal with host consequences, which could be related in many different ways.

The international community needs countries to be fully transparent in reporting outbreaks of infectious diseases (both animal and human). In turn, countries need their public health and animal health officials, as well as their citizens, to report any suspected outbreaks. What incentive structures exist to encourage such transparency? What incentive structures could/should be put in place?

One participant argued that the incentives for transparency were clear and numerous. States, therefore, do not require compensation because they have all the incentives they require. These incentives include:

- Political and economic benefits: Transparency reduces economic and political costs in the medium and long term. Transparency makes both

- the reporting country and the international community better off over time.
- Public health benefits: Timeliness and effectiveness of interventions are enhanced by transparent surveillance.
 - Human rights: Lack of transparency from governments can lead to unnecessary restrictions being placed on individuals.
 - Cover-ups are not effective: Because of media reports, the possibility that a state can cover up an outbreak is minimal. Lack of transparency will be exposed, and the state will suffer political and economic costs. Failure to report would likely bring about more aggressive institution of travel restrictions, etc.

Moreover, all OIE member states are required to report certain diseases, including avian influenza, within 24 hours of their detection. The revised IHR require member countries to report a wider range of infectious diseases, and the WHO's GOARN provides operational support to countries in the identification of, and response to, outbreaks. The presence of an international stockpile of antivirals is also an incentive for countries to report.

There is a risk that compensation may divert scarce resources away from immediate public health problems to pandemic preparedness. Therefore, incentive structures for individuals (i.e. farmers) may be necessary. Government-run, mandated insurance policies or compensation schemes could compensate poultry farmers.

Pandemic preparedness plans are relying on a combination of quarantine, social distancing measures, and antiviral prophylaxis to mitigate the impact of a pandemic outbreak of influenza. An article in the September 8, 2005 edition of *Nature* modeled this strategy in a simulated outbreak in Thailand, and argued that it could successfully mitigate the spread of H5N1 influenza (provided the basic reproduction number of the H5N1 virus was below 1.8). What are the risks of such a strategy? Do you agree that these measures would be effective? What are the difficulties of transforming this plan into reality?

Our experts argued that too much emphasis is being placed on containment. Participants argued that such containment requires:

- Detection of the outbreak within 20 days and immediate and adequate response thereafter. There is a probability that the emergence event could occur in a place where it cannot be detected. Moreover, an introduction in a city would be uncontrollable.

- Delivery of prophylaxis to 90% of contacts within two days, thereby requiring adequate antiviral supply.
- A low virus reproductive rate (below 2).
- No resistance to antivirals. There is also a risk that some antivirals are not safe for use in children, and that such use could result in the development of antiviral resistance.
- Only one introduction of the virus. However, multiple introductions are very likely and must be planned for.
- No flight from the outbreak region.
- Widespread compliance with antiviral use and social distancing.

Therefore, an H5N1 outbreak could be successfully contained only under very specific conditions, i.e. an outbreak in rural Thailand where there is a chance of early detection and response before it spreads to more populated areas. For containment to be successful, surveillance systems need to be strengthened. Moreover, containment plans do not account for the possibility of multiple introductions of the virus.

The effectiveness of quarantine and other efforts to contain an outbreak of influenza are questionable given its transmissibility. Containment measures are more symbolic than effective in fighting influenza. However, such actions are politically necessary to ensure that governments are not accused of inaction. Moreover, containment plans place too much emphasis on Tamiflu, the efficacy of which is questionable. Because children appear to metabolize Tamiflu faster, the paediatric use of Tamiflu may be a health risk to children and also propagate mutations.

Participants stressed that containment planning is also an important mechanism to focus preparedness efforts in potential source countries – to have a concrete goal toward which to direct efforts to develop infrastructure, surveillance, etc. The policy of containment will buy time to allow for the production of a vaccine, the large-scale use of which would be feasible only in wealthy countries.

However, participants noted that there is also a political risk in placing so much emphasis on containment, namely that developing countries don't have an incentive to cooperate, unless they perceive that containment plans also are providing them with the ability to better respond to the health crisis resulting from an H5N1 pandemic outbreak. While buying time in an influenza outbreak is useful and necessary, measures are also needed to help countries prepare.

Our experts also noted that government capacity is required to implement pandemic plans and that a complex set of measures must be implemented. Quarantine and mass delivery of antivirals are difficult policies to implement. Jurisdiction issues in federal states could hinder response. Moreover, pandemic preparedness plans require surveillance systems to allow early intervention with public health measures.

In the case of an influenza pandemic, national governments would be faced with serious dilemmas regarding the distribution of scarce supplies of antivirals and vaccines. The role of intellectual property rights potentially curtailing the production of antivirals is being hotly debated. Some argue that the problem is not patent protection, but rather that the process of manufacturing some antivirals (as well as vaccines) is extremely complicated. Others argue that compulsory licenses should be granted to generic companies to manufacture antivirals as part of a global preparedness plan. What are the myths and realities surrounding the debate over intellectual property rights? What are the potential political ramifications of the intellectual property issue?

Participants outlined several myths that they associated with the debate over intellectual property rights:

- The World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is the problem: Experts noted that the agreement to implement paragraph six of the Doha Declaration allows for third-party compulsory licensing. "TRIPS does not and should not prevent members from taking measures to protect public health." However, the will to implement this agreement, as well as the Doha Declaration, is lacking. There is fear of incurring the wrath of the US or the EU.
- Compulsory licenses are the answer: Participants argued that increasing the production of antivirals does not erase the challenges of using them to respond to pandemic influenza. Even if you give a country more antivirals, there are serious questions about their efficacy. Additionally, infrastructure, capacity, and training are still required to deliver drugs in a timely manner.

Participants outlined what they considered to be the realities behind the intellectual property rights debate:

- There is a strong need for market mechanisms and incentive schemes to boost vaccine and antiviral research and production. Innovation capacity does not depend on intellectual property protection alone. Other incentives such as government grants, research funds, availability of venture capital, etc., are also important.

- Political will is needed to mobilize international consensus on the intellectual property rights issue. The debate over intellectual property rights versus public health has been a contested issue in discussions on access to HIV antiretrovirals, and is now being discussed in the context of pandemic influenza. Experts argued that intellectual property issues remain the weak link that needs to be addressed more forthrightly nationally and internationally. Potential solutions could borrow from the pandemic stages approach, i.e. develop a pre-agreed template for when extraordinary measures are needed to meet an infectious disease pandemic.
- One serious equity issue that needs far more discussion is *who* should receive vaccines and antivirals.

Participants noted that intellectual property issues can have important repercussions for bilateral relations in the event of an outbreak of pandemic influenza. Populist leaders in developing countries could blame developed countries for lack of drugs. The situation could also be manipulated by countries to practice protectionism, i.e. boosting domestic employment by manufacturing drugs locally.

Because of its social and economic effects, a pandemic outbreak of influenza (such as H5N1) would quickly be transformed from a public health issue into a national security issue. President Bush recently stated that the military would be used to implement quarantines. What are the risks of 'securitizing' public health issues? What would be the impact of involving the military in efforts to control outbreaks?

Traditionally, the state has had the power to act against the individual for the benefit of public health. However, there are concerns that in the fear and panic that would accompany any serious global infectious disease outbreak, human rights may be violated needlessly. How can the state balance the need for protection of public health while ensuring the protection of human rights?

Experts noted that there are risks associated with involving the military in efforts to control the spread of pandemic influenza. In countries where the military is viewed as an oppressive force, and where the military has a history of human rights violations, the use of the military to address public health issues could be extremely problematic. The use of the military could also create coordination problems, such as confusion regarding the chain of command.

In the United States, the Posse Comitatus Act of 1878 forbids the use of military personnel in law enforcement duties except in very special circumstances,

and therefore President Bush's reference to utilizing the military in the event of an outbreak of pandemic influenza was controversial.

However, participants stressed that using the military to enforce quarantines implies a trade-off between human rights and public health that does not necessarily exist. Moreover, given the public's voluntary compliance to quarantine measures (i.e. during the 2003 SARS outbreak in Toronto), military enforcement is often not necessary. Most pandemic preparedness plans include the military as part of emergency services response capability (this is the case in Canada). However, there are risks associated with using the military in pandemic response, particularly in countries with a history of internal instability. Training and sensitization programs could be conducted via bilateral and multilateral defence channels.

Experts argued that the securitization of public health does not by definition mean the militarization of public health. The best securitization of public health produces a minimal role for military forces. Most participants noted that the military will be a necessary part of pandemic response – their logistical capacity will be required to deliver medicines, equipment, and food, and to assist with law enforcement.

One participant cautioned that the fight against pandemic influenza may result in a fight against sick individuals rather than the virus. This is particularly risky in situations where the military is not trusted or there is instability. There is a risk of vicious discrimination against certain groups, particularly among already ostracized communities.

Participants stressed that the issue of balancing human rights and public health is well understood doctrinally – the principles are clear. However, the problem is implementation when crisis hits. Therefore, legal preparedness should be part of pandemic preparedness planning. States will need to maintain the rule of law during the crisis and not succumb to pressure to institute draconian measures that would violate human rights and have limited public health benefits.

Experts underlined that public health preparedness should be seen as a component of human rights protection, i.e. improving surveillance and intervention capabilities boosts a government's ability to ensure its citizens' civil and political rights. A preparedness agenda based on civil rights – including public awareness campaigns based on science, honest and timely risk communication, and effective mobilization of civil society groups – is more constructive in addressing public health issues.

However, social capital is required for effective public health policy. Participants stressed that in a securitized public health atmosphere, fear and panic will result in less cooperation. Draconian measures could encourage people to shun public health directives. During the SARS outbreak, the rumour that the government would quarantine Beijing led to the flight of 1 million people.

Moreover, there is a risk of discrimination against certain groups during a pandemic. Public health emergencies can starkly reveal structural racism and inequalities. The experience of the Chinese community during SARS is telling. In New Jersey, some school children of Chinese origin were prohibited from going to school despite never having been to China. In Indonesia, the ethnic Chinese population has been the target of several violent outbursts, the most recent in 1998. There is a risk of renewed violence against this community in the wake of an outbreak of influenza, particularly if that influenza comes from China. Such discrimination can have long-term political consequences.

Participants cautioned that moral, ethical, and legal dilemmas will arise over who gets limited access to antiviral and vaccine supplies. States will also need to ensure that health care workers have adequate protection, insurance schemes, etc. In the effort to minimize panic, governments must ensure that they do not inappropriately downplay risk.